FINANCIAL STABILITY REPORT

05/2018

BANCO DE ESPAÑA
Eurosistema

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ABBREVIATIONS [*]

€	Euro
AIAF	Asociación de Intermediarios de Activos Financieros (Association of Securities Dealers)
ABCP	Asset-backed commercial paper
ATA	Average total assets
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
BLS	Bank Lending Survey
bn	Billions
bp	Basis points
BRRD	Bank Recovery and Resolution Directive
CBE	Banco de España Circular
CBSO	Banco de España Central Balance Sheet Data Office
CCyB	Countercyclical capital buffer
CCR	Banco de España Central Credit Register
CDO	Collateralised debt obligation
CDS	Credit Default Swap
CEBS	Committee of European Banking Supervisors
CEIOPS	Committee of European Insurance and Occupational Pensions Supervisors
CET1	Common equity Tier 1 capital
CIs	Credit institutions
CNMV	Comisión Nacional del Mercado de Valores (National Securities Market Commission)
CPSS	Basel Committee on Payment and Settlement Systems
DIs	Deposit institutions
EAD	Exposure at default
EBA	European Banking Authority
ECB	European Central Bank
EFSF	European Financial Stability Facility
EMU	Economic and Monetary Union
EONIA	Euro overnight index average
EPA	Official Spanish Labour Force Survey
ESFS	European System of Financial Supervisors
ESM	European Stability Mechanism
ESRB	European Systemic Risk Board
EU	European Union
FASB	Financial Accounting Standards Board
FLESB	Forward-Looking Exercise on Spanish Banks
FROB	Fund for the Orderly Restructuring of the Banking Sector
FSA	Financial Services Authority
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSF	Financial Stability Forum
FSR	Financial Stability Report
FVC	Financial vehicle corporation
GAAP	Generally Accepted Accounting Principles
GDI	Gross disposable income
GDP	Gross domestic product
GHOS	Group of Central Bank Governors and Heads of Supervision
G-SIIs	Global systemically important institutions
GVA	Gross value added
GVAmp	Gross value added at market prices
IASB	International Accounting Standards Board
ICO	Instituto Oficial de Crédito (Official Credit Institute)
ID	Data obtained from individual financial statements
IFRSs	International Financial Reporting Standards
IMF	International Monetary Fund
INE	National Statistics Institute
IOSCO	International Organization of Securities Commissions
ISDA	International Swaps and Derivatives Association
JST	Joint Supervisory Team
LGD	Loss given default
LTROs	Longer-term refinancing operations

(*) The latest version of the explanatory notes and of the glossary can be found in the November 2006 edition of the *Financial Stability Report*.

LTV	Loan-to-value ratio (amount lent divided by the appraised value of the real estate used as collateral)
m	Millions
MiFID	Markets in Financial Instruments Directive
MMFs	Money market funds
MREL	Minimum Requirement for own funds and Eligible Liabilities
NPISHs	Non-profit institutions serving households
NPLs	Non-performing loans
OFIs	Other financial intermediaries
OMT	Outright Monetary Transactions
OTC	Over the counter
PD	Probability of default
PER	Price earnings ratio
pp	Percentage points
RDL	Royal Decree-Law
ROA	Return on assets
ROE	Return on equity
RWA	Risk-weighted assets
SCIs	Specialised credit institutions
SMEs	Small and medium-sized enterprises
SIV	Structured investment vehicle
SPV	Special purpose vehicle
SRI	Systemic Risk Indicator
SSM	Single Supervisory Mechanism
TA	Total assets
TARP	Troubled Asset Relief Program
TLTROs	Targeted Longer-term Refinancing Operations
VaR	Value at risk
WTO	World Trade Organisation

ISO COUNTRY CODES

AT	Austria
BE	Belgium
BG	Bulgaria
BR	Brazil
CH	Switzerland
CL	Chile
CN	China
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
ES	Spain
FI	Finland
FR	France
GB	United Kingdom
GR	Greece
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
JP	Japan
KY	Cayman Islands
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
MX	Mexico
NL	Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
TR	Turkey
US	United States

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1 Key developments

Despite the surge in volatility in financial markets last February, with the consequent corrections in traded asset prices, the prevailing economic setting in the closing months of 2017 and early 2018 has generally been favourable.

The global macroeconomic scenario has been characterised by across-the-board growth, assisted by a continuing accommodative monetary policy and easy financing conditions. The risk premia on the highest-yielding European sovereign bonds, including Spanish sovereigns, have evidenced declines linked to the improved credit quality of the issuers. Against this favourable economic and financial background, the risks to financial stability have, to some extent, been contained. However, latent factors remain in place that might alter the current situation. Specifically, the implementation of procyclical fiscal policies in some countries, such as the United States, may give rise to the emergence of imbalances which, in the case of inflation, may alter expectations about future moves by the monetary authorities, and in the case of the external accounts, may escalate the application of protectionist measures. This, along with a potential resurgence of geopolitical tensions, could reverse the existing situation of confidence, driving up risk premia and changing the relaxed state of current financing conditions, with an ultimate impact on both economic growth and the stability of the financial system.

At the close of 2017 the Spanish economy remained on the expansionary path embarked on four years earlier, growing by 3.1% in the year as a whole. This expansionary pattern is expected to continue, albeit at somewhat more moderate rates. The unemployment rate has continued to fall, standing in December at 16.5%, and in this setting the financial position of households and firms has continued to improve, with fresh declines both in debt and debt burden ratios.

The progressive improvement in the financial position of Spanish deposit institutions seen in recent years continued in 2017. Some qualifications are, however, due since the level of total consolidated business fell slightly, by 1.7% compared with the 2016 figure, essentially as a result of domestic business. As regards this latter variable, although credit to the resident private sector contracted by 1.9% in 2017, for some segments, such as consumer credit, positive growth was observed. This expansionary course of consumer credit was accompanied by something of a rise – albeit a contained one – in non-performing loans.

Consolidated income exceeded €15 billion in 2017, an increase of some 44% in comparison with a year earlier, taking return on equity (ROE) to 6%. However, this figure does not include the loss of more than €12 billion recorded by Banco Popular Español as a result of its resolution in June 2017. Taking that into account, Spain's institutions' income would be in the order of €2.7 billion, which is a drop of almost 75% on the 2016 figure.

In terms of solvency, the total capital ratio and the Tier 1 ratio continued to climb, as for the past several years, although the CET1 ratio fell slightly, to 12.7%, some 16 bp below the December 2016 figure, marked by the resolution of Banco Popular Español.

2 Risk factors

Identified below are the main factors of risk to the stability of the Spanish financial system:

RISK FACTORS (a) TABLE 1

1	Downward pressure on bank profitability, in particular in domestic business, influenced by the low interest rate environment, the decline in lending activity and the high - though falling - level of non-productive assets.
2	Potential sharp correction in financial asset prices in the face of significant changes in monetary policy expectations, especially in the United States, or in the global macroeconomic outlook, which in this latter case might be triggered by an escalation of protectionist measures or the materialisation of geopolitical risks.

SOURCE: Banco de España.

a The colours in the table are as follows: green denotes an absence of risk, yellow is low risk, orange is medium risk and red is high risk. The time horizon for which these risks are defined is determined by the FSR's frequency, i.e. it is biannual.

The risk factors identified coincide with those highlighted in the previous edition of the Financial Stability Report (FSR), albeit with certain differences. Specifically the second risk has been upgraded from low in the last FSR to medium, given the market sensitivity observed, following the recent episode of increased volatility, to certain news items affecting the economic growth and inflation outlook. The persistence over time of clearly favourable conditions in the financial markets raises doubts as to whether this situation is in response to economic fundamentals, or whether the market is simply adopting an over-complacent approach to risk. It is for these reasons that the second risk has been raised to medium.

Also, although the financial tensions surrounding the political situation in Catalonia have declined, a possible increase in uncertainty with potentially adverse effects cannot be ruled out.

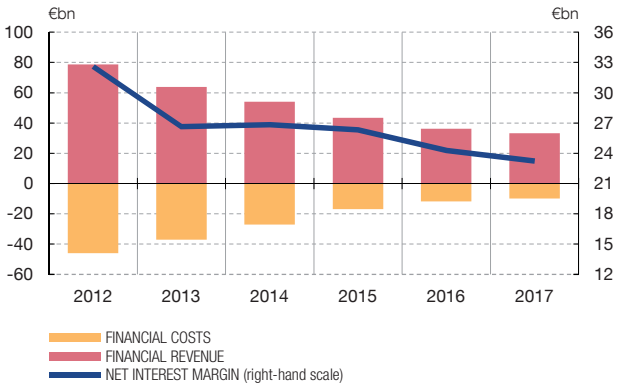
These factors are closely interconnected, so that the materialisation of one may trigger the other. Moreover, the risk factors highlighted coincide with those identified by other international authorities, as they affect, to a greater or lesser extent, the financial systems of our fellow European countries.

2.1 DOWNWARD PRESSURE ON BANK PROFITABILITY

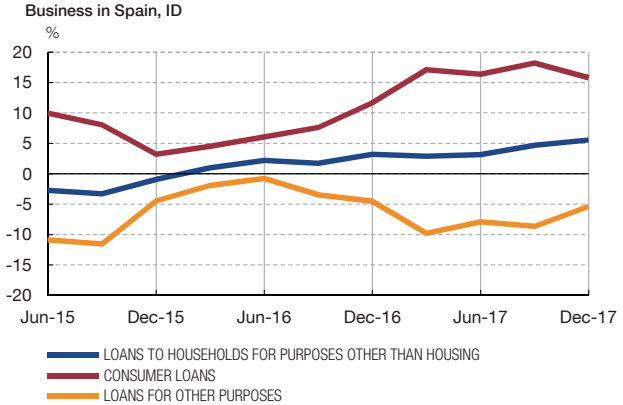
Spanish deposit institutions' net interest margins in the domestic business remain under pressure, as a result of the low level of interest rates, coupled with the decline in business volume and the still-high level of non-productive assets on banks' balance sheets. Chart A shows the change in financial revenue and costs and the gradual decline in net interest margin in business in Spain. The decline in income generation is partially offset by financial costs which have also fallen, although with an increasingly narrow margin for further reductions, resulting in a decline in net interest margin.

One of the potential consequences of this is that institutions may seek alternative sources of income that offer higher rates of return but may also entail higher risk. This, together with other demand factors, could help explain the momentum observed in consumer credit (see Chart B). This is a business segment where non-performance is generally relatively high and where guarantees play a smaller part; in consequence, how this portfolio and its NPL rates perform should be monitored closely in coming quarters. In any event, consumer credit accounts for just 4.8% of total credit to the resident private sector.

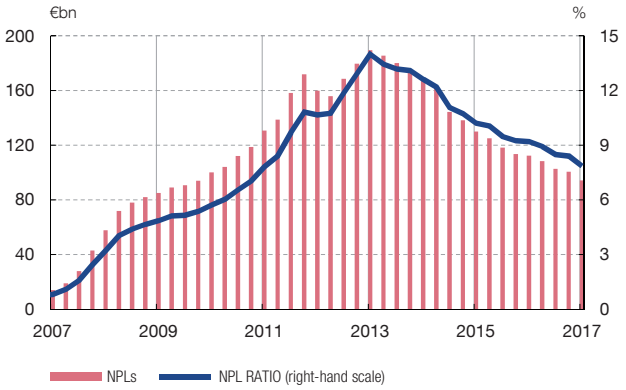
A FINANCIAL REVENUE AND COSTS AND NET INTEREST MARGIN
Business in Spain, ID



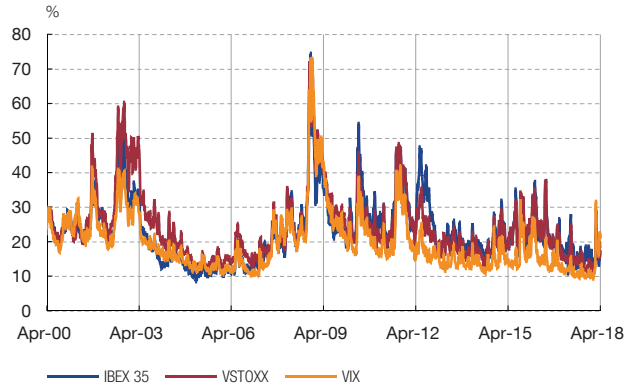
B YEAR-ON-YEAR RATE OF CHANGE OF LOANS TO HOUSEHOLDS EXCLUDING HOUSING AND ITS COMPONENTS
Business in Spain, ID



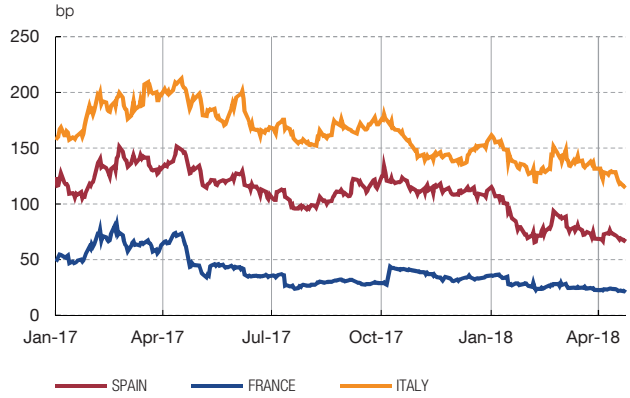
C RESIDENT PRIVATE SECTOR NPLs AND NPL RATIO
Business in Spain, ID



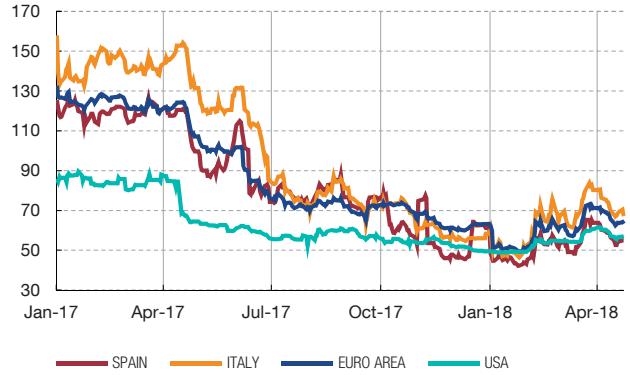
D IMPLICIT VOLATILITY (a)



E 10-YEAR SOVEREIGN YIELD SPREADS OVER GERMANY



F BANK CREDIT RISK PREMIA. 5-YEAR CDSs



SOURCES: Banco de España and Datastream.

a 5-day moving averages.

Although pressure on profitability continues to be classified as a medium-level risk factor, it is important to highlight the progress made by deposit institutions in recent years to reduce the volume of non-productive assets. Thus, the NPL ratio of credit to the resident private sector in Spain has fallen back by almost 6 pp from its 2013 peak, with non-performing loans down in cumulative terms to half the 2013 level (see Chart C). The combination of higher economic growth and active management by banks is giving rise to a continuous decline in these assets, reflected directly in both the NPL ratio and the income statement.

2.2 POTENTIAL SHARP CORRECTION IN FINANCIAL ASSET PRICES

While volatility indices soared in financial markets in February (see Chart D), with the consequent corrections in traded financial asset prices (especially equities), financial conditions have generally remained quite favourable (see Charts E and F).

In any event, the volatility episode demonstrated the sensitivity of traded asset prices to changes in monetary policy expectations or to the extended application of protectionist measures, the loss of agents' confidence and the existence of geopolitical risks. In this setting, the risk of a sharp adjustment in financial market valuations would have heightened.

The materialisation of these risks would give rise to a tightening of financial conditions which, together with wealth effects, could have a negative impact on growth prospects, the sustainability of the liabilities of heavily-indebted sectors and the financial system as a whole, with an immediate effect on its future profitability prospects.

Thus, given the low risk premia and the levels reached by some stock market indices, a sharp price correction could have worrying consequences.

As in previous editions of the FSR, the above-mentioned risks are analysed in greater detail in the Report, seeking to show their interrelatedness and their impact on the financial system, in particular on the business pursued by Spanish deposit institutions, and the potential repercussions on their credit risk, profitability and solvency position.

3 Macroprudential analysis and policy

Chapter 3, as in previous editions of the FSR, describes the macroprudential stance adopted by the Banco de España in recent months. In particular, the updated map of systemic vulnerability indicators is presented, with a description of the latest changes therein, together with the macroprudential policy decisions taken on the basis of the monitoring of the variables and indicators used.

1.1 Financial markets

The favourable tempo on international financial markets continued until February...

Since the publication of the last Financial Stability Report (FSR) and until end-January, global financial market conditions maintained the favourable tempo observed in previous months against a backdrop of ample liquidity and widespread economic recovery. Stock market indices tended to appreciate and even reached all-time highs in some cases, such as the United States (Chart 1.1.A), implied volatilities held at very meagre levels and the credit spreads on higher-risk debt, such as high-yield corporate bonds and emerging economies' bonds narrowed to historically low values (Chart 1.1.B). The interest rates on most developed countries' government debt posted increases which stepped up from the beginning of the year, although they remained at moderate levels (Chart 1.1.C). The dollar depreciated across the board against the euro, yen and sterling, as well as against most emerging economies' currencies. This weakening of the dollar seems to have been underpinned by a widening of the growth differential between the United States and the rest of the world, the existence of "twin deficits" – fiscal and current account – in the US economy and it took place despite positive US economic data, higher policy interest rates and differentials against other economies (Chart 1.1.D).

...when it was interrupted temporarily by a sharp rise in volatility on the US stock market which fed through to European bourses

Following a protracted period of calm, in early February there was a sharp correction in prices traded on US stock markets in tandem with a robust rise in the implied volatility index of the S&P (VIX) which on 5 February recorded its highest daily rise since the stock market crash of 1987 (Chart 1.1.E). The trigger for these movements was the publication of higher-than-expected wage growth data in the United States which made investors fear a higher pace of policy interest rates hikes against a backdrop of growing concern about the high valuations of the S&P 500 index, following the substantial appreciation built up over recent years, as reflected by some stock-market valuation metrics (see Box 1.1). Certain technical factors linked to the larger role of passive investment strategies, the growing use of electronic trading platforms and, especially, market operations in volatility derivatives [1] may have contributed to the strength of these movements. These markets, albeit small, favour the persistence of low volatility in calm periods whereas faced with a shock they can amplify movements.

European stock markets were affected by the contagion of this turmoil, which was followed by a sharp rise in volatility and a price correction (Charts 1.1.A and 1.1.E). This contagion occurred even though in European markets – unlike in US markets – there was no clear evidence of excessive share price valuations, since this was not indicated by any of the metrics generally used (see Box 1.1).

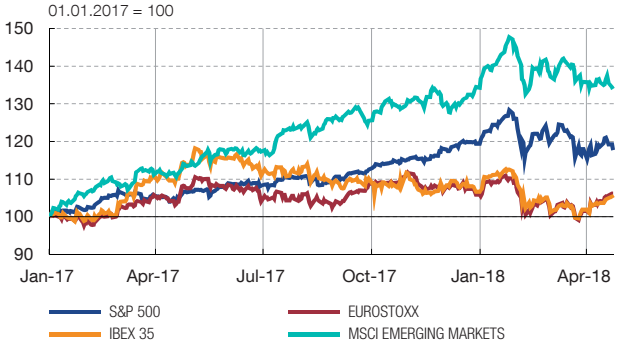
After this episode, the volatilities of stock market indices eased gradually although for the VIX it remained at higher levels than those prevailing in the preceding months. These indices tended to climb gradually, although at the beginning of March there was another correction following the announcement of higher tariffs in the United States. In March and April the stock markets were heavily influenced by developments relating to this heightened protectionism and by other geopolitical tensions. At the cut-off date of this report, the S&P 500 stood somewhat above the levels at end-October, while European stock market indices were showing losses (the Euro Stoxx 50 was down 4.4%). After performing more unfavourably than the euro area average during September and October, largely as a result

1 For more details, see Box 3 of the Quarterly Report on the Spanish Economy, Banco de España, March 2018.

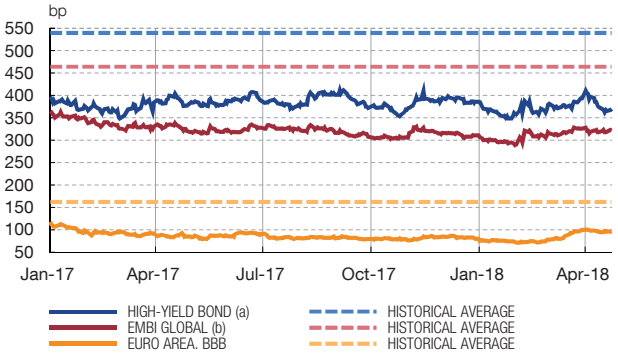
FINANCIAL MARKET INDICATORS

CHART 1.1

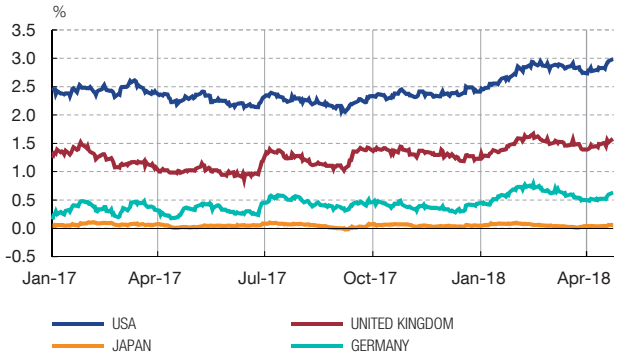
A STOCK EXCHANGE INDICES



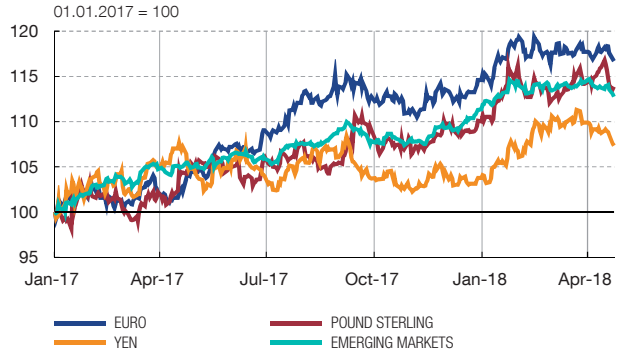
B CORPORATE SPREADS



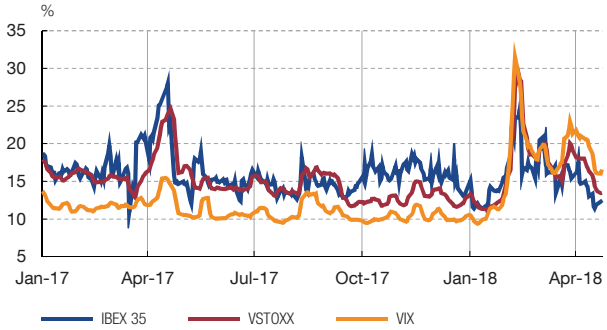
C LONG-TERM INTEREST RATES



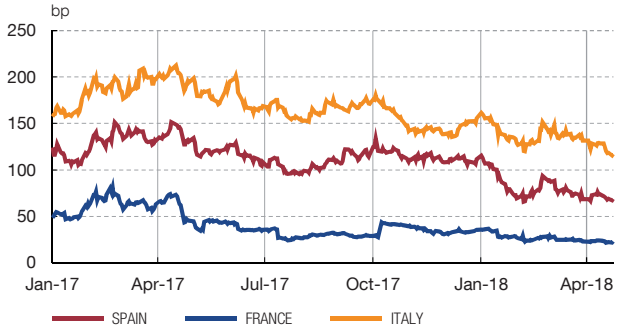
D EXCHANGE RATES AGAINST US DOLLAR (c)



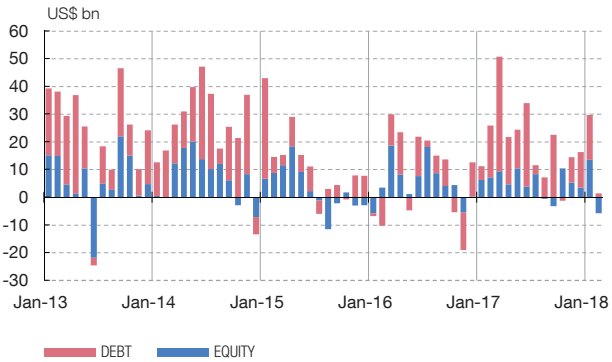
E IMPLIED VOLATILITY (d)



F 10-YEAR SOVEREIGN YIELD SPREADS OVER GERMANY



G CAPITAL FLOWS TO EMERGING MARKETS



H BANK CREDIT RISK PREMIA. 5-YEAR CDSs

SOURCES: Datastream and IIF.

a Merrill Lynch corporate bond spread with "B" credit rating over10-year US Treasury bond.
b The Global Emerging Markets Bond Index (EMBI) is an index developed by JP Morgan to measure the country risk of all emerging countries. It represents the spread of the sovereign debt interest rate of the emerging countries in dollars over the interest rate on 10-year US Treasury bonds.
c Values over 100 show depreciations of the dollar with respect to 1 January 2017.
d 5-day moving averages.

of the political tensions in Catalonia, the performance of the Spanish stock market was similar from end-October, once the strains in that autonomous community eased.

Returns on long-term fixed income securities increased gradually in a setting of an improving global economic outlook and the yield spreads on the main European sovereign bonds narrowed

The bout of stock market volatility in February curbed the pattern of rising yields on higher-rated bonds in government debt markets. That said, the increases built up since the start of 2018 were striking, especially in the United States (57 bp to nearly 3%). These developments were underpinned by higher inflation expectations and a faster pace of policy interest rate rises discounted by the markets for 2018 – which already coincide with the inflation expectations of the Federal Open Market Committee (FOMC) – as well as by the approval of the expansionary fiscal programme of the new US government which is analysed below. In the United Kingdom and Germany yields on long-term bonds increased more moderately (by 20 bp in the case of the German bund to 0.63%). As a result of the rise in higher-rated government debt yields and the change in monetary policy stance, the yield curve slopes behaved differently. For instance, whereas in the United States the slope has flattened since this economy is already at an advanced stage of monetary normalisation, in the euro area it has steepened and gradually approached historical averages.

These developments occurred in tandem with a slight decline in the risk premia of the main European sovereign bonds (Chart 1.1.F) which seems to be linked to the improvement perceived in issuers' credit quality – also reflected in the upgrading of credit ratings. In particular, the credit rating upgrades for the Spanish sovereign bonds were as follows: in January by Fitch to A-; in March by S&P also to A-; and in April by DRBS to A and by Moody's to Baa1. Thus, the yield spread between Spanish and German ten-year sovereign bonds narrowed to 69 bp (42 bp lower than its levels at end-October), having even reached 66 bp in January, which represents its lowest level since April 2010. The average credit risk premia of private issuers experienced a slight rise on both sides of the Atlantic, which was more pronounced in the case of euro area financial institutions, although they subsequently reversed to a large extent and thus remain at historically low levels (Chart 1.1.H).

Increased volatility in February had a limited impact on emerging economies' markets

Increased volatility in developed countries' stock markets had a limited effect on emerging economies' markets which were supported by the weak dollar, higher commodity prices, robust growth of activity and the gradual reduction of their external vulnerabilities, among other factors. Despite heightened volatility, carry trade transactions retained their appeal which drove the appreciation of currencies and the squeezing of sovereign spreads. Favourable financial conditions were also reflected in primary markets where a new monthly high was reached in issuance in January, thanks to sovereign placements, and the high pace of placements continued in February and March without significant changes in their conditions. By contrast, capital flows into emerging economies in February fell sharply, especially equity inflows (Chart 1.1.G), although it is early to anticipate a possible change of trend.

Risks of sharp changes in financial asset prices associated with changes in investor expectations persist

In short, despite the recent rise in volatilities, credit risk premia, especially those of higher-risk fixed income securities, and the implied term premia on highly rated long-term government bond yields remain at historically low levels, according to available estimates. Behind these developments are investors' search for returns in a setting of globally low interest rates. Some international stock market indices, particularly those in the United States, are at very high levels compared with corporate profits, although estimated stock market risk premia do not seem historically low (see Box 1.1).

The episode of correction on international stock markets in February shows how, despite the prevailing low level of volatility in the markets, in the current setting assets prices are highly sensitive to changes in agents' expectations about inflation and the future conduct

It is extremely difficult to gauge the extent to which the price of an asset is misaligned with the value justified by its economic fundamentals. The indicators traditionally used for this purpose usually compare share prices or share indices with fundamentals such as corporate profits or dividends. Two examples of this type of valuation metric are the price-earnings ratio (PER) and the dividend yield or dividend-price ratio. Given that these two metrics tend to revert to their historical averages, a share or index is considered to show signs of overvaluation if its PER is significantly above, or its dividend yield is significantly below, the historical average.

One of the problems with these two metrics as valuation indicators is that current profit and dividend information is used to calculate them, such that changes are influenced by cyclical patterns in these variables. This is a particularly important limitation in the case of the PER, as profits fluctuate more widely over the course of the economic cycle than do dividends. For this reason, Campbell and Shiller[1] proposed CAPE (the cyclically-adjusted price-earnings ratio) which smooths out standard PER using the last ten years' average inflation-adjusted earnings in the denominator, on the assumption that economic cycles last from around six to seven years. A priori, CAPE therefore offers a less distorted view of whether an index is overvalued, as it uses information covering expansionary phases and downturns rather than current data, as is the case of the other two metrics mentioned. This is consistent with the idea that investors do not value shares solely on the basis of companies' current earnings, but that they take into account the entire stream of expected future profits. Specifically, during troughs in the economic cycle, earnings will tend to be lower than their forecast long-term average, such that non-cyclically-adjusted

1 See Campbell, J. Y., and Shiller, R. J. (1998): "Valuation Ratios and the Long-Run Stock Market Outlook", Journal of Portfolio Management, 24, 11–26.

Chart A
CYCLICALLY ADJUSTED PER (a)

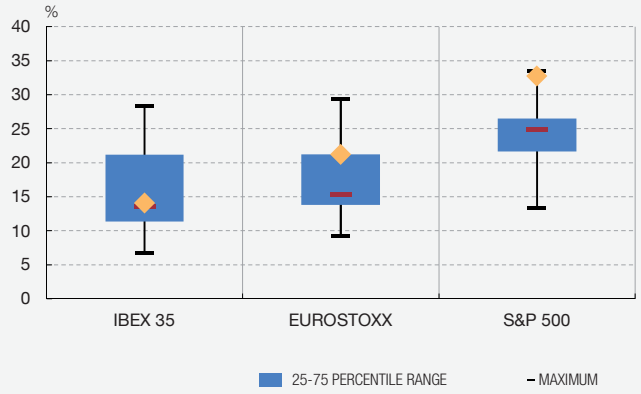


Chart B
DIVIDEND YIELD (b)

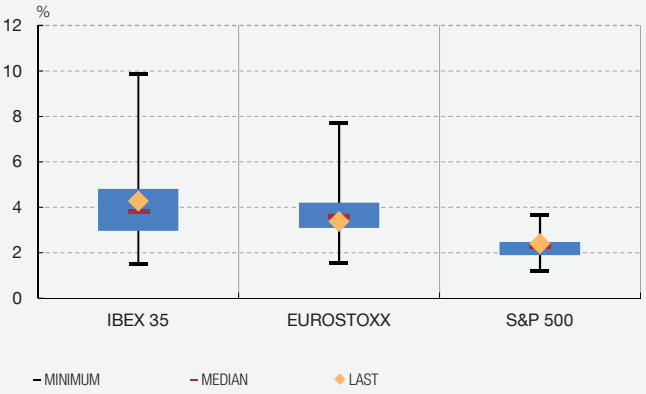


Chart C
RISK PREMIUM (c)

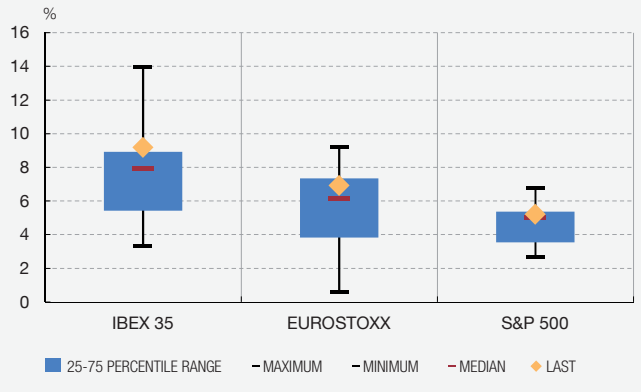


Chart D
CORPORATE SPREADS OVER TEN-YEAR SOVEREIGN DEBT AND RISK PREMIUM. USA

SOURCE: Datastream.

a Calculated as the ratio of stock prices to the ten-year moving average of profits. Daily data start in 2005.
b Calculated as the accumulated dividend over the past year by the corporations in the index divided by the index's capitalisation. Monthly data start in 2000.
c Calculated by subtracting the ten-year inflation-linked bond yield in the corresponding area from the real yield of each index (calculated using a dividend discount model). Monthly data start in 2004.

PER would be relatively high, giving rise to erroneous overvaluation signals. However, CAPE also suffers from certain shortcomings, as like PER and dividend yield, it does not take interest rates into account, even though they have a direct influence on share prices as they form part of the discount factor investors use to calculate the net present value of future dividends.

In the same vein, another valuation metric that does take interest rates into account is the implied equity risk premium in share prices. Specifically, the risk premium is defined as the excess expected return from the equity market over the bond market. One disadvantage of the risk premium compared to the other metrics mentioned is that it is not directly observable and there is no single method for calculating it. In this Box, this indicator is proxied by subtracting the ten-year inflation-linked bond yield in a given economic area from the expected real return on the index for that area, estimated using a dividend discount model.[2] On this indicator, a share or index would be showing signs of being overvalued if the implied risk premium is significantly below its historical average, as it could indicate that the return demanded by investors does not sufficiently compensate the risk incurred.

Charts A, B and C in this Box summarise the performance of the valuation metrics discussed above calculated for three share indices: S&P 500, Euro Stoxx 50 and Ibex 35. On these measures, European and Spanish stock markets would not show clear signs of being overvalued. Nevertheless, Chart A shows levels of CAPE for the United States index to currently be high and a long way from the historical average, which suggests the US market is possibly overvalued. These signs of overvaluation are not apparent, however, in the case of dividend yield (see Chart B) or the risk premium (see Chart C), as the present value in each case is close to the mean of their distribution. In any event, the results referring to the risk premium need to be taken with particular caution given that, as mentioned, this indicator is not observable and various assumptions have been made, which, while reasonable, are subject to a certain margin of error.

Chart D shows the estimated equity risk premium of the S&P 500, the yield spread on US high-yield bonds and the yield of ten-year US sovereign bonds. First of all, comparing the two risk premia shows how they were at similar levels before the crisis. During the crisis they picked up, in line with investors' higher risk perception and their more prudent attitude to risk, but the increase was more marked in the case of corporate bonds. In the most recent period, the risk premium on corporate bonds has dropped significantly, coming close to pre-crisis levels, while the equity premium is clearly above the levels observed in the pre-crisis period.[3] This evidence would suggest that investors' yield-seeking strategies in a low-interest-rate environment may have affected the equity market to a lesser extent than the fixed income market.

In short, the evidence presented in this Box illustrates the difficulty of extracting clear and unambiguous signals of the potential overvaluation of equities and the need to interpret indicators with caution and combine different indicators, as each of them has its limitations. Moreover, the results presented suggest that the signs of overvaluation are less evident in the case of European stock markets than US ones. In any event, as is mentioned in the body of the report, even if equity risk premia do not look particularly low at the moment, this does not mean that share prices are not liable to be affected by changes in agents' expectations about interest rates or future corporate earnings.

2 The dividend discount model used assumes that dividend growth will be equal to investors' estimate of profit growth over the first few years of the time span, assuming that dividends are a fixed fraction of profits. Subsequently, dividend growth gradually converges on the economy's long-term growth expectations. The corporate earnings growth forecasts were obtained from investors' forecasts supplied by I/B/E/S (Institutional Broker's Estimate System), while long-term economic growth forecasts come from Consensus Economics. For more details, see Box 2.2 of the Financial Stability Report, Banco de España, May 2016.

3 Other recent papers, such as Duarte and Rosa (2015), also find the current level of the equity risk premium to be high relative to its historical average. For more details, see Duarte, Fernando M., and Carlo Rosa. (2015): "The Equity Risk Premium: A Review of Models", Federal Reserve Bank of New York Staff Report 714.

of central banks. Accordingly, an upward revision in the expected pace of policy interest rate hikes in the United States or a change in expectations about central bank balance sheet reductions – a seemingly improbable scenario at present in view of their communication policies – could unleash an increase in term and credit premia globally, which would prompt falls in the price of financial assets, both of bonds and indirectly of equities through the positive effect it would have on the discount factor.

The prices of higher-risk bonds and equities could also show abrupt adjustments faced with disruptions which impact significantly global economic growth expectations since the latter could affect the probability of debt default and expected future corporate earnings. Increasingly discernible in the leading indicators, among the possible triggers, are the

adverse effects of the incipient escalation of tariffs which could be highly significant if a global trade war ensues. Some geopolitical risks could also materialise, although the negotiations on the United Kingdom leaving the European Union are making progress and a transition period has been agreed which will significantly facilitate the process.

These price adjustment scenarios could be expected to affect to a greater extent those segments in which prices have been boosted to a larger degree on account of the setting of low returns, as in the case of certain companies with poor credit ratings in the United States or some emerging economies, where business debt has increased significantly, especially external debt denominated in foreign currencies.

A possible robust rise in government and private bond yields could have more harmful effects on global financial stability than in the past, given the longer average term of fixed-income securities (which increase price sensitivity to interest rate changes) and the high stock of debt in bondholders' portfolios (in particular, investment funds, pension funds, insurance companies and, to a lesser degree, banks).

A possible sharp adjustment in the prices of fixed-income securities or equities could result in a tightening of the financing conditions of different economic agents as well as their loss of confidence which, together with wealth effects could have negative impacts on their spending decisions and, consequently, on the growth outlook, raising credit risk through this channel.

1.2 Macroeconomic environment

1.2.1 THE MACROECONOMIC ENVIRONMENT OUTSIDE THE EURO AREA

Recent developments in the global economy and future prospects...

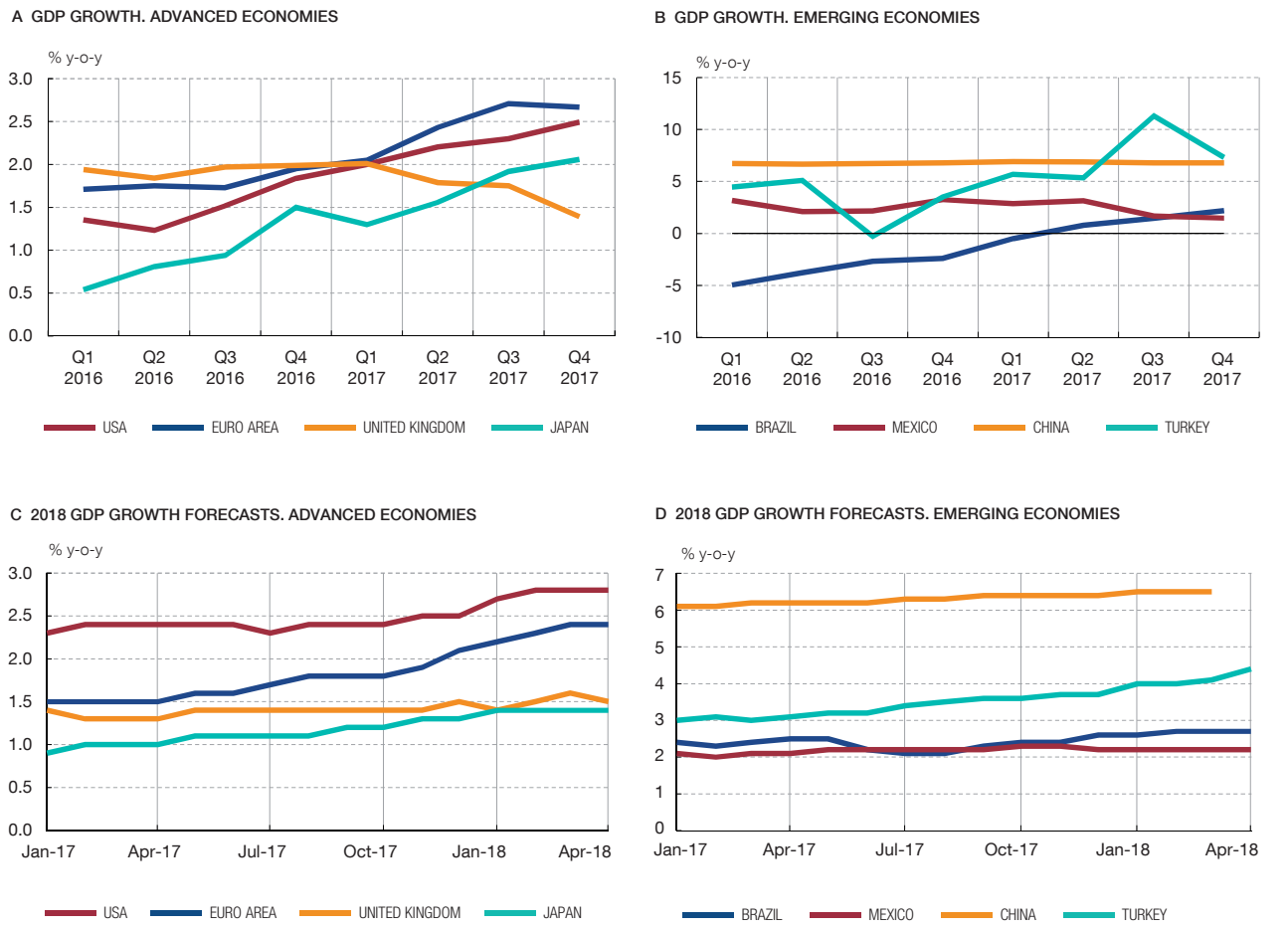
Global economic activity strengthened in the second-half of 2017 and the first few months of 2018, supported by the recovery in the advanced economies, with an upturn in investment spurring on world trade, in conjunction with sustained growth in China, India and Eastern Europe, and a recovery from recession in other emerging economies such as Brazil, Argentina and Russia. The forecasts for 2018 have been revised upwards to reflect the increased buoyancy and, in the case of the United States, the impact of the expansionary fiscal measures adopted in recent months (Chart 1.2). Inflation rates remained moderate, particularly core rates, and monetary policies continued to proceed towards normalisation, although at different speeds. Thus, the US Federal Reserve raised its policy interest rate by a further 25 bp in March to the 1.50-1.75% range, and the Bank of England raised its rate by the same amount in November, to 0.5%, while the Bank of Japan kept its expansionary measures in place. Financial conditions remained favourable, despite the sharp rise in volatility in February. Although the short-term risks for the global economy are tilted to the upside, the downside risks include those deriving from the change in the US economic policy slant, where the procyclical expansionary fiscal policy may contribute to more restrictive monetary policy, with potential negative repercussions for other economies and the financial markets, and the implementation of protectionist measures by the United States government, which may undermine economic activity and world trade.

... with risks deriving from the economic policy mix in the United States...

Fiscal policy has taken an expansionary stance in the United States in recent months, with the adoption of a tax reform in late December and an agreement in February to raise public expenditure in 2018 and 2019, at a time when the output gap is already positive (see Chart 1.3.A). In the short-term these measures will have a positive impact on economic activity, as, according to available estimates, they could raise GDP levels in the United States by 1-1.5 pp over the next two years, with positive spillovers for other areas along trade channels (see Chart 1.3.B). However, the final impact will depend on the monetary policy response and the reaction of financial markets. Thus, the fiscal stimulus may be expected to push inflation to above the current predictions (see Chart 1.3.C), which would lead to a stronger upturn in

GDP GROWTH AND FORECASTS

CHART 1.2



SOURCES: Datastream and Consensus.

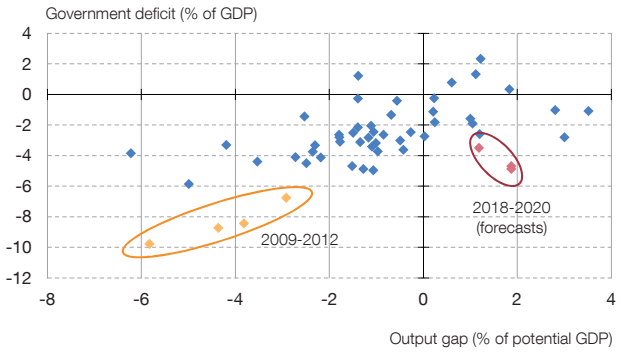
policy interest rates than currently forecast by the US Federal Reserve and the financial markets. This greater tightening could coincide with a correction to term premia on long-term interest rates, an appreciation of the dollar and more restrictive global financial conditions, which would reduce the positive impact on economic activity in the United States and elsewhere. Moreover, fiscal expansion in the United States will worsen the US economy's fiscal and external imbalances (see Chart 1.3.D), which would reinforce the dollar's downward trend seen since early 2017, hampering the conduct of monetary policy in some economies (such as the euro area or China). Lastly, possible limitations on trade flows resulting from protectionist measures in the United States (in January tariffs were imposed on imports of solar panels and washing machines, in March on steel and aluminium, with tariff increases announced for a range of Chinese imports, to which China has responded) are starting to make themselves felt in the earliest leading indicators, and may harm the medium-to-long-term global growth outlook if they develop into a global trade war.

... that may adversely affect some emerging economies...

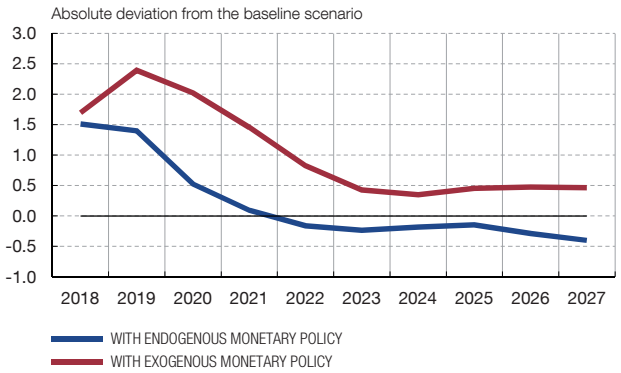
Economic activity in Mexico in the second half of 2017 differed considerably in each of the quarters. In the third quarter the economy contracted as a result of the earthquakes in September and the drop in petroleum production, whereas in the fourth quarter the economy grew, supported by private consumption and exports. The drop in inflation in 2018 was the result of end of the base effect caused by the withdrawal of certain energy subsidies in January 2017. The central bank raised its policy rate twice in response to unanticipated shocks in the second half of 2017. The upside inflation risks include, in particular, a depreciation of the peso in response to unfavourable progress of the NAFTA

THE FISCAL STIMULUS IN THE UNITED STATES CHART 1.3

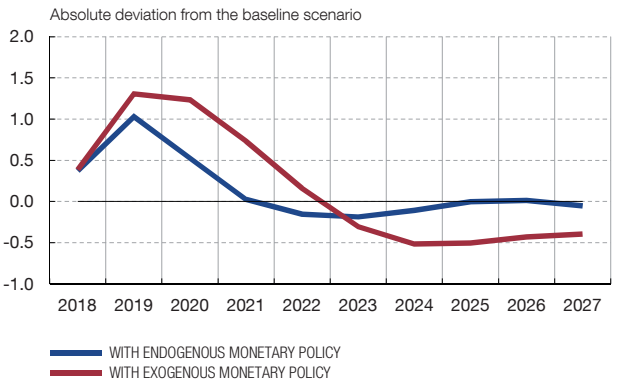
A RELATION BETWEEN OUTPUT GAP AND GOVERNMENT DEFICIT (1967-2020)



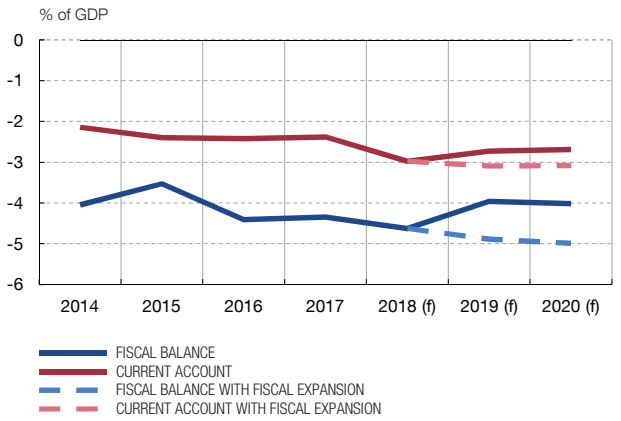
B US GDP GROWTH FORECAST (a)



C US INFLATION FORECAST (a)



D FISCAL BALANCE AND CURRENT ACCOUNT (a)



SOURCES: Datastream, Consensus Forecast, Congressional Budget Office, IMF (World Economic Outlook), World Bank, own calculations using the NiGEM model, Federal Reserve Bank of St.Louis.

a The baseline scenario used in the simulations assumes that there is no fiscal stimulus and that short-term interest rates continue along the path described by FOMC forecasts before US Administration's fiscal plans were unveiled. The "exogenous monetary policy" scenario includes the fiscal stimulus, but short and long-term interest rates remain unchanged. In the "endogenous monetary policy" scenario short-term interest rates react according to a Taylor rule and the term premium of long-term interest rates rises to its average over the last ten years.

negotiations prompted by adverse market movements due to US monetary policy or to uncertainty surrounding the presidential election in July.

Brazil remains on a gradual path to recovery from its deepest-ever recession. Nevertheless, investment rose in the second half of the year following a drop of 30% during the recession. By contrast, net exports and private consumption performed worse than expected, despite the sharp drop in inflation, which favoured a recovery in household disposable income. Falling inflation allowed the central bank to cut the policy rate further. As regards fiscal consolation, the government suspended the process of pension reform and it looks unlikely to pass before the forthcoming presidential election in October 2018. Indeed, in recent months two rating agencies have downgraded the sovereign rating of Brazil's external government debt.

China's growth in 2017 was 6.9% on the back of a larger contribution from next exports. Inflation remained moderate and the central bank raised policy interest rates. The recent rise in the renminbi led to the elimination of the "countercyclical factor" used to set the reference exchange rate. At several congresses the Chinese authorities have stressed the need to put the quality of economic growth ahead of its speed. New regulations have

also been adopted to reduce regulatory gaps, lessen the risks from "shadow banking" and create incentives for prudent debt management.

Economic developments in Turkey were very positive, thanks to the fiscal stimulus and credit measures introduced by the government at the end of 2016, improving sentiment and the favourable external environment. Nevertheless, the Turkish economy still has a number of significant imbalances and vulnerabilities, such as the size of the external deficit and high inflation rate, which exceeds 10%, and which heterodox monetary policy (using increases in the interest rate on last-resort loans) has been unable to reduce.

... depending, among other factors, on the course of the dollar

In a context of large issues of debt securities denominated in foreign currency by emerging countries, currently at an all-time high as a result of low interest rates and the depreciation of the dollar, it is worth considering the possible impact of changes in the dollar exchange rate on emerging market economies.

Policy interest rate rises in the United States that exceed those discounted by the markets could cause upward pressure on the dollar and a depreciation in emerging market economy currencies, which would represent a risk for agents that have borrowed in foreign currency (primarily in dollars). Nevertheless, a portion of income is in foreign currency and currency hedges may be in place, such that the unhedged positions may be less of a concern. Finally, it is essential to consider the reserves these economies' hold to deal with this type of shock, with their low levels relative to GDP in Turkey, and particularly in Argentina, standing out.

By contrast, the projected increase in the government deficit and current account deficit in the United States over the next few years has contributed to the recent depreciation of the dollar. If this weakening continues, as well as creating an incentive for emerging market economies to borrow in dollars, which could heighten the future risks when the trend reverses, the most exposed emerging market economy would be China. Specifically, a rising renminbi would lead to lower inflation, a worsening trade balance and slower growth. This would make it necessary for China to take on more debt to achieve its growth targets and encourage capital flows into the country from the exterior. The country's authorities would face serious difficulties conducting their economic policies, as they could not simultaneously keep the capital account open, pursue an independent monetary policy and keep the exchange rate linked to the dollar. China's economic policy responses could include interventions in foreign exchange markets, leading to an increase in international reserves, reduced controls on capital outflows and/or relaxation of monetary policy, which would run counter to the objective of reducing the economy's level of indebtedness. In this context, a potential trade war with the United States would worsen the difficulties, given China's dependence on exports.

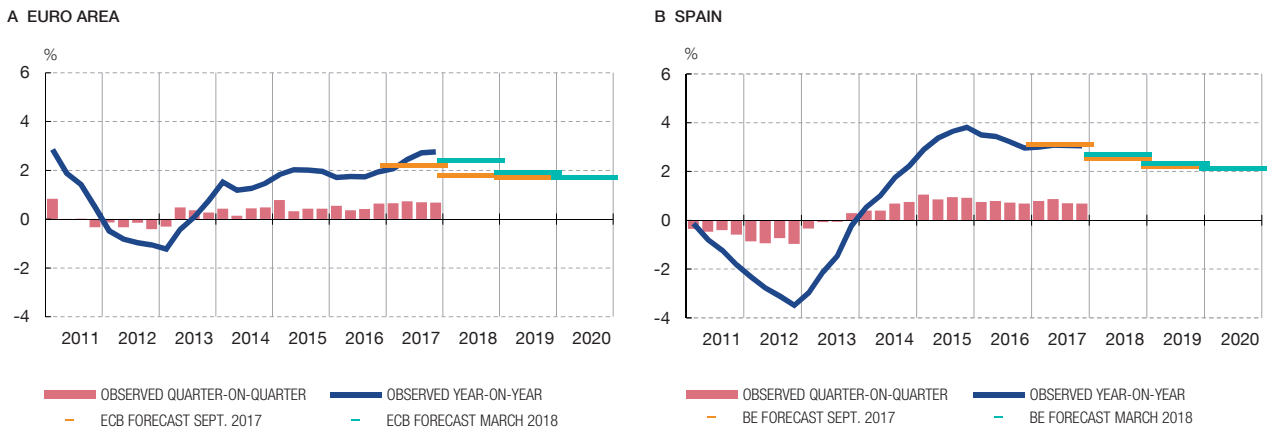
1.2.2 MACROECONOMIC ENVIRONMENT IN THE EURO AREA

A scenario of strong growth throughout the euro area continues to prevail…

Growth continued generally throughout the euro area and the rise of 2.5% in GDP in 2017 was above the September forecasts (see Chart 1.4.A). This favourable pattern was fuelled by the accommodative monetary policy of the European Central Bank (ECB) and the accompanying favourable financing conditions, by the improvements in the labour market and, increasingly, by stronger external trade. In line with this behaviour, in March the ECB revised upward its growth forecasts for 2018 and 2019 to 2.4% and 1.9%, respectively, while the first forecast for 2020 is 1.7%. The latest information points to a slowdown in the growth rate of economic activity in the opening months of the year influenced by temporary phenomena. However, it is still too soon to rule out the effect of other factors such as the past exchange rate appreciation or the stock market corrections which, along with the rise in interest rates, have prompted a certain tightening of the financial conditions index.

GDP GROWTH AND FORECASTS

CHART 1.4



SOURCES: INE, Eurostat and Banco de España.

…with inflation rates continuing to stand below the ECB target

Despite the more favourable performance of economic activity, a low inflation scenario persists against a background of wage moderation. On ECB estimates, the year-on-year HICP rates, after rising slightly from March, will stand at around 1.5% for the rest of the year. Excluding the less stable components (energy and unprocessed food), it seems the rate will stand at around 1.3% in the coming months. The changes in the external assumptions were reflected in a downward revision of 0.1 pp in the ECB's inflation forecasts for 2019 and 2020 to 1.4% and 1.7%, respectively. The inflation expectations embedded in assets traded on the markets have scarcely undergone changes, remaining on a path of slow convergence with the reference of 2%.

The Eurosystem will continue to pursue its expansionary monetary policy

At its meeting on 8 March 2018, the ECB Governing Council announced that it will continue to pursue its expansionary monetary policy stance, holding unchanged its official interest rates for a lengthy period which will amply exceed the time horizon of its net purchases of assets. These asset purchases are expected to continue at a level of €30 billion per month until the end of September 2018. Also, the principal of the securities purchased under this programme will be reinvested upon maturity for such time as is considered necessary, with a view to ensuring that the liquidity conditions and monetary policy stance continue to be appropriate.

This favourable macroeconomic scenario has somewhat reduced the level of risk for the euro area, although both financial and macroeconomic risks persist

The favourable economic developments and the good medium- and long-term prospects have reduced some of the risks to financial stability. However, there continue to exist risks which may endanger this outlook, particularly those relating to factors of a global nature, such as an upsurge in protectionist behaviour or a sharp rise in risk premia at international level, which could reawaken doubts over economic growth and consequently over the sustainability of the liabilities of certain sectors and agents which still have high levels of debt.

1.2.3 MACROFINANCIAL ENVIRONMENT IN SPAIN

The Spanish GDP continued to grow rapidly and will foreseeably continue to do so in the coming quarters, albeit with a slight slowdown

In the last few months the Spanish economy has remained on the expansionary path initiated four years ago, posting growth rates above those of the major euro area economies. On the available estimates, in the first quarter of 2018 GDP increased by 0.7% (3% year-on-year), equal to the rise posted in the fourth quarter of last year. The Banco de España's latest projections, released in March 2018, are for the expansionary pattern to continue in the coming years, albeit at a somewhat slower pace, with year-on-year rates for 2018 and 2019 exceeding by 0.2 pp and 0.1 pp those estimated in September, standing at 2.7% and 2.3%, respectively, while the projection for 2020 is 2.1% (see Chart 1.4.B). The upward

revisions are based on the correction of imbalances in the economy, the ongoing firmness of world activity and trade, the propitious financing conditions with a more expansionary fiscal policy stance, and on the decline in the level of uncertainty since December.

The behaviour of the inflation rate will continue to be highly influenced by oil prices

The year-on-year rate of change of the Spanish CPI fell from 1.8% in September 2017 to 1.3% in March 2018 (latest figure available), mainly as a result of energy price falls. The behaviour envisaged in the coming months will continue to be strongly marked by the energy component and it is expected that, from May 2018, the inflation rates of both the CPI and the CPI excluding unprocessed food and energy will start to trace an upward path, albeit with levels slightly below those estimated in the December projections.

Unemployment has continued to fall

In the opening months of 2018 the available labour market indicators have reflected similar employment dynamism to that of the previous quarter, with a quarter-on-quarter growth rate of 0.8% according to social security registrations, which allowed the pace of registered unemployment decline to hold at 1.9% in the first quarter. According to the Spanish Labour Force Survey (EPA), the unemployment rate was at 16.5% in December 2017. In addition, the acceleration in new hires was strongest in permanent contracts, so their weight in the total increased by nearly 1 pp to 10.9% compared with the same period of the previous year.

The trend of recovery in prices and quantities continued in the housing market

The ongoing economic improvement and the favourable financing conditions continued to drive demand in the housing market, and the number of house purchases continued to grow at above double-digit rates in the second half of 2017. The supply of new homes in the past 12-month period ending in December 2017 stood at 81,000, nearly 10% higher than the figure of last July, although still well below pre-crisis levels. Prices rose by 7.2% in the fourth quarter of the year compared with the same period of the previous year, above the 5.6% recorded six months earlier, and the resulting average level was still 26% below the highs of 2007, but 19% above the lows of 2014 (see Chart 1.5.A).

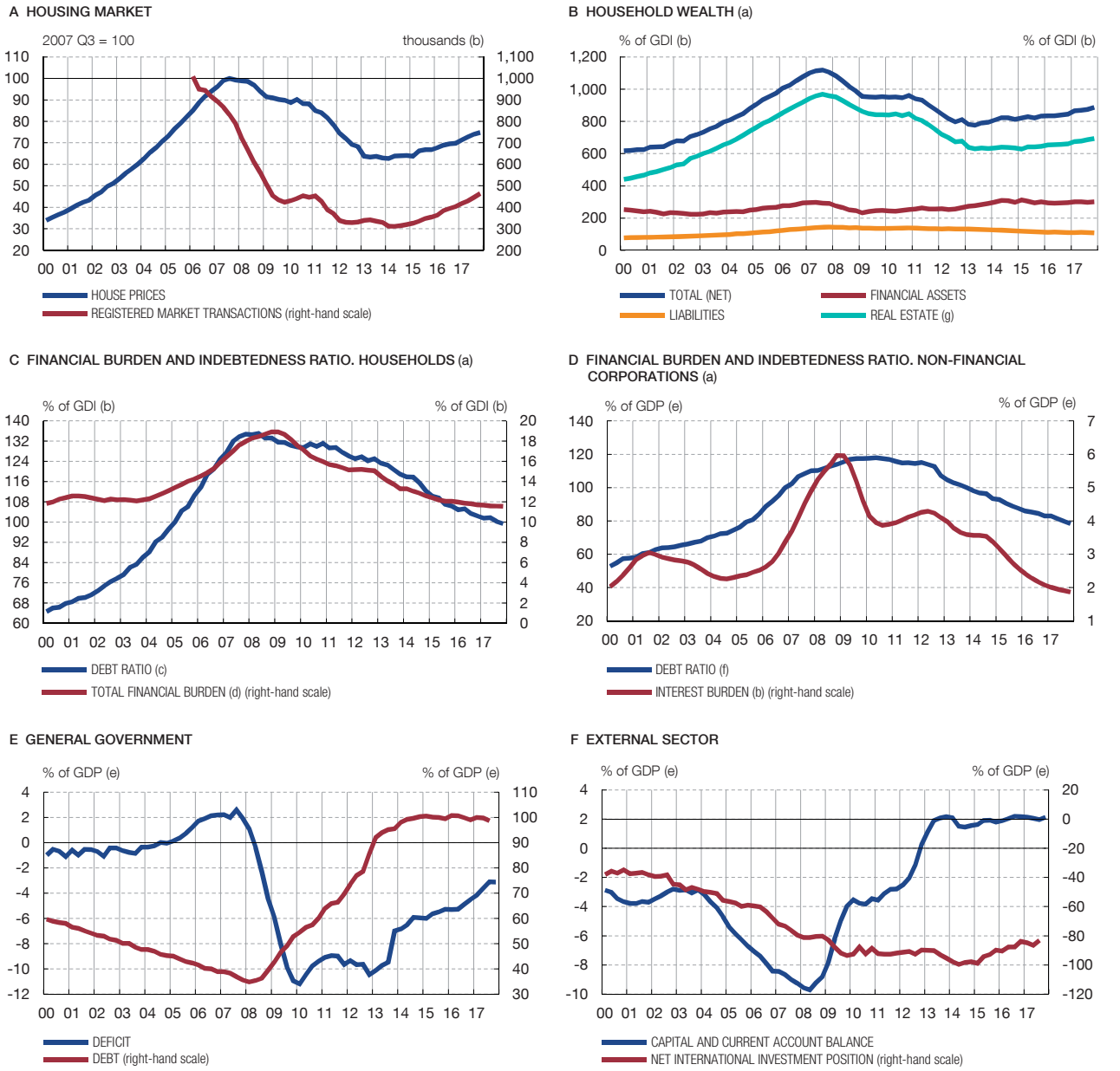
Households and non-financial corporations continue to improve their financial position…

This favourable macroeconomic environment helped to further improve the financial position of Spanish households and non-financial corporations, as well as the profitability of the latter. Against a background of continuing accommodative financing conditions, new lending to households and non-financial corporations continued to grow apace, which helped to moderate the contraction of the outstanding balance of loans to those sectors. This development, along with the ongoing increase in their income against a background of growing economic activity (see Charts 1.5.C and 1.5.D), prompted further falls in debt ratios and, to a lesser extent, in the financial burden of households and non-financial corporations. The net wealth of households continue to recover, driven largely by house price rises (see Chart 1.5.B). In addition, according to information from the Central Balance Sheet Data Office Quarterly Survey, 2017 brought a slight increase in the returns on assets and on equity of the firms in this sample, which edged up to 5.9% and 8.6%, respectively, 0.1 pp and 0.4 pp above the 2016 figures.

…and the financial position of general government and of the economy as a whole also improved, although their levels of debt continue to be high

The general government budget deficit measured as a percentage of GDP (see Chart 1.5.E) decreased further to 3.1% in December 2017, thus meeting the deficit target set for that year by the EU Council on 8 August 2016 within the framework of the "corrective arm" of the Stability and Growth Pact and further reducing the ratio of government debt to GDP to 98.3%. However that level continues to be very high, so the budgetary consolidation efforts will have to continue. This high public sector debt means that the Spanish economy continues to have a substantial net debtor position, although the maintenance of current and capital account surpluses of around 2% of GDP since mid-2013 has been reflected in

SPANISH ECONOMY. NON-FINANCIAL AND EXTERNAL SECTORS CHART 1.5



SOURCES: Association of Spanish Property and Commercial Registrars, INE and Banco de España.

a The last figure in the series is a forecast.
b Four-quarter cumulative data.
c Includes bank credit and off-balance-sheet securitised credit.
d Estimated interest payments plus repayments of principal. Four-quarter cumulative data.
e The GDP series is seasonally adjusted. Four-quarter cumulative data.
f Gross operating profit plus financial income.
g Based on projected developments of the housing stock, average size and price per square metre.

a decrease in the net debtor position to 80.8% of GDP in December 2017 (see Chart 1.5.F). The gross external debt measured as a proportion of GDP decreased to 164.8%, its lowest level in more than three years.

Growth of economic activity firmed, although the high levels of government...

Since the publication of the previous FSR in November 2017, the situation of the non-financial sectors of the Spanish economy has continued to improve, favoured by the growth of activity and employment. Further progress was also made in the reduction of the imbalances built up during the crisis. However, high levels of debt persist in general

... and external debt are sources of vulnerability

government and in the economy as a whole vis-à-vis the rest of the world, which constitute factors of fragility and make the Spanish economy vulnerable to negative future behaviour of activity and financing conditions.

Against the current background, the main macroeconomic risks for Spain continue to lie in the international environment. The risks include particularly those arising from a possible resurgence of protectionist policies perhaps triggering a trade war, from geopolitical tensions or from sharp corrections in world financial market prices which may trigger a tightening of financing conditions with potentially negative effects on countries with high levels of debt such as Spain. Finally, although the tensions over the political situation in Catalonia have declined since December, a possible increase in uncertainty with the related impact on capital market financing conditions and on the Spanish economy as a whole cannot be ruled out.

2.1 Banking risks

2.1.1 CREDIT RISK

International exposure

In 2017 activity in Spain decreased by 3.8% while consolidated financial assets abroad increased by 1%

In 2017 the consolidated assets of Spanish deposit institutions decreased by 1.7% year-on-year to €3,539 billion (see Annex 1). This decline in total assets resulted from the fall in activity in Spain, where financial assets dropped by 3.8% year-on-year in 2017. Contrastingly, the volume of financial assets abroad rose slightly (1%) with respect to the previous year (see Chart 2.1).

Activity abroad is concentrated mainly in Europe (particularly the United Kingdom), Latin America (Brazil and Mexico) and the United States...

The presence of Spanish banks abroad is concentrated mainly in Europe (57%, notably in the United Kingdom, which accounts for 29.2% of loans abroad), Latin America (25.9%, particularly Brazil and Mexico with 8.6% and 8% of loans abroad, respectively) and the United States, with around 14.3% of loans abroad. Chart 2.2.A shows the geographical distribution of loans between 2014 and 2017. The increase in the percentage of loans to Europe (excluding the United Kingdom), up from 19.8% in December 2014 to 27.6% in December 2017, is notable. Also significant is the lower percentage of loans in Latin America, down by 6.8 pp to 25.9% in December 2017 (compared with 32.7% in December 2014).

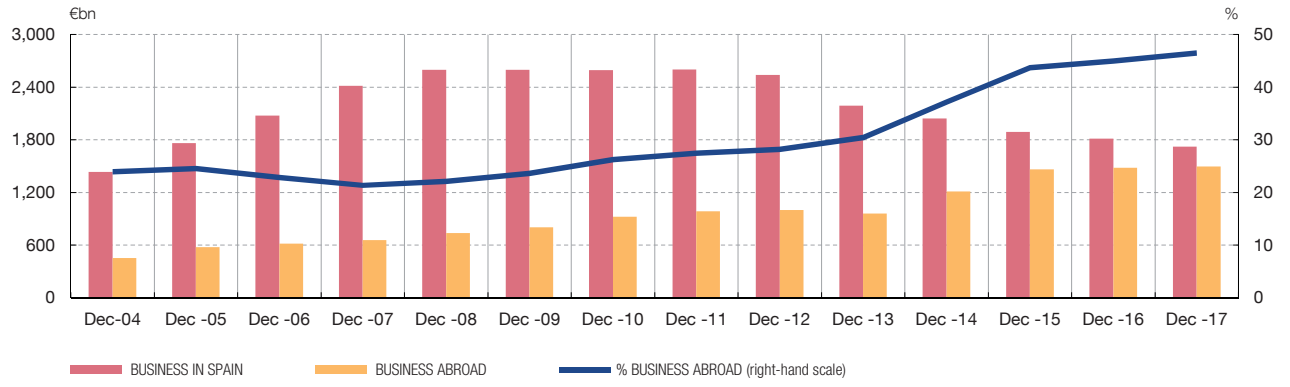
... and consists mainly of lending to households and non-financial corporations

Activity in the geographical areas with a higher presence of Spanish banks abroad consists mainly of lending to households and non-financial corporations. Notable in the United Kingdom is the predominance of household lending (which accounts for 67% of total loans), while in the rest of Europe, Latin America and the United States lending to households and non-financial corporations is more even. Moreover, in the United Kingdom household lending is mainly for the purpose of house purchase, unlike in the rest of Europe, Latin America and the United States where consumer credit is more important than mortgage lending (see Chart 2.2.B).

The behaviour of activity abroad was influenced in 2017 by the widespread...

Chart 2.3 shows the rate of change of loans in the main countries in which Spanish deposit institutions engage in activity abroad, along with the behaviour of the exchange rate of their respective currencies. In 2017 the euro appreciated generally against the other

INTERNATIONAL EXPOSURE. FINANCIAL ASSETS (a) **CHART 2.1**
Deposit institutions

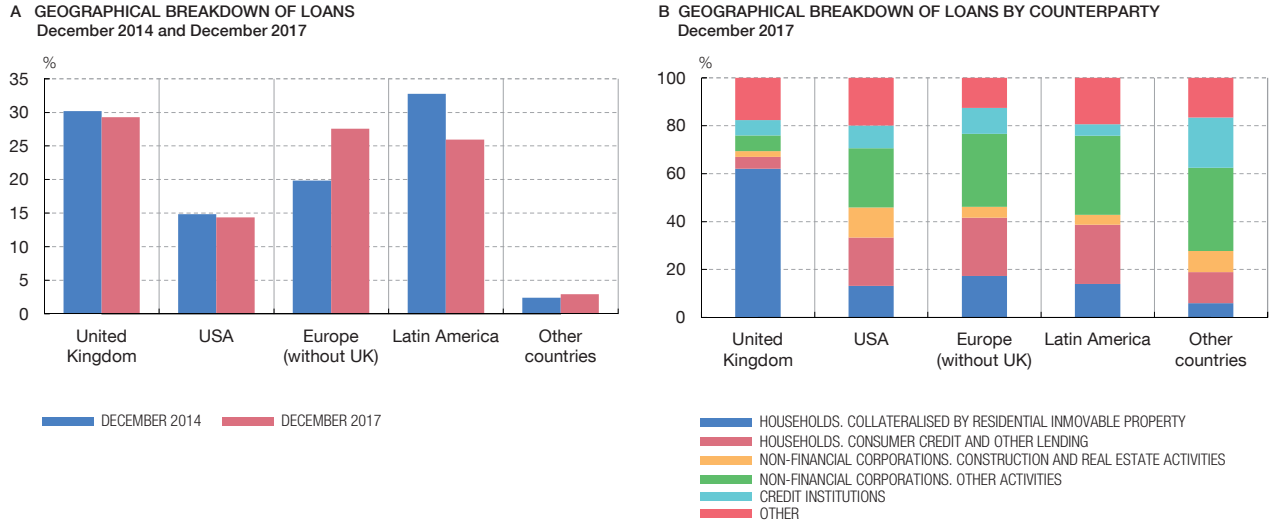


SOURCE: Banco de España.

a Total financial assets, which represent more than 90% of total assets, include derivatives, equity instruments, debt securities, and loans and advances, and the distribution between business in Spain and business abroad is based on this magnitude.

INTERNATIONAL EXPOSURE. LOANS. GEOGRAPHICAL BREAKDOWN
Deposit institutions

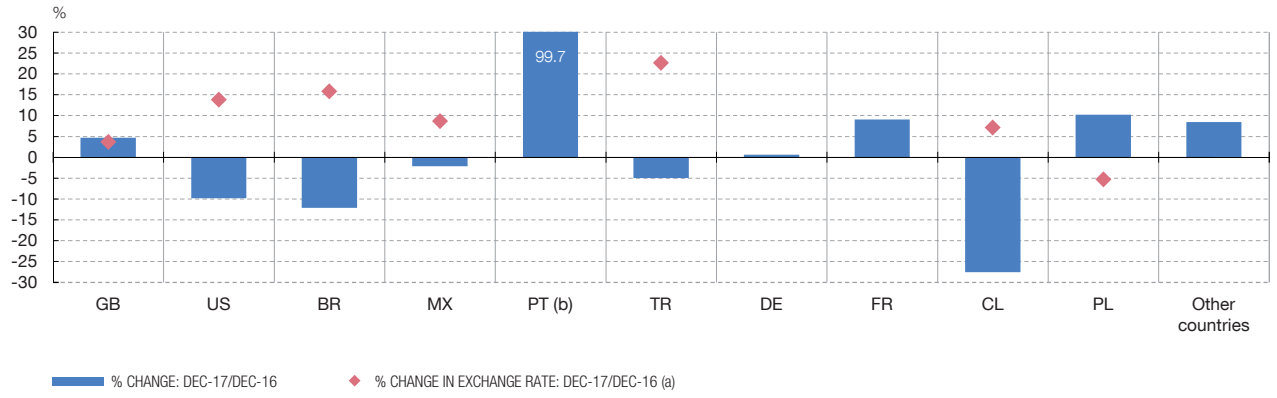
CHART 2.2



SOURCE: Banco de España.

INTERNATIONAL EXPOSURE. LOANS. YEAR-ON-YEAR RATES OF CHANGE
Deposit institutions

CHART 2.3



SOURCE: Banco de España.

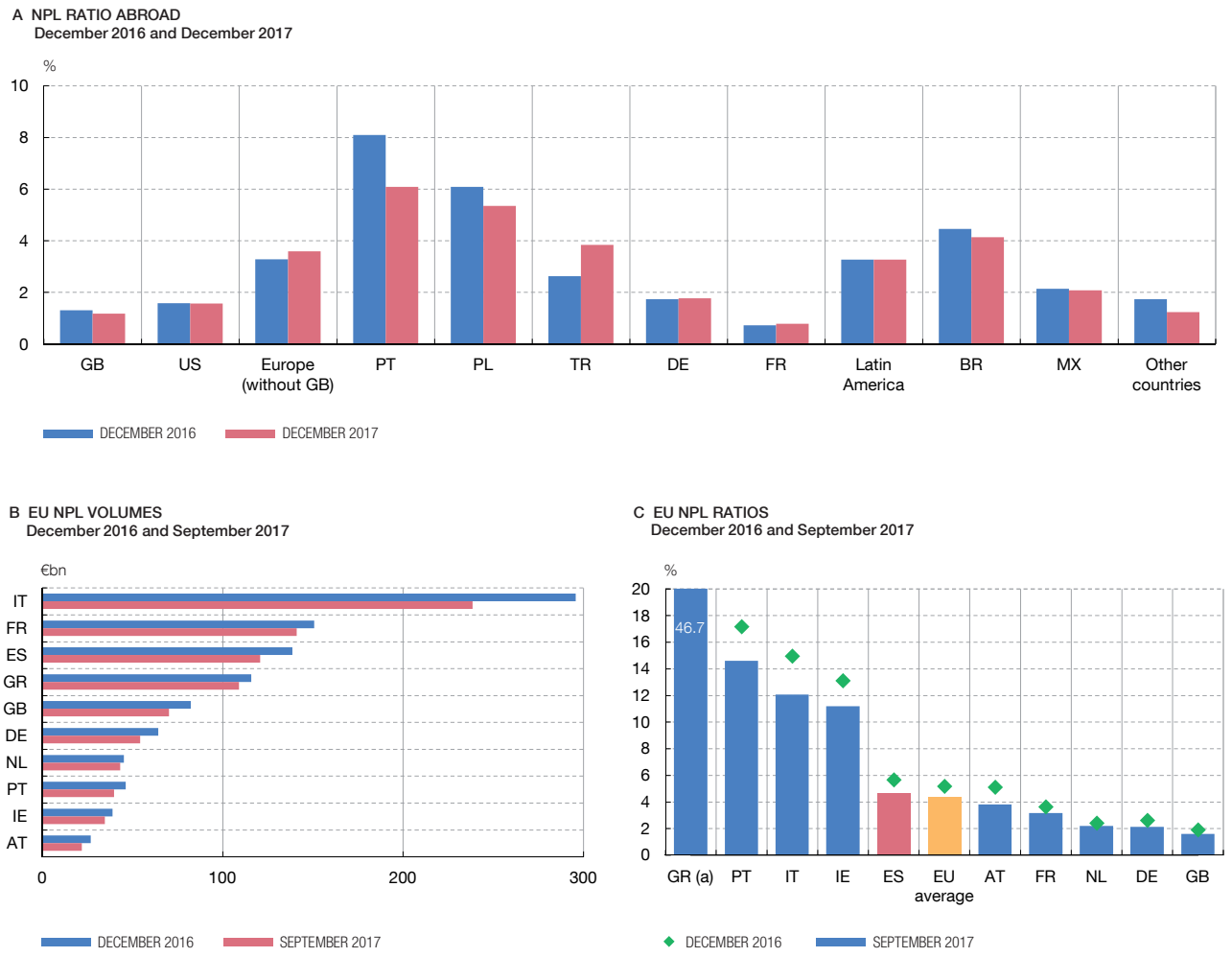
a A positive (negative) value of the growth rate denotes an appreciation (depreciation) of the euro against foreign currency.
b In Portugal, the year-on-year exchange rate was 99.7% due to the integration of a Portuguese bank into a Spanish institution.

...appreciation of the euro against the currencies of the countries in which Spanish deposit institutions operate, particularly Turkey, Brazil and the United States

currencies, particularly against the Turkish lira (22.6%), the Brazilian real (15.8%) and the US dollar (13.8%), and to a lesser extent against the pound sterling (3.6%). By contrast, the euro depreciated against the Polish zloty (–5.3%). Thus the appreciation of the euro against these currencies helps to explain the decrease in the volume of loans in Brazil (–12.1%) and the United States (–9.8%). In Turkey the volume of loans only fell by 5% despite the aforementioned sharp depreciation of the Turkish lira against the euro. The volume of loans in Chile decreased by 27.6% despite the fact that the euro only appreciated by 7.2% against the Chilean peso, although in this case the sharp decrease in the volume of loans was because of the sale by a Spanish bank of its subsidiary in Chile. Contrariwise, there was a sharp increase in the volume of loans in Portugal, which practically doubled with respect to the previous year, mainly due to the integration of a Portuguese bank into a Spanish one. In the United Kingdom the volume of loans grew by 4.6% despite the depreciation of the pound sterling.

INTERNATIONAL EXPOSURE. NPL RATIO
Deposit institutions. Consolidated data

CHART 2.4



SOURCES: Banco de España and European Central Bank.

a NPL ratio in Greece is 46.7% (46.3% in December 2016).

Despite the differing behaviours in 2017 of Spanish deposit institutions' exposures in the various countries in which they are present, as noted above the aggregate international exposure increased slightly throughout the year (1%), albeit against a background of appreciation of the euro against the main currencies.

Finally, it should be noted that the activity of Spanish deposit institutions abroad is conducted through financially autonomous subsidiaries. In this respect, activities abroad are conducted mainly in the local currency of the country in question, with some exceptions (specifically, in December 2017, the percentage of business denominated in Turkish lira represented 50% of the financial assets in Turkey).

Total non-performing assets

Consolidated total non-performing assets of Spanish deposit institutions decreased significantly in 2017, with a year-on-year rate of fall...

The volume of consolidated total non-performing assets of Spanish deposit institutions decreased significantly in 2017 by 21% year-on-year to stand at €116.1 billion (see Annex 1), this rate being higher than in 2016 when it hovered around 10%. Consequently, the ratio of banks' non-performing assets to their consolidated total assets decreased from 4.1% in December 2016 to 3.3% a year later.

...of 21% lowering the total non-performing assets ratio to 3.8%

The total non-performing assets ratio (including credit and debt securities) decreased to 3.8% in December 2017, down 99 bp with respect to the previous year (4.8%). The non-performing loans (NPL) ratio behaved similarly, decreasing from 5.6% in December 2016 to 4.4% in December 2017.

The NPL ratio generally exhibited a positive performance in the main countries where Spanish deposit institutions are present, with the notable exception of Turkey

In the case of business abroad, Chart 2.4.A generally shows a positive performance of the total NPL ratio in the main countries where Spanish deposit institutions have a presence. In the United Kingdom and the US, which account for more than 40% of loans abroad, and in Germany and France, the NPL ratio continued to hold below 2%. In Latin America, the ratio decreased slightly in Brazil and Mexico. By contrast, the NPL ratio increased in Turkey from 2.6% in December 2016 to 3.8% a year later. In Portugal and Poland the NPL ratio fell considerably, most notably in Portugal where it decreased by 2 pp to 6.1% in December 2017.

At European level, the NPL ratio continued its downward trend to stand at 4.4% in September 2017, slightly below the ratio of Spanish deposit institutions (4.7%)

The data published quarterly by the European Central Bank in its consolidated database allow the behaviour of the NPL volume and of the NPL ratio to be compared at European level. Chart 2.4.B shows the decrease in the volume of NPLs between December 2016 and September 2017 at the deposit institutions of the main European countries. Most notable among the countries analysed was Italy, which, despite having reduced substantially its volume of NPLs in the first three quarters of 2017, continued to head the ranking with €239 billion of NPLs (23.7% of the total NPLs of the EU countries as a whole). For its part, Spain is, after France, the European country with the third highest volume of NPLs (12% of the total). Chart 2.4.C shows that, despite the continuing high dispersion between countries (with ratios between 1.6% and 46.7% in the United Kingdom and Greece, respectively), there was a general decrease in the NPL ratio except in Greece (where it increased by 0.4 pp). Against this background of generally decreasing NPLs, Chart 2.4.C sets out the NPL ratio at European level, which in September 2017 stood at 4.4% (against 5.2% a year earlier), slightly lower than that of Spanish banks (4.7%, down from 5.7% in December 2016).

Domestic exposure

In business in Spain, credit to the private sector decreased by 1.9% in year-on-year terms, the lowest fall since the start of the economic recovery

The data drawn from individual financial statements allow the behaviour of risk exposure in Spain to be analysed. Credit to the resident private sector decreased by €23.2 billion in 2017, a year-on-year decline of 1.9% (see Chart 2.5). The decrease is appreciably lower than that in 2016 (€51.4 billion), and the year-on-year rate of fall is the lowest since the start of the economic recovery. Thus, despite the fact that outstanding credit continues to decline, the trend observed seems to show that the process of deleveraging is coming to an end in credit extension in Spain.

The fall in rates of change was widespread across institutional sectors

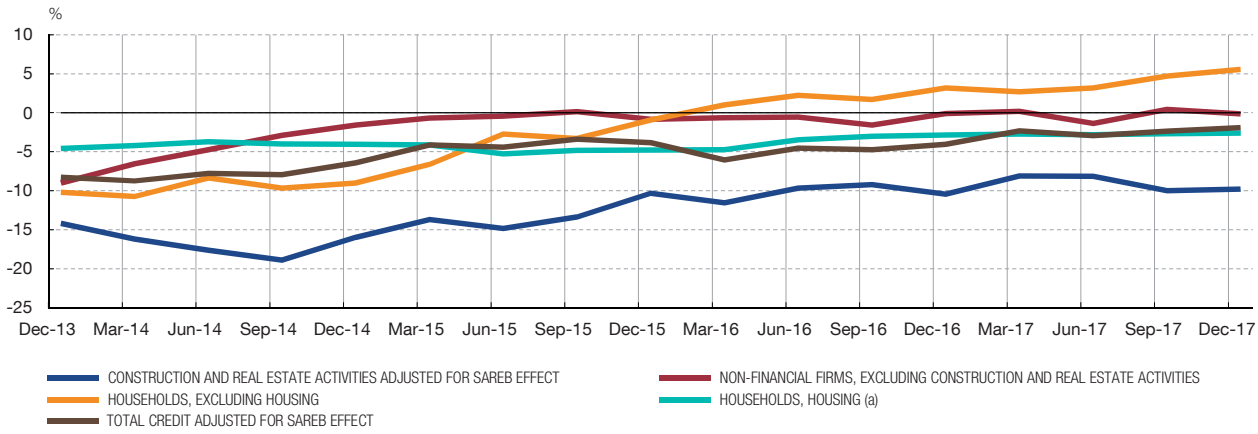
The less negative performance of rates of change of credit was apparent both in non-financial corporations and in households. In the case of firms, the year-on-year decrease was 3.1% in December 2017, compared with a year-on-year decrease of 3.5% twelve months earlier. Lending to households fell by 1.3% with respect to the previous year, which was also lower than in December 2016 (–2%).

In households, loans for house purchase fell slightly more slowly and consumer loans grew...

In lending to households, the behaviour of loans for house purchase differed greatly from that of other loans. While loans for house purchase decreased by 2.6% in December 2017 in year-on-year terms, which was a slightly lower fall than a year earlier, household lending for purposes other than house purchase grew by 5.6%, basically due to consumer credit, thereby continuing the positive rates of change seen since the beginning of 2016. For a more detailed analysis of loans to households for purposes other than house purchase, see Box 2.1.

YEAR-ON-YEAR RATE OF CHANGE IN CREDIT TO THE RESIDENT PRIVATE SECTOR BY SECTOR OF ACTIVITY
Business in Spain, ID

CHART 2.5



SOURCE: Banco de España.

a Includes securitisations.

…while in non-financial corporations, the decrease in construction and real estate loans continued

Sectoral analysis shows that loans to the construction and real estate sector decreased by 10% in December 2017 with respect to the figure a year earlier, the rate of change recovering slightly from that of –10.4% in 2016. Other credit to non-financial corporations barely underwent significant changes in the past year (decrease of 0.1%, similar to that a year earlier).

Analysis by firm size shows that credit to SMEs decreased by 2.1% year-on-year in December 2017, which was a more moderate decline than in 2016 (4.3%).[1] Meanwhile, lending to large firms moved in the opposite direction, decreasing by nearly 5% year-on-year compared with the more moderate decrease of 3.1% a year earlier. Part of this decrease can be explained by large firms' higher recourse to the market, linked also to developments in the Eurosystem monetary policy. A more detailed analysis of the behaviour of credit to SMEs can be found in Box 2.2.

The rate of change of credit improved across-the-board, as did that of consumer lending

The rate of change of credit to the resident private sector in 2017 improved across-the-board (see Chart 2.6.A), although the variability with respect to December 2016 increased. The variability of consumer credit behaviour across banks decreased (see Chart 2.6.B) and the distribution shifted to the right of the chart, evidencing a higher and more across-the-board growth of credit.

Chart 2.7.A shows the behaviour, over a long time period, of new mortgage loans for house purchase. This chart plots the volume of new credit (annual flow) and the volume of total mortgage credit (stock at December each year), both with base 100 in the first year for which information is available (2002), and the flow of mortgage credit as a percentage of the stock. The volume of new mortgage loans has progressively recovered in recent years, 2017 included. The percentage of the credit stock represented by new credit increased from a low of 2.8% in 2013 to 6.2% in December 2017. In addition to the performance of new credit, Box 2.3 analyses the time behaviour of the loan-to-value ratio.

1 It should be taken into account that in 2017 a firm cancelled a significant amount of loans to its associates, so these figures and those of Box 2.2 are affected by this event.

As indicated in Section 2.1.1, credit extended by Spanish deposit institutions to the resident private sector continued to decline in 2017, in step with the pattern observed in recent years. Since 2016, however, the segment of lending to households for purposes other than house purchase has grown, in contrast to the contractionary performance of other modes of credit. In this setting, this Box analyses in depth the performance and the NPL rates and coverage levels of the different kinds of consumer credit, and how Spanish banks compare with their European peers in this respect.

Loans to households for purposes other than house purchase (which include consumer credit, both for purchase of consumer durables and goods and services and for other purposes) amounted to more than €102 billion at December 2017, which is 16.7% of loans to households and 8.6% of total credit to the resident private sector.[1] As Chart A shows, this credit segment has grown uninterruptedly since 2016 Q1, with rising year-on-year rates of change that reached 5.6% in December 2017. Loans to households for purposes other than house purchase may be broken down into two components: consumer credit, which at end-2017 accounted for 57% of the total (€58 billion); and credit for other purposes[2] which made up the remaining 43%. The growth in loans to households for purposes other than house purchase stems from the sharp increase in consumer credit, which recorded year-on-year rates of change over 15% throughout 2017. By contrast, credit for other purposes has tended to shrink in recent years, with rates of decline between 10% and 5% in 2017.

In this segment, NPL rates have been changeable in recent years: they fell by between 10% and 20% year-on-year up to September 2016; they then rose, also significantly, up to September 2017,

1 The figures in this Box include, from July 2017, the business of a former specialised lending institution that became part of a deposit institution at that date.

2 Credit for other purposes includes credit for the purchase of land, garages or parking spaces and storerooms not linked to house purchases, purchase of securities, debt consolidation and other credit.

Chart A
YEAR-ON-YEAR RATE OF CHANGE OF LOANS TO HOUSEHOLDS FOR PURPOSES OTHER THAN HOUSING AND ITS COMPONENTS

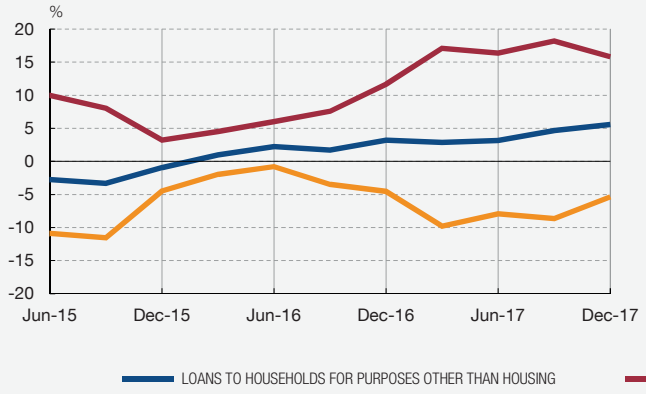


Chart B
YEAR-ON-YEAR RATE OF CHANGE OF NON-PERFORMING LOANS TO HOUSEHOLDS FOR PURPOSES OTHER THAN HOUSING AND ITS COMPONENTS

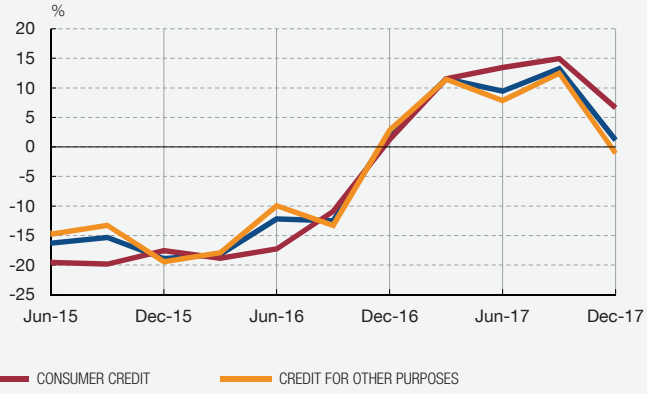


Chart C
NPL RATIO OF LOANS TO HOUSEHOLDS FOR PURPOSES OTHER THAN HOUSING AND ITS COMPONENTS

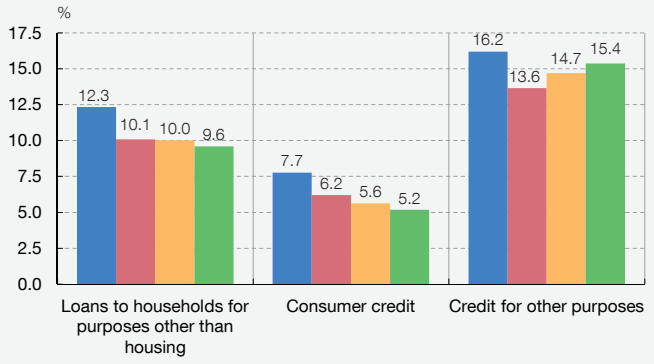
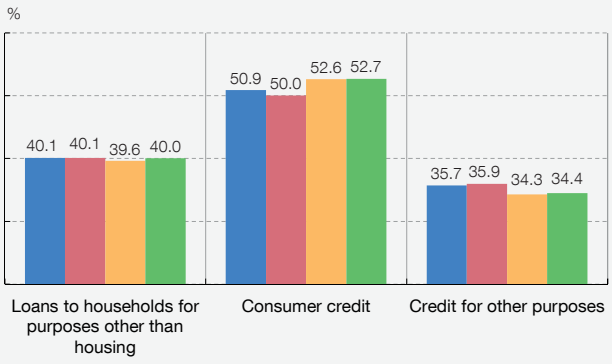


Chart D
COVERAGE RATIO OF NPLs TO HOUSEHOLDS FOR PURPOSES OTHER THAN HOUSING AND ITS COMPONENTS



SOURCE: Banco de España.

and then moderated to 1.1% in 2017 Q4. Moreover, in this case there is a more uniform pattern between the two components of loans to households for purposes other than house purchase (see Chart B).

As a result of this performance, NPL ratios of loans to households for purposes other than house purchase fell by almost 3 pp between December 2014 and December 2017, down to 9.6% (see Chart C). Again this pattern is mainly attributable to consumer credit, owing to the decline in its NPL ratio from 7.7% in December 2014 to 5.2% in December 2017. Although in the early years of the period this decline stemmed from the decrease in non-performing loans, in more recent quarters it was the result of the significant expansion of consumer credit. In turn, the NPL ratio of credit for other purposes fell in 2015 and has risen since then, up to 15.4% at end-2017.

The rate of coverage of non-performing loans was relatively steady throughout the period analysed (see Chart D), going from 40.1% in 2014 to 40% at end-2017 in terms of aggregate loans for purposes other than house purchase. The rate of coverage of consumer credit is notably higher – over 50% throughout the period analysed – compared with the coverage of credit for all other purposes (34.4% at end-2017).

Chart E permits a more detailed analysis of the performance of consumer credit through its two components: credit for purchase of consumer durables, which accounted for 53% of the total (€31 billion) at December 2017; and credit for purchase of other goods and services (47%). As the chart shows, these modes of credit have behaved quite differently since 2016. Thus, while credit for purchase of consumer durables (which includes private cars) has shown strong and increasing year-on-year rates of growth, reaching 26.8% in December 2017, credit for purchase of other goods has grown at a more moderate pace (5.3% at end-2017).

The NPL ratio for loans for purchase of consumer durables has decreased significantly and continuously (see Chart F), from 6.4%

3 These data, taken from the ECB's Balance Sheet Items database, reflect consumer credit extended by deposit institutions and by specialised lending institutions, which is why the rates of change for Spain are slightly different from those presented in Chart A.

Chart E
YEAR-ON-YEAR RATE OF CHANGE OF THE COMPONENTS OF CONSUMER CREDIT

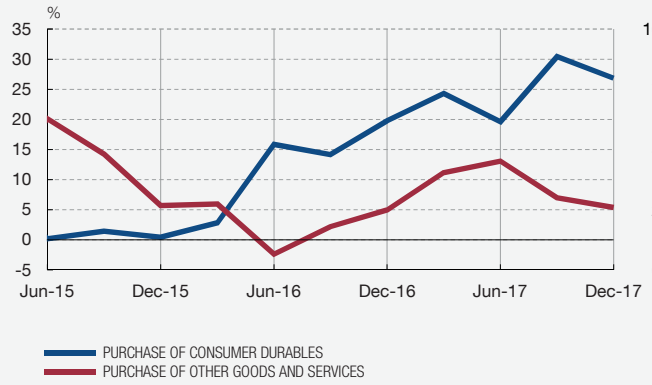


Chart F
NPL RATIO OF THE COMPONENTS OF CONSUMER CREDIT

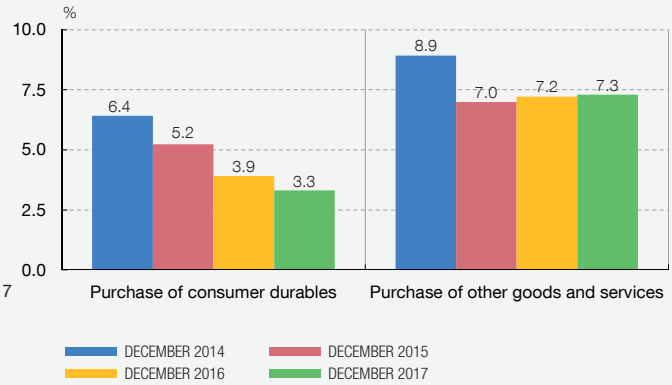


Chart G
NEW LOANS TO HOUSEHOLDS FOR PURPOSES OTHER THAN HOUSING

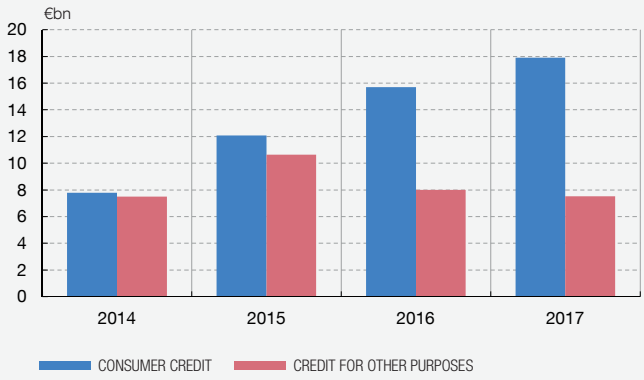
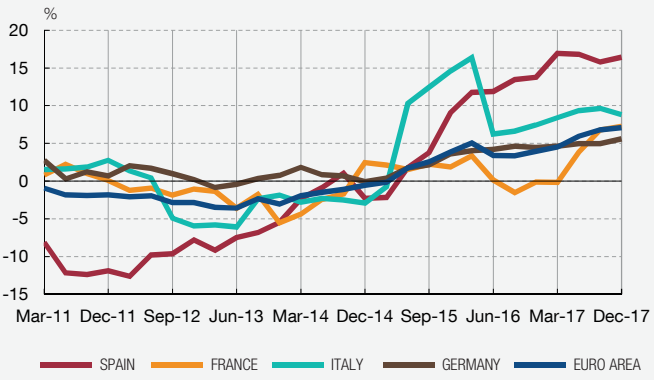


Chart H
YEAR-ON-YEAR RATE OF CHANGE OF CONSUMER CREDIT IN THE MAIN EURO AREA COUNTRIES



SOURCES: Banco de España and ECB.

in December 2014 to 3.3% in December 2017. By contrast, despite falling sharply in 2015, the NPL ratio for loans for purchase of other goods and services has risen slightly since then, standing at 7.3% at end-2017.

Chart G depicts new loans to households for purposes other than house purchase in recent years. The pattern is the same as for credit stock: credit growth is attributable to the higher growth in new consumer credit, while new credit for other purposes was more erratic, growing in 2015 and then declining in following years.

To conclude, Chart H compares the performance of consumer credit in Spain with that observed in other European countries. The chart, which draws on ECB data,[3] shows that since mid-2015 consumer credit growth rates in Spain have outstripped the euro area average. Moreover, since mid-2016, Spain posts the highest growth rates of the main euro area economies, with rates of change in excess of 10%, compared with growth of between 5% and 10% in the other economies. However, on a broader time frame, the chart also shows that during the economic crisis, consumer credit performance was considerably less buoyant in Spain, contracting by between 8% and 12% in the period 2011-12, compared with an average decline of 2% in the euro area as a whole.

Accordingly, the performance observed in Spain in recent years may be explained, at least in part, by the lower starting levels that are only now beginning to recover. Specifically, this performance would appear to show that, given the improvement in both economic activity and the employment rate, consumer decisions that had been put on hold and postponed as a consequence of the crisis are now being taken.

In any event, consumer credit is the business segment with the highest interest rates (see Chart 2.7.C), and in view of the low interest rate environment in which banks operate, they could be seeking opportunities to obtain higher returns at the cost of assuming higher risks. In consequence, how consumer credit and its NPL rates perform should be monitored closely in coming quarters.

The loan approval rate rose in the fourth quarter, although it is still far from the values seen in the pre-crisis years

The approval rate of the loans requested by non-financial corporations from the banks with which they are not currently working increased slightly in 2017 Q4 with respect to the previous quarter to stand at values around 33%. This slightly tempered the downward trend seen in previous quarters and restored the initial values of the time series at the start of 2017 (see Chart 2.7.B). This approval rate remains, however, far removed from those seen in the years before the crisis, when they were around 47%, albeit above the lowest level (25 %) of the historical time series which occurred between 2008 and 2013. This rise in acceptance rates took place at the same time as the number of loan applications increased by 2.1% in the last half of 2017 compared with the same period a year earlier.

Interest rates on new loans continued on the path seen in the previous year in lending to both firms and households

The interest rates on new loans (see Chart 2.7.C) continued on the path of recent years. In the case of firms, they continued their slight decline, particularly in loans below €1 million. In households, the course was more steady both in loans for house purchase and other (basically consumer) lending, as occurred also in 2016.

Notable in this setting of very low interest rates was the shift of banks' credit exposure to more profitable business segments such as consumer credit. It must be pointed out that this segment is also one of those with historically high NPLs.

Meanwhile, at end-2017, according to data from individual financial statements, which consider only the activity of banks operating in Spain, forborne loans to the private sector decreased by 23.6% year-on-year to €88.7 billion.[2]

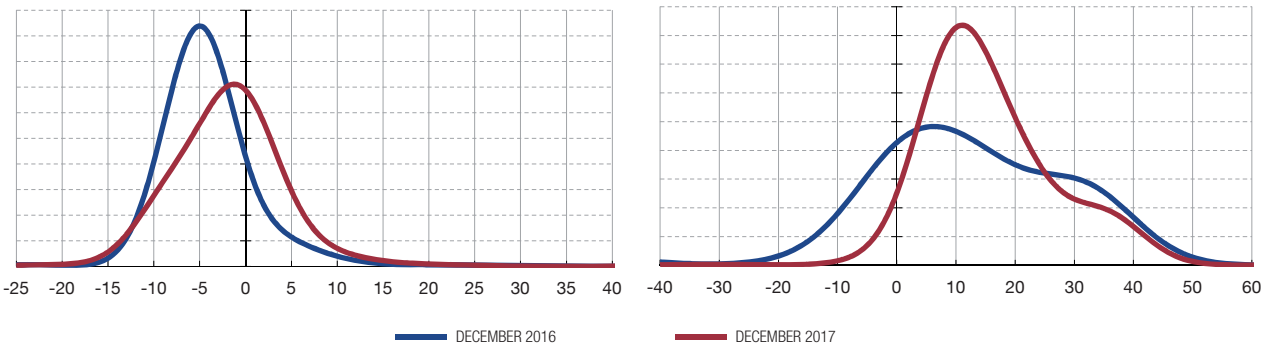
2 At consolidated level, the volume of forborne loans to the private sector decreased to €123 billion, down 19.9% from December 2016.

CREDIT TO THE RESIDENT PRIVATE SECTOR
Business in Spain, ID. Deposit institutions

CHART 2.6

A DISTRIBUTION OF THE YEAR-ON-YEAR RATE OF CHANGE IN TOTAL CREDIT (a)

B DISTRIBUTION OF THE YEAR-ON-YEAR RATE OF CHANGE IN CONSUMER CREDIT (a)



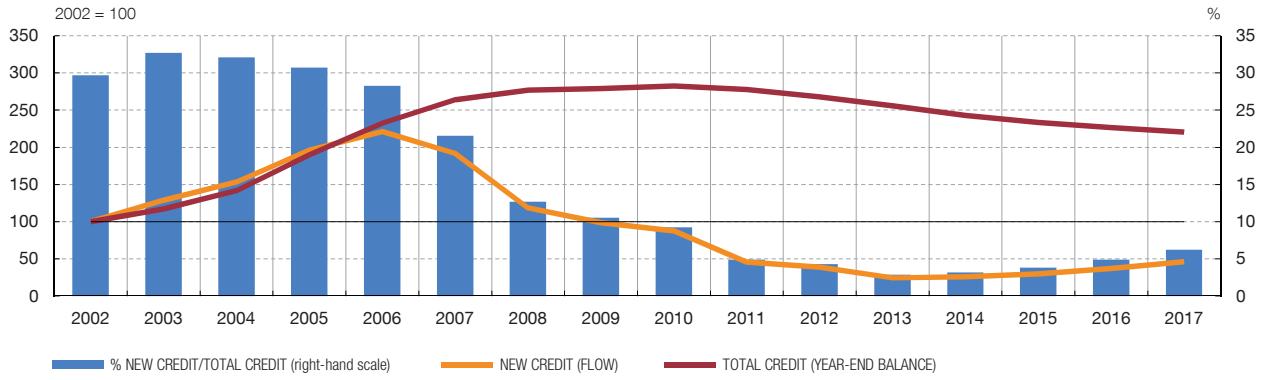
SOURCE: Banco de España.

a The graph shows the density function (or frequency distribution) of the year-on-year change in credit for Spanish deposit institutions, weighted by the credit corresponding to each institution. This density function is approximated through a kernel estimator which allows a non-parametric estimate of the density function, yielding a continuous and smoothed graphical representation of that function.

MORTGAGE CREDIT AND CREDIT CONDITIONS
Business in Spain, ID

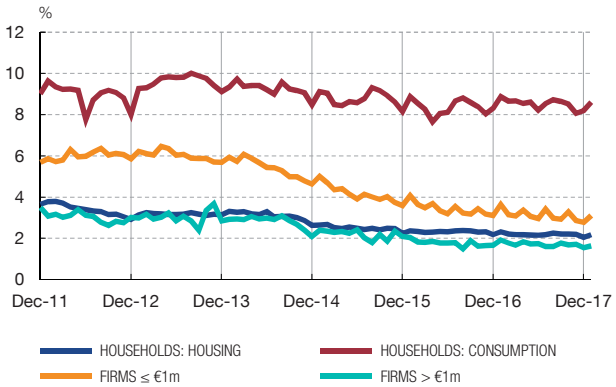
CHART 2.7

A NEW MORTGAGE CREDIT FOR HOUSE PURCHASE (a)



B ACCEPTANCE RATE OF LOAN APPLICATIONS (b)

C NEW LOAN INTEREST RATES (APR) (c)



SOURCE: Banco de España.

a The volume of new transactions in 2014 relates to the twelve-month period from April 2014 to March 2015, since the 2014 data are not available from January. Total credit in 2014 is taken as the March 2015 figure to make it consistent with the new transactions figure.

b Non-financial corporations which apply for a loan from an institution with which they are not working or with which they have not maintained a credit relationship in the last three months. The acceptance rate is defined as the ratio of the transactions accepted by deposit institutions to the total applications received in a particular month.

c The new loans of a period are defined as all the first-time loans arranged with customers and all the contracts existing in earlier periods whose amount, interest rate, maturity or other significant financial conditions in relation to interest rates have been renegotiated with customers in the month in question.

As discussed in the main text of the FSR, growth in lending to non-financial corporations remained negative in 2017. Nevertheless, the two components of business lending, namely large firms and SMEs,[2] performed somewhat differently last year. Lending to large corporations dropped by almost 5%, representing an acceleration in the rate of decline from that observed in 2016 (-3.1%),[3] whereas lending to SMEs registered a rate of decline of 2.1%, having recovered by over 2 pp from the previous year's rate of change (dropping 4.3% in 2016, see Chart A). As a consequence of these different paths, lending to SMEs increased as a share of total lending to non-financial corporations, reaching almost 51% in December 2017.

A slight recomposition of lending to SMEs has taken place in recent years, with a decrease in the share of lending to medium-sized enterprises and an increase in the share of lending to microenterprises (see Chart B). Thus, in December 2017, lending to microenterprises accounted for over 36% of lending to SMEs after having grown by 0.2% in 2017; lending to medium-sized enterprises represented 33%, after dropping by 6.2%, and the remaining 31% was accounted for by small enterprises, with a decrease of 0.2% last year.

In recent years there has also been a change in the distribution of lending to SMEs in terms of the sector of activity financed. As Chart C shows, whereas in March 2014 over 45% of lending to SMEs went to the construction and real estate development sector, in December 2017 less than a third did.

The NPL ratio for SMEs remains higher than that for large corporations, but both have dropped significantly in recent years.

1 See note 1 in chapter 2 of the FSR.
2 A company is classed as an SME if it matches the definition given in Commission Recommendation 2003/361/EC of 6 May 2003 (DOCE L 124 of 20/5/03). On this definition, an SME is a company with fewer than 250 employees and an annual turnover of up to €50 million or whose balance sheet total does not exceed €43 million. Additionally, within the SME category, a small enterprise is defined as an enterprise that employs fewer than 50 people and has an annual turnover or balance sheet total of up to €10 million. Also within the SME category, a microenterprise is defined as an enterprise that employs fewer than 10 people and has an annual turnover or balance sheet total of up to €2 million.
3 Part of this decrease may be due to the greater recourse to the market by large corporations, which is also linked to developments in Eurosystem monetary policy.

Chart A
LENDING TO SMEs. YEAR-ON-YEAR RATE OF CHANGE AND SHARE OF TOTAL LENDING TO NON-FINANCIAL CORPORATIONS

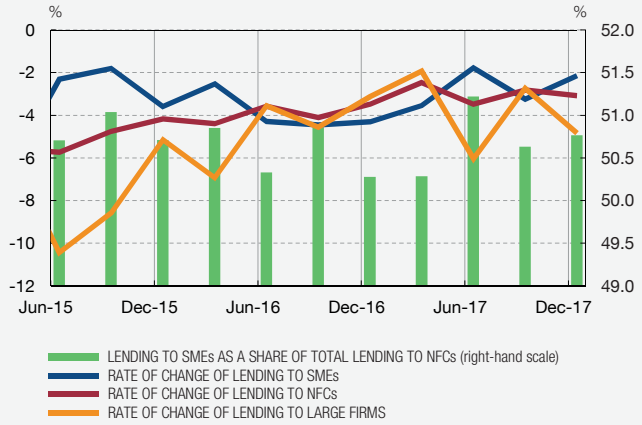


Chart B
BREAKDOWN OF LENDING TO SMEs

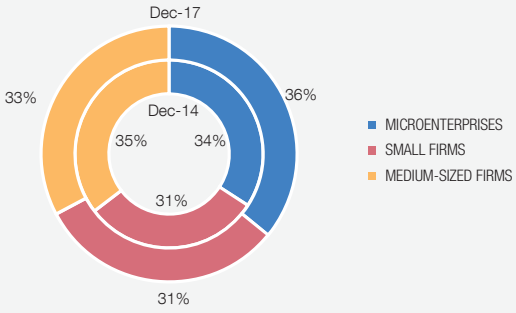


Chart C
LENDING TO SMEs, BY SECTOR OF ACTIVITY

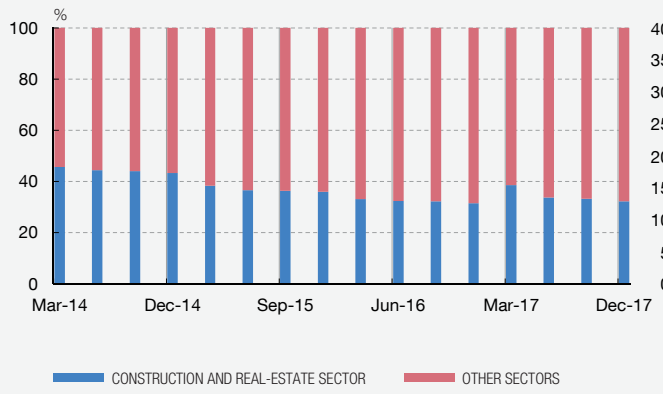
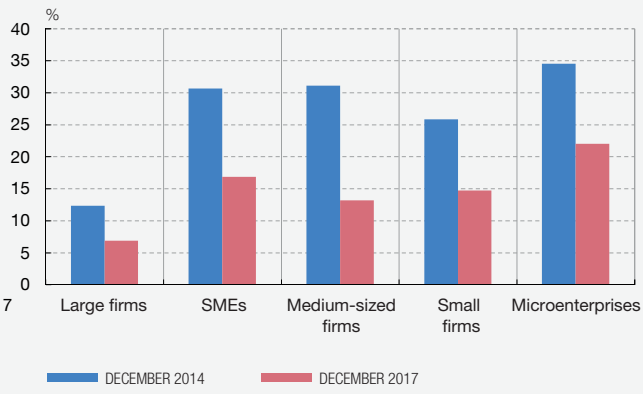


Chart D
NPL RATIO OF NON-FINANCIAL CORPORATIONS



SOURCE: Banco de España.

Specifically, since 2014 the NPL ratio for SMEs as a whole has decreased from 30.7% to 16.8%, a drop of 13.9 pp. In the case of large corporations, it has gone from 12.3% to 6.8%. Within lending to SMEs, credit quality can also be seen to improve with the size of the SME. Thus, in December 2017 the NPL ratio on lending to microenterprises was close to 22%, in the case of small enterprises it was 14.7%, and in that of medium-sized enterprises it was 13.2% (see Chart D). As already noted, these NPL ratios have been declining in recent years in all size brackets.

New lending to non-financial corporations rose steadily over the course of 2017,[4] and within it new lending to SMEs remained relatively stable, with slight growth in the second half of the year (see Chart E). Over the course of 2017 new lending to SMEs reached €113 billion (compared to €109 billion in new lending to large corporations), distributed as follows: almost €44 billion to medium-sized enterprises, a very similar amount (€43 billion) to small enterprises and the remaining €25 billion to microenterprises (see Chart F).

As in the case of consumer credit, although at significantly lower rates, Spanish banks are increasing their relative share of lending to SMEs, a segment which has higher interest rates than lending to large corporations (see Chart 2.7.C), although subject to higher credit risk, which partly manifests itself in a higher NPL rate.

4 New lending is defined as loans arranged in new business for the banking system, excluding roll-overs, refinancings or subrogations. It also excludes increases in drawn-down principal under revolving credit, trade credit, other loans with limits, credit cards and overdrafts on loans arranged in previous months.

Chart E
NEW LOANS GRANTED TO NON-FINANCIAL CORPORATIONS. AMOUNT GRANTED IN LAST 12 MONTHS (a)

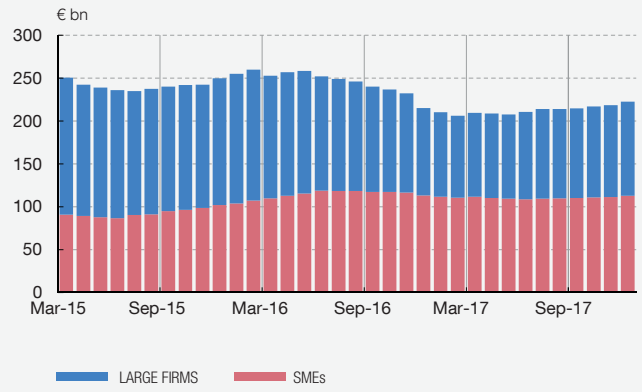
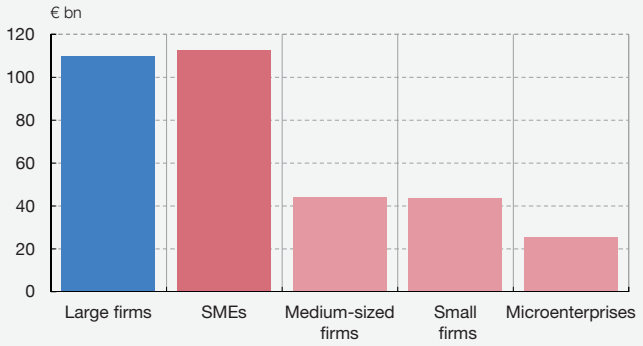


Chart F
NEW LOANS TO NON-FINANCIAL CORPORATIONS IN 2017



SOURCE: Banco de España.

a Each bar represents the volume of new loans granted by the financial system during the last 12 months.

Troubled assets in Spain

NPLs in business in Spain decreased somewhat more than in the previous year, at a year-on-year rate of 16.2%, with a cumulative decline of 50.3% since December 2013

As regards the explicit manifestation of credit risk, in 2017 NPLs continued the decrease seen in the last few years, largely due to the positive performance of the Spanish economy in the past year. This decrease, at €18.2 billion in absolute terms in the past year, was slightly higher than that in 2016 (€17.6 billion). As a result, NPLs at December 2017 were 16.2% lower than at December 2016 in business in Spain. Since their peak in December 2013, NPLs have now decreased by €95.1 billion and their current amount is 50.3% lower than at December 2013 and below the levels seen in 2010 (see Chart 2.8.A).

The past year saw a decrease in the NPLs of households...

By institutional sector, NPLs decreased in lending to both non-financial corporations and households, albeit very differently. Whereas in non-financial corporations the decrease was very significant (–20.7% year-on-year at December 2017) and higher than

The behaviour of the loan-to-value ratio (LTV), which is the ratio of loan principal to the value of the associated collateral, is one of the indicators most commonly used to monitor mortgage lending standards. The Banco de España analyses this and other indicators as part of its monitoring of the risks in the Spanish mortgage market, in line with the Recommendation of the European Systemic Risk Board (ESRB) on relevant information on the real-estate sector for macroprudential purposes issued in 2016.[1]

This Box describes trends in the LTV ratio for residential mortgages granted to natural persons and the prices of the property used as collateral or guarantee for these loans. The analysis takes the house price index published by the National Statistics Institute (INE) as its reference. Data on mortgage loans and housing appraisal values have been drawn from two different sources: the Association of Registrars,[2] whose database provides granular data on all new mortgages entered on property registers, enabling the LTV ratio to be calculated at the time of loan origination; and the accounting information regularly sent by financial institutions to the Banco de España. The latter source was used to calculate the LTV of the system's total mortgage lending (this information covers not just new loans, but the total outstanding mortgage balance).

Chart A shows how average LTVs changed between 2004 and 2017. Based on the available information, two series can be distinguished: (i) new mortgage loans; and (ii) the whole mortgage loan portfolio.[3] The chart also includes the year-on-year change in house prices.

The data show a positive correlation (of 77%) between the average LTVs of new loans and the change in house prices, i.e. average LTVs move in the same direction as house prices. This characteristic may reflect a degree of procyclicallity of LTVs, in that during expansionary periods the expectation that the value of property used as collateral will rise increases the willingness to grant larger loans relative to the appraisal value, while in contractionary periods credit standards become stricter.

The main exception to this pattern was how these variables behaved in the period from 2010 to 2013, when average LTVs on new lending remained stable at around 67%, whereas house prices underwent a severe correction (with successive year-on-year drops of over 5%). This pattern could reflect changes in the structure of credit demand, whereby more credit-worthy individuals or households accounted for a larger share. This would make the appraisal value of the property less decisive when granting new lending (in that if new loans are safer, it is less

1 Recommendation ESRB/2016/14 of 31 October 2016 on closing real estate data gaps. The Recommendation aims to contribute to the availability and comparability of data on residential and commercial real estate in the EU.

2 The Association of Registrars' database contains information on real-estate transactions and mortgage originations registered monthly by Spanish real-estate registries since 2004. It includes both residential and commercial properties together with the property appraisal value and mortgage loan principal. It contains relevant information on transaction values, physical characteristics of properties, and the conditions established in the mortgages registered.

3 For new loans, the system's average LTV is an average weighted by the value of each loan. For the LTV of the outstanding balance of mortgages, as information is at the level of credit sub-portfolios by LTV segment rather than loan by loan, it is assumed that the midpoint of each segment represents the LTV of the corresponding sub-portfolio, aggregating the information for all the segments to obtain the LTV for all mortgages as a whole.

Chart A
LOAN-TO-VALUE OF MORTGAGES AND HOUSE PRICES (a)

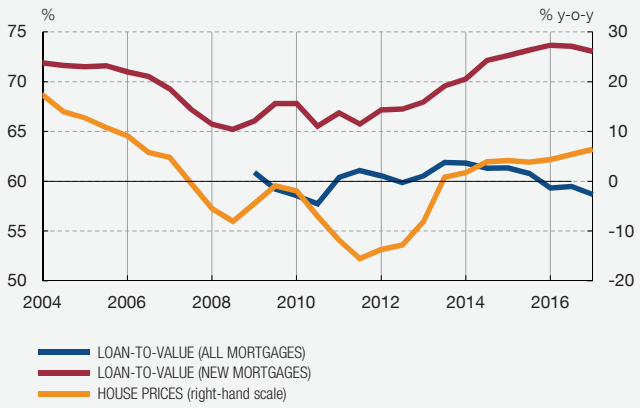
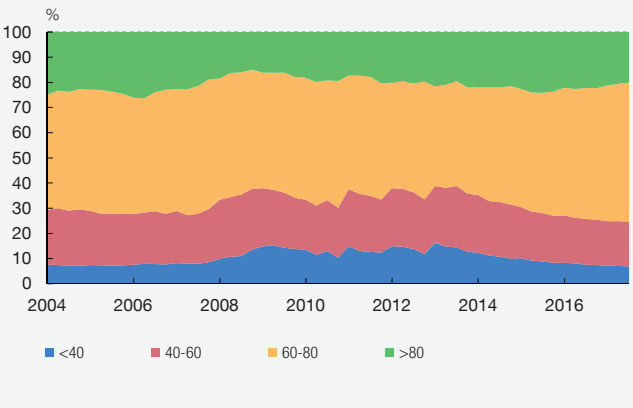


Chart B
DISTRIBUTION OF LOAN-TO-VALUE RATIO FOR NEW MORTGAGES (b)



SOURCES: Banco de España, Association of Registrars and INE.

a For the total mortgage portfolio, only residential mortgages to individuals are included, based on the information that institutions periodically submit to Banco de España. New mortgages include all housing mortgages to individuals with houses as collateral according to the information provided by the Association of Spanish Property and Commercial Registrars.
b Mortgages to individuals secured with residential property as collateral.

likely that the mortgage collateral will be foreclosed), which could explain the disconnection observed between average LTVs and house prices in the period mentioned. It could also reflect more cautious policies by lenders, in a context of high and rising levels of default, as well as heightened economic and financial uncertainty.

Since 2014, average LTVs of new loans have risen to levels exceeding those observed in the period 2004-2006. However, over the period 2016-2017 a slight slowdown or even contraction of average LTVs to around 73% was observed. Underlying this pattern were changes in the composition of the new-lending portfolio, as discussed below.

Finally, average LTVs across the whole mortgage loan portfolio (amounts outstanding) are significantly lower than the average LTVs of new loans. This is because lenders take the outstanding amount as the numerator when determining the value of average LTVs across the whole mortgage loan portfolio in each period. Moreover, no relationship is apparent between the average LTVs of the total portfolio and house prices. The LTV level of the total loan portfolio may react to a wide range of factors that are not necessarily related to the value of the mortgage's collateral, which is why the correlation between these two series is close to zero. For example, in periods when the flow of new loans is sluggish, average LTVs tend to decrease, as the improvement in LTVs resulting from the repayment of existing loans becomes more significant. Meanwhile, increases in LTV may be caused by the rising significance of the flow of new credit or the impact of possible remortgages where the appraisal value of the property is updated with a lower value (leading to a higher LTV), something which could happen in the context of falling house prices. In short, LTVs for new lending seem to be a more representative measure of the credit standards lenders are applying at any given time.

To analyse changes in LTVs for new loans they have been grouped into four categories (the distribution is shown in Chart B): (i) loans with LTVs of less than 40%; (ii) loans with LTVs between 40% and 60%; (iii) loans with LTVs between 60% and 80%; and (iv) loans with LTVs of over 80%. The way in which the segments have varied over time allows three different periods to be distinguished. Over the period 2004-2007, the relative weight of each of the segments remained fairly constant. Loans with low LTVs (i.e. less than 60%) represented around 30% of all new loans, whereas loans with LTVs of over 80% accounted for slightly more than 20% of new loans.

A tightening of credit conditions over the period 2008-2013 is discernible, translating into a change in the composition of the portfolio of new mortgages. Specifically, the segment with low LTVs rose strongly to account for almost 40% of total new mortgage lending when the crisis was at its peak. Meanwhile, the opposite trend can be seen in the high-LTV segment, with a drop in relative significance (the share of these loans dropping to around 15%).

Finally, since 2014 the segment with LTVs between 60% and 80% can be seen to have increased its share relative to the top and bottom segments: (i) LTVs of less than 60% fell gradually; (ii) LTVs over 80% remained stable and even declined somewhat at the end of the period. In this context, the increase in average LTVs shown in Chart A does not necessary mean lenders are incurring more risk, but could be due to the consolidation of the mortgage segment with LTVs between 60% and 80%, which currently accounts for slightly more than half of new lending, to the detriment of mortgages with very high or very low LTVs.

This assessment is consistent with changes in residential mortgages, where the stock continues to decrease and the flow of new credit, although growing, remains at relative levels far from those reached in the previous expansionary phase (see Chart 2.7.A)

...and, to a larger extent, of non-financial corporations

that a year earlier (–17.3%), in households this decrease was much more moderate (year-on-year decline of 2.8% at December 2017) and slightly lower than that a year earlier (–3%).

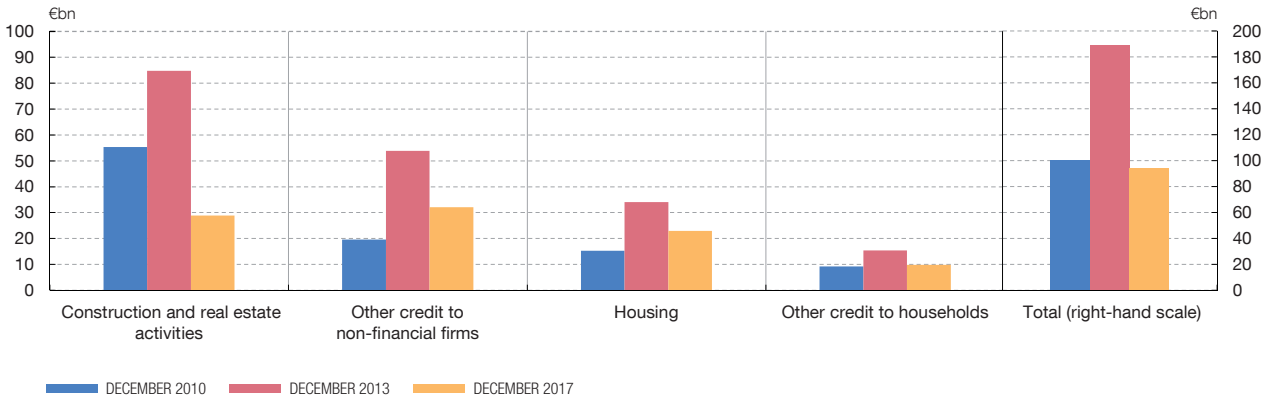
In non-financial corporations, the decrease was much more significant for the construction and real estate sector, while in households they decreased in house purchase loans, albeit less so than in the previous year, and increased by 1.1% in household lending other than for house purchases

Analysis by activity (see Chart 2.8.B) shows that NPLs decreased considerably in the construction and real estate sector (–30.6% year-on-year at December 2017, compared with a decrease of 16.2% in 2016) and more moderately in the other non-financial sectors taken as a whole (–9% at December 2017 compared with –18.6% at December 2016). In lending to households, non-performing house purchase loans decreased by 4.4% year-on-year at December 2017, somewhat less than the decline recorded a year earlier (–5%). Regarding NPLs to households for other purposes, basically but not only consumer credit, these increased by 1.1% with respect to the volume a year earlier, so their rate of change decreased with respect to that of 2016 (2.4%), which is notable considering that this was the sector with the highest growth in the past year.

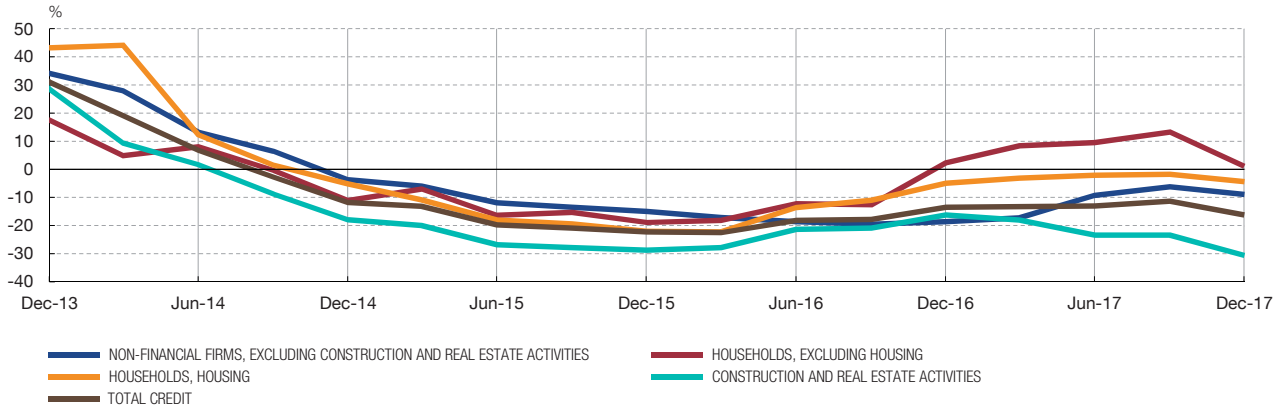
NPLs. RESIDENT PRIVATE SECTOR
Business in Spain, ID. Deposit institutions

CHART 2.8

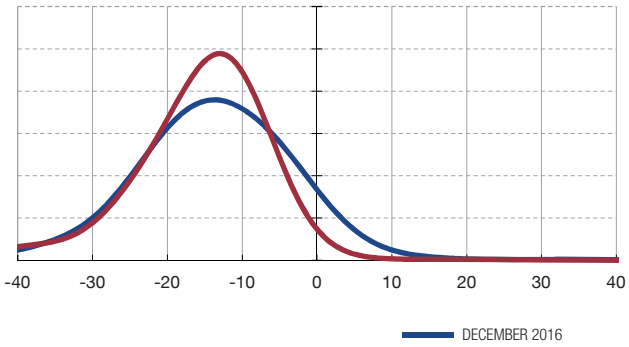
A NON-PERFORMING LOANS BY SECTOR OF ACTIVITY



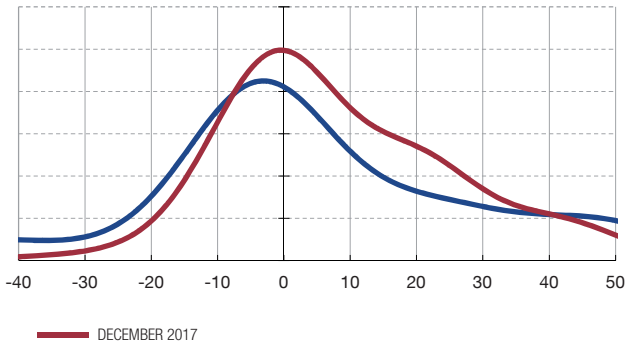
B YEAR-ON-YEAR RATE OF CHANGE IN NPLs, BY SECTOR OF ACTIVITY



C DISTRIBUTION OF THE RATE OF CHANGE OF NPLs (a)



D DISTRIBUTION OF THE RATE OF CHANGE OF CONSUMER NPLs (a)



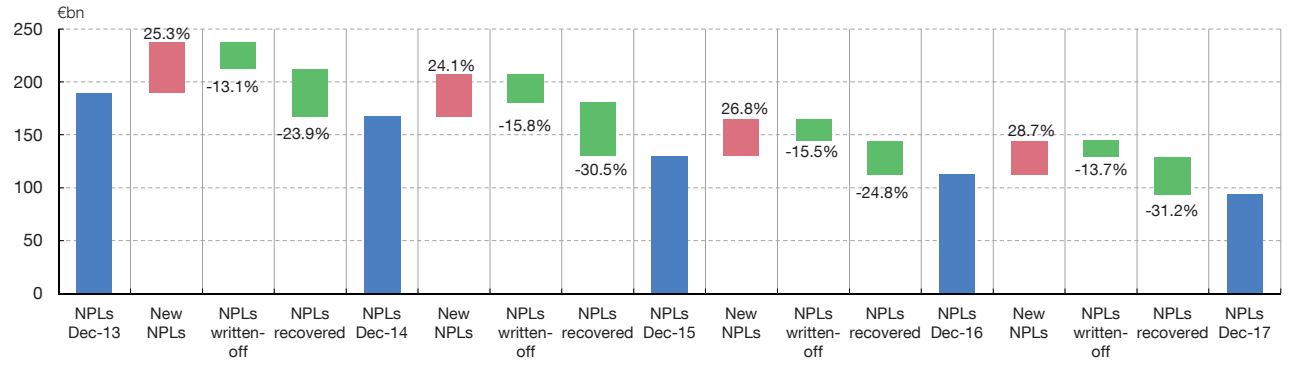
SOURCE: Banco de España.

a The graph shows the density function (or frequency distribution) of the year-on-year change in NPLs for Spanish deposit institutions, weighted by the NPLs corresponding to each institution. This density function is approximated through a kernel estimator which allows a non-parametric estimate of the density function, yielding a continuous and smoothed graphical representation of that function.

The decrease in NPLs occurred across-the-board (see Chart 2.8.C). Thus, compared with the distribution in 2016, it is seen that in the December 2017 distribution banks are more concentrated in negative rates of change of NPLs. However, this contrasts with the behaviour of the segment of loans to households other than for house purchase. In this respect, Chart 2.8.D plots the distribution of the change in non-performing consumer

FLOW OF RESIDENT PRIVATE SECTOR NPLs (a)
Business in Spain, ID

CHART 2.9



SOURCE: Banco de España.

a Shown beside each bar is the percentage each item represents of the total NPLs at the beginning of the period. NPLs recovered include non-performing loans that become performing again, foreclosed assets and NPLs sold to third parties.

loans for deposit institutions. It shows that the bulk of banks moved to less negative or near-zero rates of change in the past year, and that many recorded positive rates. The persistently low profitability faced by banks may have induced them to seek higher profits recently at the cost of running higher risks. More details of the behaviour of NPLs to households for purposes other than house purchase may be found in Box 2.1.

Compared with the previous year, in terms of amount inflows into NPLs and transfers to write-offs decreased while recoveries of NPLs increased

Chart 2.9 shows the behaviour of NPLs to the resident private sector from December 2013 to December 2017, explaining the changes in each period in terms of inflows into NPLs, outflows from NPLs to write-offs and recoveries of NPLs. In terms of amount, the past year saw a smaller quantity of credit classified as non-performing than in the previous year, less outflow to write-offs and more recoveries of NPLs.

The continued growth of the economy and active management will allow NPLs to continue to be reduced

If the economy maintains the pattern of growth seen in recent years with an evident recovery in employment and activity, and banks continue their active management of the stock of NPLs, an additional decrease in the NPLs of deposit institutions' business in Spain will be possible.

The NPL ratio decreased further to 7.9% in December 2017

The NPL ratio of the resident private sector in business in Spain continued the trend shown in recent years and decreased further to 7.9% in December 2017 (see Chart 2.10.A), driven by the downward movement of NPLs throughout the year and the more moderate fall in credit seen in that period. This NPL ratio is 1.3 pp lower than that in December 2016, the fall in the ratio having accelerated in comparison with that in 2016, which was 1 pp. The cumulative decrease from the highest value of the time series (December 2013) is 6.1 pp. The NPL ratio remained at 7.9% in February 2018 (latest data available), and after adjusting for provisions (as at December 2017) it stood at 4.3%.

The ratio decreased in non-financial corporations and, more moderately, in households

By institutional sector (see Chart 2.10.B), the NPL ratio decreased both in non-financial corporations and, more moderately, in households. In the former, it decreased from 14.9% in December 2016 to 12.2% in December 2017, and in the latter, from 5.4% to 5.3%.

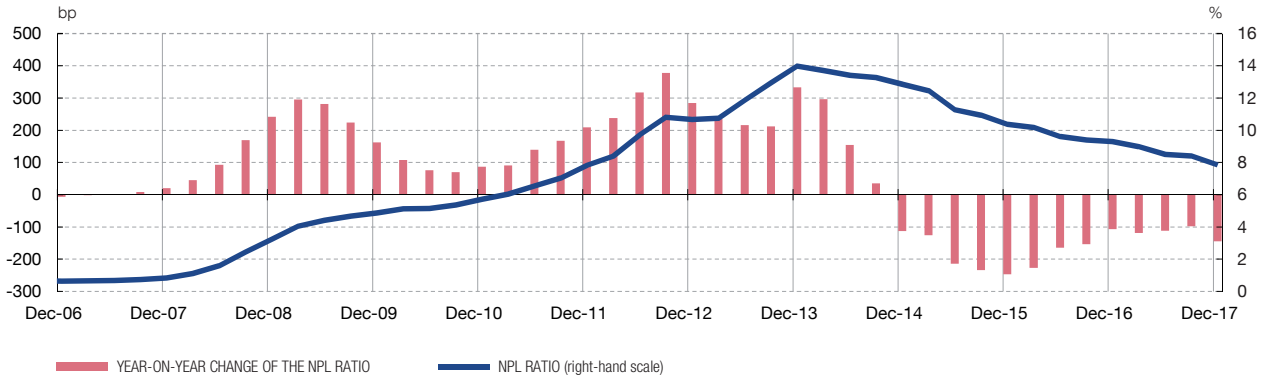
In households the NPL ratio of lending for house purchase held steady and that of lending for other purposes decreased, while in corporate...

In households, the NPL ratio held steady in the past year in house purchase loans (4.5%), while in loans for other purposes there was a moderate decrease from 10% in December 2016 to 9.6% in December 2017. The NPL ratio of lending to non-financial corporations decreased both in the construction and real estate sector (from 26.5% in December 2016 to 20.4% a year later) and in the other sectors of activity (to 8.9% in

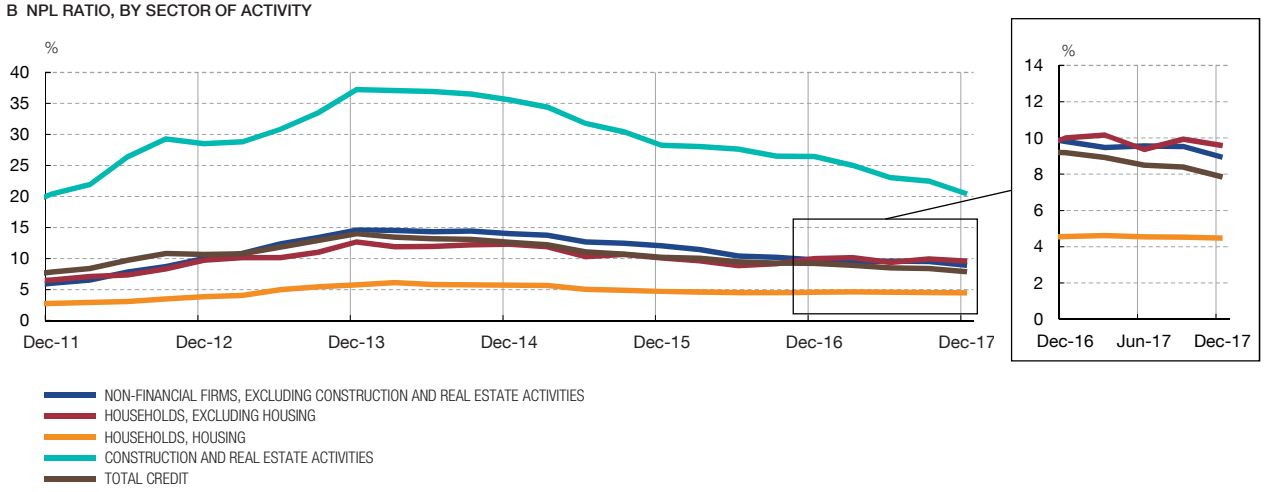
NPL RATIO. RESIDENT PRIVATE SECTOR
Business in Spain, ID. Deposit institutions

CHART 2.10

A NPL RATIO



B NPL RATIO, BY SECTOR OF ACTIVITY



SOURCE: Banco de España.

... lending there was an across-the-board decrease

December 2017 compared with 9.8% a year earlier). This improvement was due to the growth of credit (denominator of the ratio) and to the smaller rise in NPLs (numerator).

By firm size, the NPL ratio decreased both for SMEs and, more especially, for large firms. In the former, the decrease was by 3.2 pp to 16.8%, while in the latter the decrease was by 2.6 pp to the 6.8% seen in December 2017. Box 2.2 describes the behaviour of the NPL ratio by firm size.

Foreclosed assets decreased

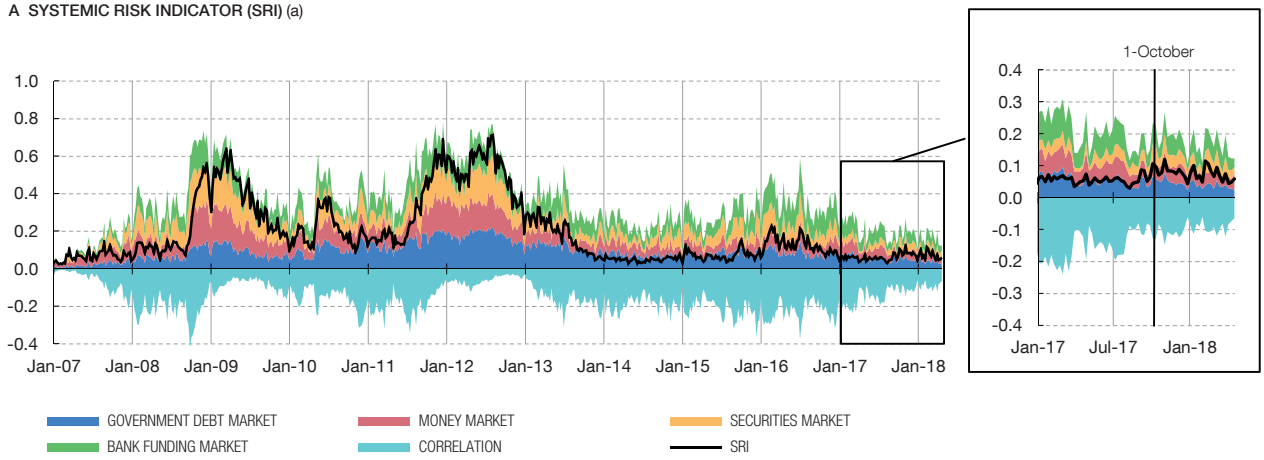
The gross book value of foreclosed assets at December 2017 was slightly above €58 billion, which represented a fall of 25.7% with respect to December 2016. In addition to the net outflow of foreclosed assets which took place in 2017, the main reasons behind the considerable change seen were, firstly, the adjustment of the gross book value of Banco Popular Español's foreclosed assets to their value net of provisions at the date of resolution of this bank and, secondly, reporting adjustments.

2.1.2 SYSTEMIC RISK

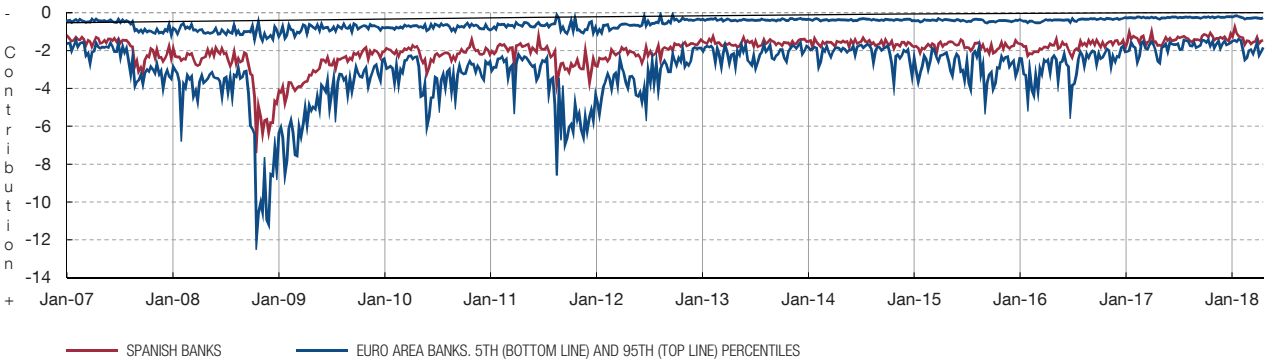
In 2017 the SRI remained subdued, with the odd sporadic rise

Generally in 2017, the systemic risk indicator (SRI), which measures synthetically the level of stress in the financial markets, remained low. In October 2017, the SRI increased, reflecting certain tensions in the financial markets as a result of the political uncertainty in Catalonia, but in November it decreased to the subdued levels of the rest of the year (see Chart 2.11.A). In the first week of February 2018 it also rose slightly due to the sharp

A SYSTEMIC RISK INDICATOR (SRI) (a)



B CONTRIBUTION OF SPANISH BANKS TO SYSTEMIC RISK MEASURED THROUGH CoVaR (b)



SOURCES: Datastream and Banco de España.

a For a detailed explanation of this indicator, see Box 1.1 in the May 2013 FSR .
b The CoVaR model is used to calculate the impact that a situation of bank stress would have on the financial system. The sample used in the CoVaR calculation comprises a total of 33 listed Spanish and euro area institutions.

price adjustments and to the higher US stock market volatility and its spread by contagion to the Spanish markets noted in Chapter 1 (see Charts 1.1.A and 1.1.E). However, the impact was limited in time and the SRI has now returned to low levels.

The contribution of Spanish banks to the systemic risk of the euro area as a whole is quantified by means of a model known as conditional value at risk (CoVaR).[3] Following episodes of systemic alert recorded during the crisis, the average CoVaR of Spanish banks has since remained at much lower levels. The last few years have seen less negative values in the 5th percentile of the CoVaR of euro area banks, indicating a fall in the contribution to systemic risk from the banks identified as most systemically important. This improvement is also seen in the average for Spanish banks. However, at the same time the average CoVaR of Spanish banks has moved nearer to the bound delimited by the 5th percentile of the euro area as a whole. This indicates that the contribution to systemic risk from Spanish banks has increased in relative terms with respect to the rest of the European system, although in absolute terms its contribution has decreased. Since the previous FSR there have been two rises relating to the recent upsurges in market volatility in November 2017 and February 2018. These bouts seem to have affected mainly euro area banks.

3 For an explanation of the CoVaR model, see the May 2015 FSR.

2.1.3 FUNDING RISK

In the past six months, the euro area interbank money markets have continued to show very low activity, largely due to the Eurosystem monetary policy

In the past six months, the euro area interbank money markets have continued to show very low activity, particularly in the unsecured segment. Chart 2.12.A shows the EONIA trading volume, which since mid-2016 has held at historically low levels with a slightly downward trend. Similarly, the Spanish interbank market continues to post very low volumes of activity.

The low interbank market trading is largely explained by the conditions of excess liquidity in which the euro area banking system is operating, which in turn is caused by the conduct of monetary policy. The volume of liquidity provided by the Eurosystem, €3,251 billion at mid-April, came from asset purchase programmes (€2,490 billion) and from refinancing operations (€761 billion). The evolution of these forms of Eurosystem liquidity provision is shown in Chart 2.12.C.

As the purchase programme has progressed, the relative importance of loans has progressively decreased. Of the latter, the bulk of funding, €739 billion, relates to a series of four targeted longer-term refinancing operations (TLTRO-II). These TLTRO-II operations provided funds to banks with a four-year maturity at an interest rate which will depend, for each bank, on the behaviour of the volume of its portfolio of loans to firms and households, excluding those for house purchase, between February 2016 and 31 January 2018. The interest rate applicable may be as low as the deposit facility rate (–0.4%) while the maximum rate is that of main refinancing operations (0%). This incentive, designed to stimulate the extension of bank credit to the real economy, may be a factor contributing to the behaviour of credit to households and firms described in Boxes 2.1 and 2.2.

The Eurosystem continues to conduct regular one-week and three-month lending operations which, as announced by the ECB in October 2017, will continue to be executed at a fixed rate with full allocation at least until the end of the last reserve maintenance period of 2019. Banks are thus assured of an ample period of time during which they will receive all the liquidity they request.

Spanish banks received 22% of the liquidity provided by the Eurosystem in mid-April

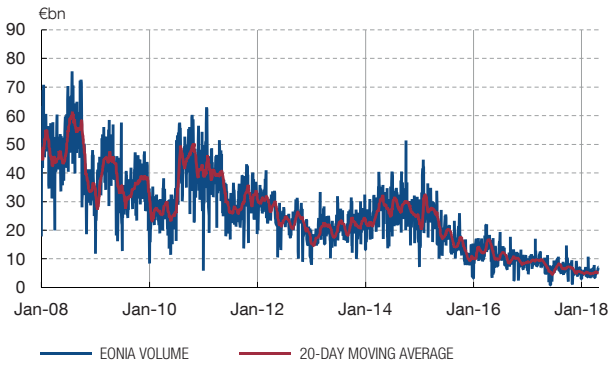
The funding obtained by Spanish banks in lending operations amounted to €169 billion in mid-April, practically all provided in targeted longer-term refinancing operations, representing 22% of the total liquidity received by all Eurosystem banks (see Chart 2.12.B).

Spanish banks increased their issuance activity in 2017 with respect to the previous year

With regard to longer-term funding, Spanish banks increased, in aggregate terms, their issuance activity in 2017 relative to the previous year and, in general, their activity was higher in the first half of the year. As regards the instruments issued, senior debt issuances increased notably and mortgage covered bonds decreased by a similar volume (see Chart 2.12.D). The senior debt issued in 2017 includes the senior non-preferred debt which began to be issued in the second quarter of 2017 and will be used by Spanish and European banks to meet the MREL (minimum requirement for own funds and eligible liabilities) set at European level to facilitate the resolution of banks as and when needed. The issuance of debt eligible as additional Tier 1 capital and of subordinated debt eligible as Tier 2 capital increased appreciably in 2017, and the amount of each type of subordinated debt issued in 2017 exceeded €6 billion.

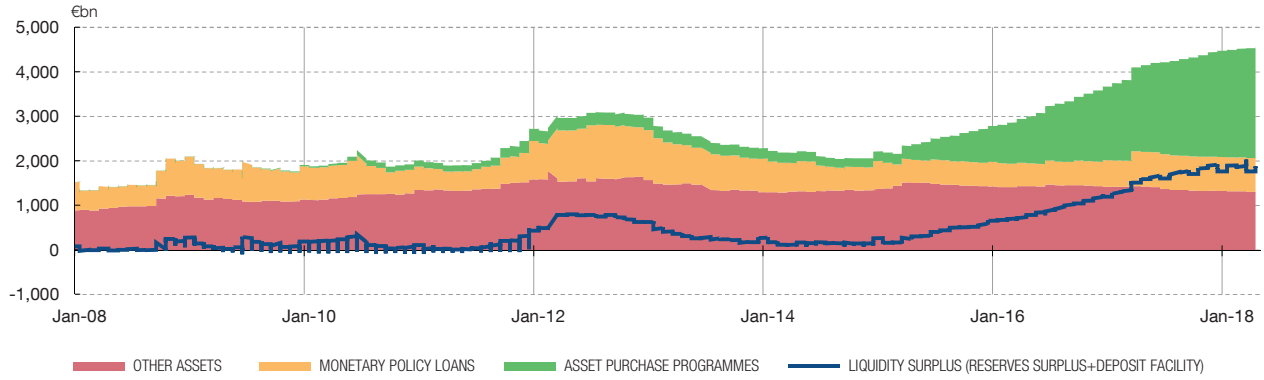
Regarding the yield which banks must offer for this type of funding on the markets, Chart 2.12.E shows that the cost of senior debt and covered bonds issues clearly differs from that of subordinated debt issues. Moreover, the cost of debt eligible as Tier 1 capital is appreciably higher than that of subordinated debt eligible as Tier 2 capital. Finally, it can

A EONIA TRADING VOLUME

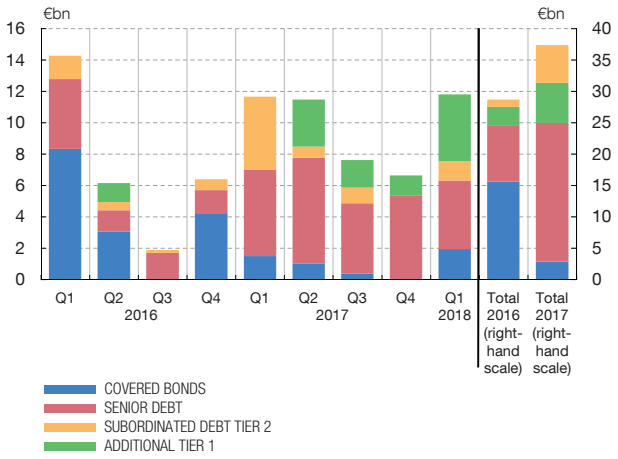


B OUTSTANDING AMOUNT PROVIDED THROUGH EUROSYSTEM TENDERS

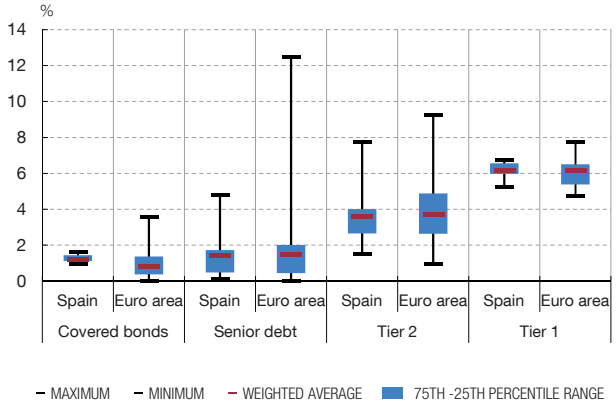
C EUROSYSTEM BALANCE SHEET AND LIQUIDITY SURPLUS



D MAIN ISSUES OF SPANISH DEPOSIT INSTITUTIONS IN MEDIUM- AND LONG-TERM WHOLESALE MARKETS (a)



E EUROPEAN COMPARISON OF ISSUANCE COST IN 2017 (b)



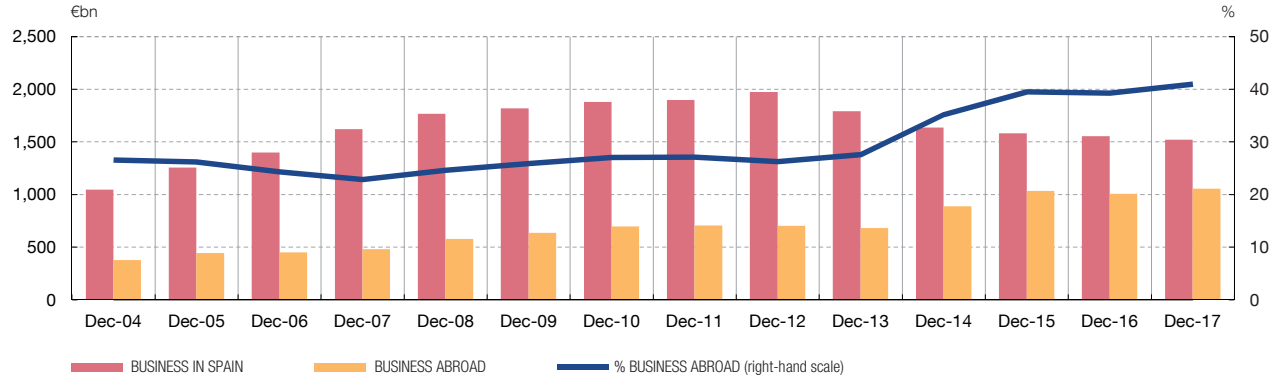
SOURCES: Bloomberg, Dealogic and Banco de España.

a Senior debt, covered bonds, subordinated debt Tier 2 and additional Tier 1 issues. Retained issues are not included.
b In the graph are shown the maximum cost, the minimum cost, the 75th-25th percentile range and the weighted average (weighted by the issuance amount) of the issuance cost (proxied by the coupon of the corresponding instrument) issued by Spanish banks and by euro area banks in 2017.

be seen that the average yield offered by Spanish bank issues is in line with that provided by euro area banks, although the dispersion in the rates required at European level is appreciably higher, probably because of the widely varying business, size and financial position of the issuing banks.

INTERNATIONAL EXPOSURE. FINANCIAL LIABILITIES. DEPOSITS
Deposit institutions

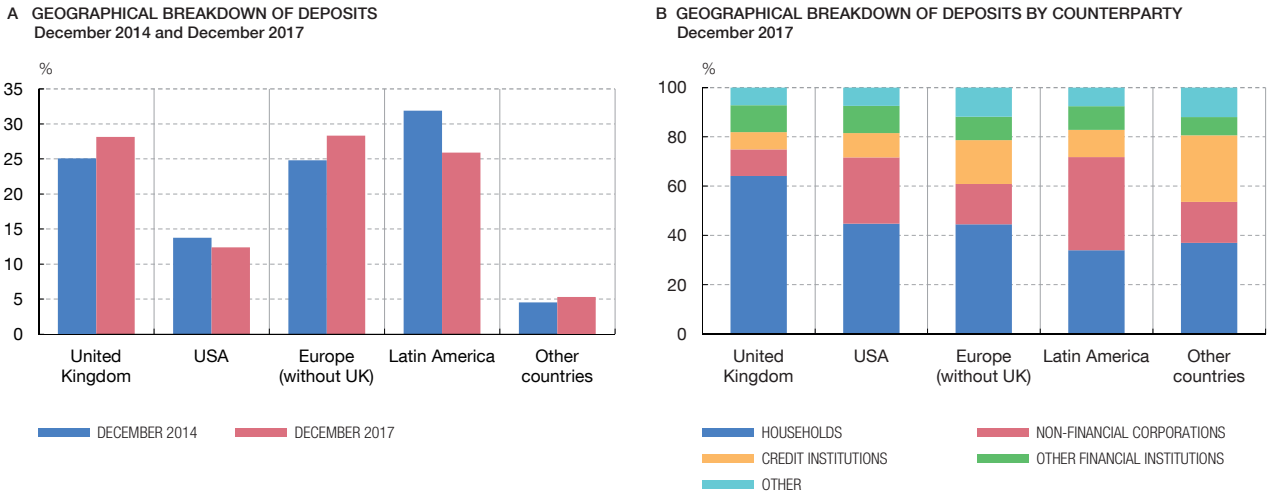
CHART 2.13



SOURCE: Banco de España.

INTERNATIONAL EXPOSURE. DEPOSITS. GEOGRAPHICAL BREAKDOWN
Deposit institutions

CHART 2.14



SOURCE: Banco de España.

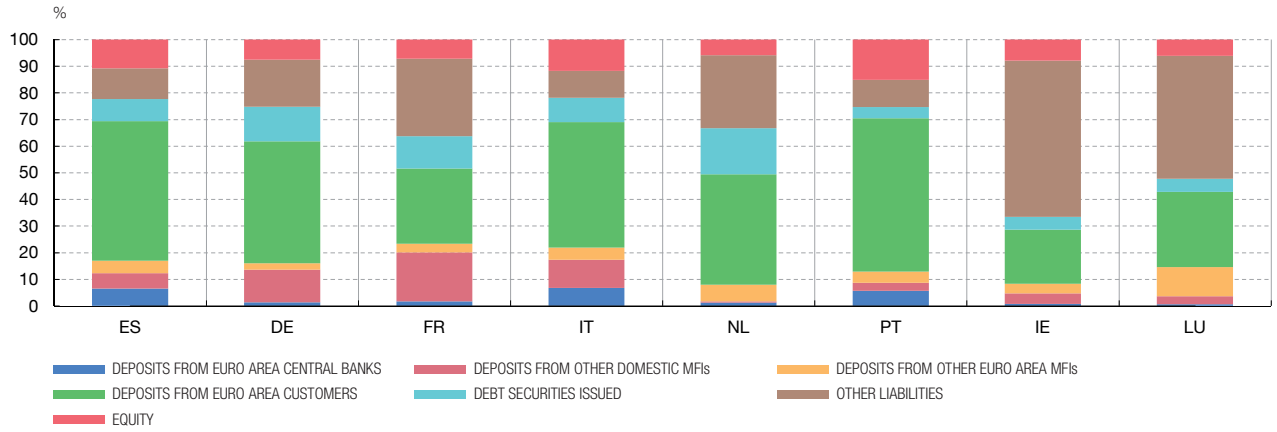
In 2017 the total deposits of the private sector decreased by 0.4% year-on-year despite the favourable behaviour of deposits abroad, which increased by 3.7%

As regards funding, private sector deposits on the consolidated balance sheet of Spanish deposit institutions decreased by 0.4% year-on-year to €1,959 billion in December 2017 (see Annex 1). Chart 2.13 shows that the decrease in the volume of total deposits of the private sector (which in addition to households also includes financial and non-financial corporations) was due to the behaviour in Spain, where they fell by 3.2% year-on-year with respect to the same month a year earlier, while deposits abroad increased by 3.7%.

Chart 2.14.A shows the geographical distribution of deposits between 2014 and 2017. Generally speaking, there were no structural changes in the distribution of deposits from the various geographical areas in which Spanish deposit institutions are present, although the percentage of deposits in Latin America decreased significantly by 6 pp to 25.9% (in line with the decrease in the volume of loans mentioned above). Also notable was the increase in deposits in the United Kingdom and the rest of Europe from 25.1% and 24.8% in December 2014 to 28.1% and 28.3% in December 2017, respectively.

FUNDING STRUCTURE OF MFIs. EU COMPARISON
Individual data. December 2017

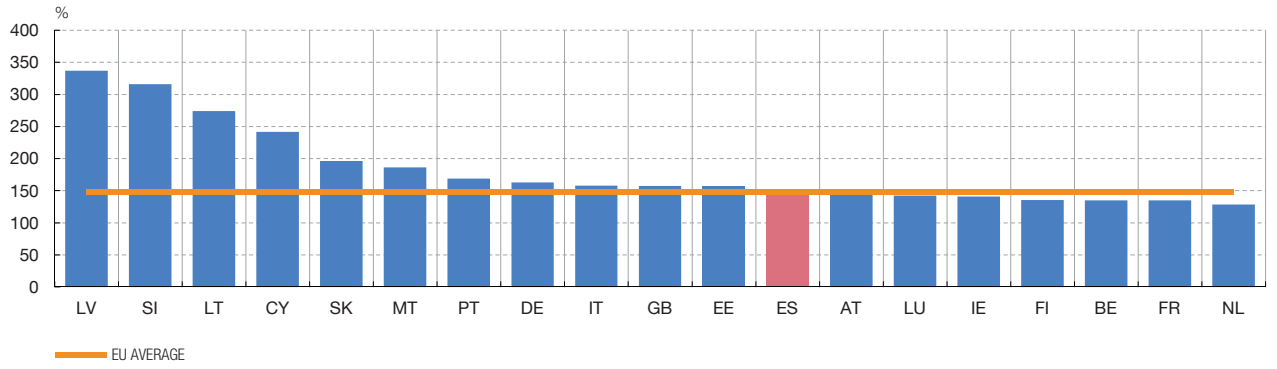
CHART 2.15



SOURCE: European Central Bank.

LIQUIDITY COVERAGE RATIO. EUROPEAN COMPARISON. SSM COUNTRIES AND UNITED KINGDOM. DECEMBER 2017 (a)

CHART 2.16



SOURCE: European Banking Authority.

a Greece is not included.

Particularly important in the United Kingdom is the funding received from households, in line with the credit provided to this segment which, as noted above, is predominant in the United Kingdom. Funding from households also predominates, albeit to a lesser extent, in the United States and the rest of Europe. In Latin America the proportions of funding from households and from non-financial corporations are more even (see Chart 2.14.B).

In Spain the main source of funding of MFIs is customer deposits, although equity and deposits from central banks are also notable for their significance relative to other European countries

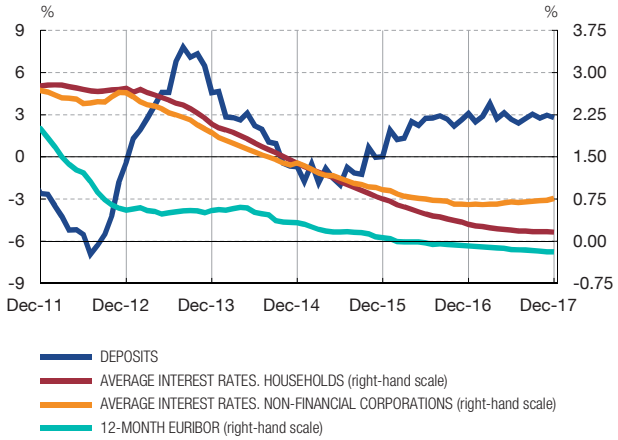
The data published monthly by the ECB in its database of individual balance sheets allows comparison of the behaviour of the structure of funding of monetary financial institutions (MFIs) from the various euro area countries. Chart 2.15 shows the structure of MFIs funding in December 2017. Notable in the case of Spanish banks is the funding from euro area customer deposits, which at end 2017 represented 52.3% of the total, one of the highest proportions in the countries considered. The equity of Spanish banks (10.8%) and deposits from central banks (6.5%) also play a more significant role than in most of the countries analysed.

Generally speaking in all the countries analysed the structure of MFIs funding was relatively similar, although with some notable exceptions. As in Spain, the main source of funding in most countries is euro area customer deposits, except in Ireland and Luxembourg where deposits from non-euro area customers (included in other liabilities) are highly significant.

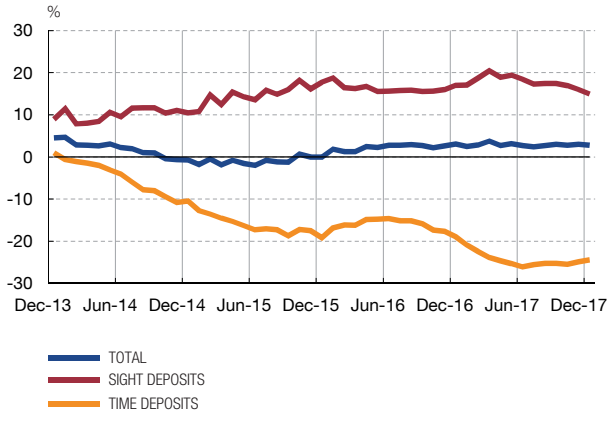
RETAIL FUNDING
Deposit institutions, ID

CHART 2.17

A CHANGE IN DEPOSITS FROM HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS, AND AVERAGE INTEREST RATES

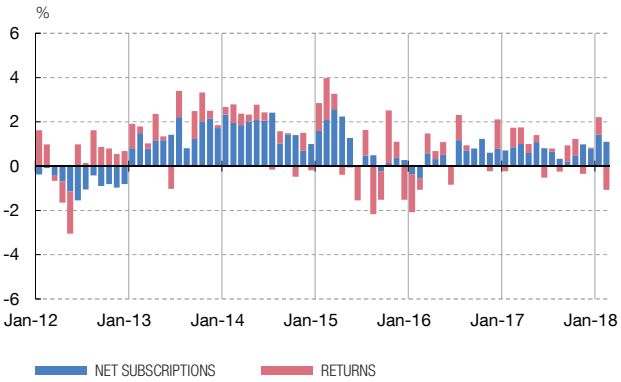


B DEPOSITS FROM HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS. YEAR-ON-YEAR RATE OF CHANGE



C LOAN-TO-DEPOSIT RATIO IN RELATIVE TERMS (a)

D CONTRIBUTION OF RETURNS AND OF NET SUBSCRIPTIONS TO CHANGE IN NET ASSET VALUE OF INVESTMENT FUNDS



SOURCES: CNMV and Banco de España.

a Loans to households and non-financial corporations net of provisions. Deposits from households and non-financial corporations plus debt securities of deposit instituions held by households and non-financial corporations.

In France and, to a lesser extent, in Germany, deposits from other domestic MFIs are fairly significant. In the Netherlands, debt issuance is a significant source of funding for banks, while in Spain, Italy and Portugal deposits from euro area central banks play a more significant role than in other euro area countries. In short, the focus of business on the retail, wholesale or capital market and, to a lesser extent, the financial crisis explain the difference in funding strategies among the banking union countries.

The liquidity coverage ratio of Spanish banks was 151.1% at end-2017, slightly above the European average and well above the required minimum threshold

The liquidity coverage ratio (LCR) measures the ability of banks to cope with possible liquidity stress for a period lasting 30 days. Chart 2.16 shows that in December 2017 the LCR of the analysed European banks as a whole stood at 148.5%, well above the threshold of 100% required from 2018. Analysis by country also reveals ratios significantly above the minimum required in all the countries analysed; Spanish banks as a whole, with a ratio of 151.1%, stand slightly above the European average. In short, this analysis shows that banks have high-quality liquid assets available to meet the net outflows of cash which may occur in a liquidity stress scenario.

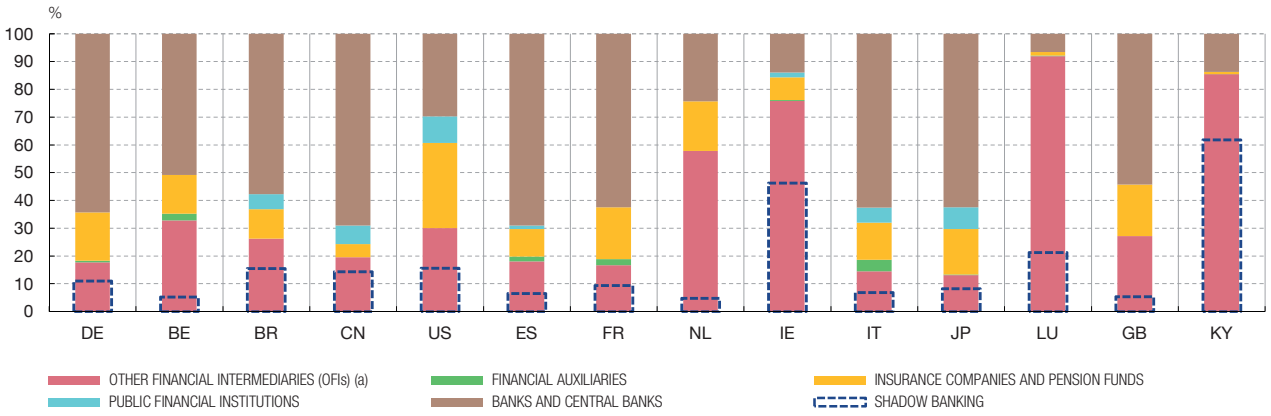
Retail deposits in Spain increased by 2.8% with sight...

Retail deposits taken by Spanish deposit institutions from households and non-financial corporations, analysed using the data from the individual financial statements of business

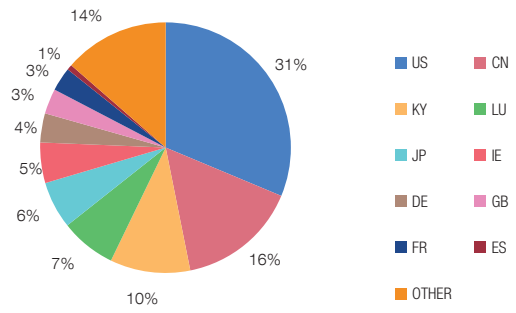
FINANCIAL SYSTEM AND SHADOW BANKING
December 2016

CHART 2.18

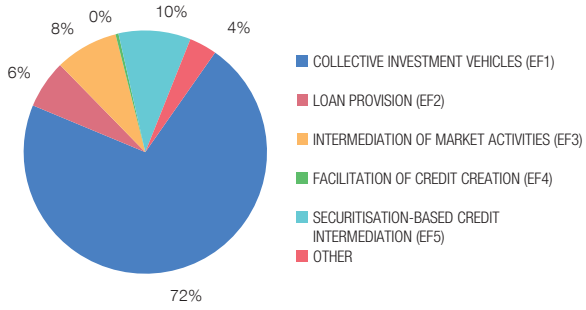
A PERCENTAGE OF TOTAL FINANCIAL ASSETS HELD BY FINANCIAL INSTITUTIONS



B BREAKDOWN OF SHADOW BANKING ASSETS BY COUNTRY (b)



C BREAKDOWN OF SHADOW BANKING ASSETS BY ECONOMIC FUNCTION



SOURCE: Financial Stability Board.

a OFIs include institutions such as investment funds, money market funds, securitisation vehicles, broker-dealers, finance companies, risk capital companies and funds, mutual guarantee societies, structured finance vehicles, etc.
b The chart includes countries with shadow banking assets accounting for at least 3% of global shadow banking assets. Spain, with 0.7% of global shadow banking assets, is also included.

...deposits rising and time deposits falling

in Spain, increased by 2.8% in December 2017 compared with the same month a year earlier (see Chart 2.17.A). This rate is similar to that in December 2016 and, in general, to those seen since mid-2015, when the deposits of households and non-financial corporations began to recover despite a downward trend in interest rates. Owing to their low yield, time deposits continued to be replaced by sight deposits (see Chart 2.17.B), the former having decreased by 24% year-on-year in 2017 and the latter having increased by 15% in the same period.

The loan-deposit ratio again decreased

The downward trend in lending, albeit progressively more subdued, and the recovery of resident private-sector deposits in the last few years has allowed a significant ongoing decrease in the loan-deposit ratio in recent years, which also continued to be seen in 2017. This ratio is practically half of its value in October 2007, when the peak of the whole series was recorded (see Chart 2.17.C).

The net assets of investment funds continued their upward trend initiated at the end of 2012

In 2017, against a background of low returns on assets, the net assets of investment funds continued their upward trend initiated at the end of 2012, so the volume of investment funds in Spain has now been increasing for five years. In particular, in 2017 the net assets of investment funds increased by more than €27 billion (nearly 12%) to €263 billion,

and this growth has continued in the first two months of 2018. The growth was due mainly to a sustained rise in net subscriptions (see Chart 2.17.D). The yields on investment funds also contributed positively to the increase in their amount in aggregate terms, although in four months of 2017 their contribution was negative, as it was in February 2018.

Spain is among the group of advanced countries with a low weight of shadow banking (around 6% of the total assets of financial institutions)

The Financial Stability Board (FSB) has continued to make progress in its definition of shadow banking and in the methodology for quantifying its size. Specifically shadow banking refers to those activities which entail the generation of risks similar to banking risks (transformation of liquidity and of maturities, leverage, etc.) but which are not subject to banking regulation or supervision and lack access to central bank liquidity. By means of the definition of certain economic functions, the FSB determines which non-bank financial intermediaries engage in credit intermediation not subject to banking regulation and are thus considered to be shadow banking. According to this common FSB analysis methodology, shadow banking in Spain accounts for 6% of the total assets of Spanish financial institutions.[4]

Chart 2.18.A shows the distribution by country of the financial assets held by the various financial institutions, and the weight of shadow banking. At overall level, Spain contributes less than 0.7% to the total financial assets considered as shadow banking. These figures put Spain within the group of advanced countries with a low weight of shadow banking (see Chart 2.18.B). The measure obtained using the economic functions considered is composed mainly of assets held by certain collective investment vehicles (see Chart 2.18.C) whose growth has determined the increase in shadow banking in recent years. The relative size of the sector suggests that the sources of alternative financing for the Spanish economy would have a low effect on the credit market in the short term, although it is advisable to monitor their behaviour and their possible risks.

2.2 Profitability

Spanish institutions' consolidated earnings in 2017 came to €15.6 billion, 44% higher than the previous year. If Banco Popular Español's losses are included, however, earnings fell with respect to 2016

In 2017, Spanish deposit-taking institutions as a whole posted consolidated earnings attributed to their parent institutions of €15,572 million (see Annex 2), 44 % higher than in 2016. However, if Banco Popular Español's loss of over €12 billion as a result of its resolution on 7 June 2017[5] is considered, the final figure comes to €2,722 million, a drop of almost 75% from earnings in 2016. In order to avoid the resolution of Banco Popular Español's distorting the analysis of Spanish deposit-taking institutions as a whole, its effect has been excluded from the analysis. The same principle has been applied when studying the profitability of business in Spain in order to follow uniform criteria in both analyses.

The increase in earnings translated into the return on assets (ROA) of Spanish deposit-taking institutions as a whole rising by almost 14 bp last year, from 0.30% in 2016 to 0.43% in 2017. Similarly, return on equity (ROE) also rose, in this case by almost 1.7 pp, from 4.3% in 2016 to 6% in 2017.

The components of the income statement performed favourably compared to the previous year, with the exception of gains and losses on financial assets and liabilities and operating expenses

A breakdown of the contribution of the main income statement components to this increase in ROA between December 2016 and December 2017 is shown in Chart 2.19.A. The income statement's components performed favourably compared to the previous year, with the exception of gains and losses on financial assets and liabilities and operating

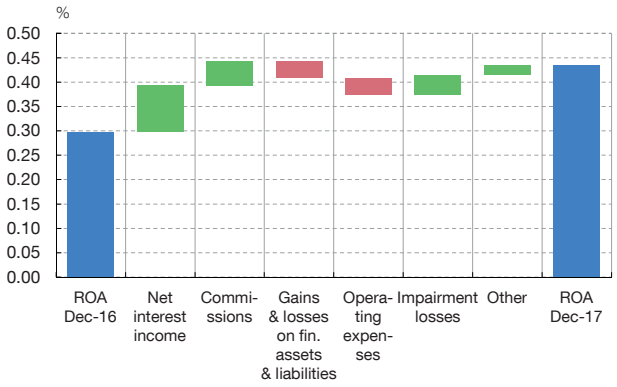
4 The list of economic functions (EF) identified by the FSB and used for classifying the entities engaging in shadow banking is as follows: EF1 includes the management of collective investment vehicles that are susceptible to investor runs; EF2 refers to the granting of loans dependent on short-term funding; EF3 relates to market intermediation dependent on short-term funding; EF4 comprises the contribution to credit creation; and EF5 consists of credit intermediation based on asset securitisation and financial institution funding.

5 For a detailed explanation of Banco Popular Español's resolution process, see Box 2.4 of the November 2017 FSR.

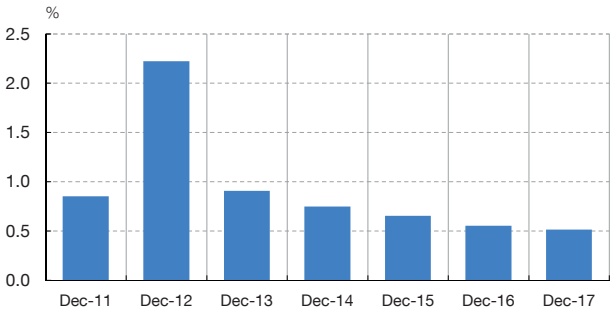
CONSOLIDATED PROFITABILITY
Deposit institutions

CHART 2.19

A BREAKDOWN OF THE CHANGE IN CONSOLIDATED PROFIT ATTRIBUTED TO THE PARENT INSTITUTION IN DECEMBER 2017 WITH RESPECT TO DECEMBER 2016 AS A % OF ATA (a)



B FINANCIAL ASSET IMPAIRMENT LOSSES AS A % of ATA



SOURCE: Banco de España.

a The red (green) colour of the bars indicates a negative (positive) contribution of the corresponding item to the change in consolidated profit in December 2017 with respect to December 2016.

expenses. At the top of the income statement, both net interest income and net commissions increased relative to 2016, and at the bottom of the income statement, both financial asset impairment losses and other items improved their contribution to consolidated earnings relative to 2016.

Net interest income grew by 3.7% in 2017 on the previous year, as a result of the sustained decrease in financial costs. Net commissions also grew relative to 2016

Net interest income grew by 3.7% in 2017 relative to 2016 as a result of the sustained decrease in financial costs (–10.6%, see Annex 2), despite financial products declining by almost 2%. This increase in net interest income caused it to rise by 10 bp relative to average total assets (ATA). Similarly, net commissions grew by 6% over the past year, rising by 5 bp relative to ATA. For their part, gains and losses on financial assets and liabilities continued their decrease from previous years, with a reduction of 3 bp relative to ATA. Operating expenses edged up by 0.9% last year, rising by 3 bp relative to ATA. However, as gross income grew more than operating expenses, the Spanish banking sector's overall cost-to-income ratio improved in 2017. Finally, impairment losses on financial assets continued their unbroken decline begun in late 2012 (see Chart 2.19.B), decreasing 4 bp relative to ATA.

For Spanish institutions, net interest income represents a percentage of gross income that is larger than the European average, while commissions account for a smaller share

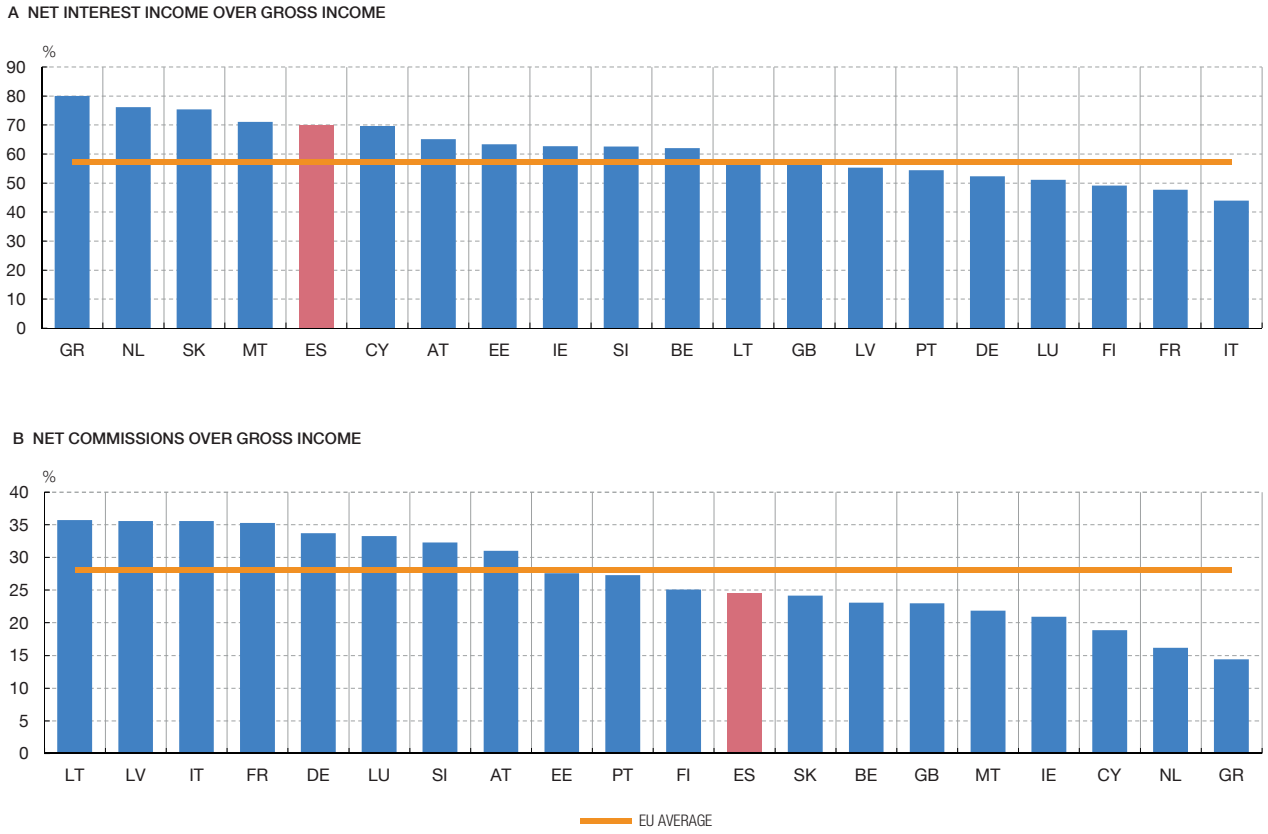
In Europe's current low-interest-rate environment, Spanish deposit-taking institutions have increased both their net interest income, on the back of their foreign business, and their net commissions from both their activity in Spain and their foreign business outside the euro-area. Chart 2.20 analyses in more detail the items at the top of the income statement, which best reflect the pure banking business, and compares them with the rest of Europe. In particular, the share of gross income represented by net interest income and commissions is examined. It can be seen that, among Spanish institutions, the share of gross income represented by net interest income (almost 70%) is higher than in comparable European countries and the European average (57%, see Chart 2.20.A). By contrast, the percentage of Spanish institutions' gross income accounted for by net commissions is somewhat smaller (less than 25%) than in the main European countries and the European average (28%, see Chart 2.20.B).

The Spanish banking system's cost-to-income ratio remains...

In terms of the cost of the resources used to generate profits (i.e. efficiency), the Spanish banking sector's efficiency continues to be higher than the European average and that

PROFITABILITY. EUROPEAN COMPARISON. SSM COUNTRIES AND UNITED KINGDOM. DECEMBER 2017

CHART 2.20



SOURCE: European Banking Authority.

...in a better position than that of its peers

of the main European countries. According to European Central Bank data from September 2017 (the most recent available), while the cost-to-income ratio of Spanish institutions is slightly above 50%, the European average and Italian and British banks' ratios are over 60%, while German and French banks' ratios are over 70% (see Chart 2.21.A). The same data show that Spanish institutions' cost-to-income ratio improved between December 2016 and September 2017, mainly as a result of the increase in gross income, although the improvement was smaller than registered for the European sector as a whole, or in countries such as Italy and the United Kingdom, which considerably reduced their operating expenses (see Chart 2.21.B).

The reduction in impairment losses improved earnings from business in Spain in 2017...

Analysis of institutions' individual financial statements shows returns on business in Spain to be lower in 2017 than those on their consolidated global business, although there had been an improvement since 2016. In particular, ROA on business in Spain rose from 0.25% in December 2016 to 0.35% in December 2017. The main underlying reason for this improvement is the 20% reduction in financial asset impairment losses last year.[6]

... despite an almost 7% drop in net interest income

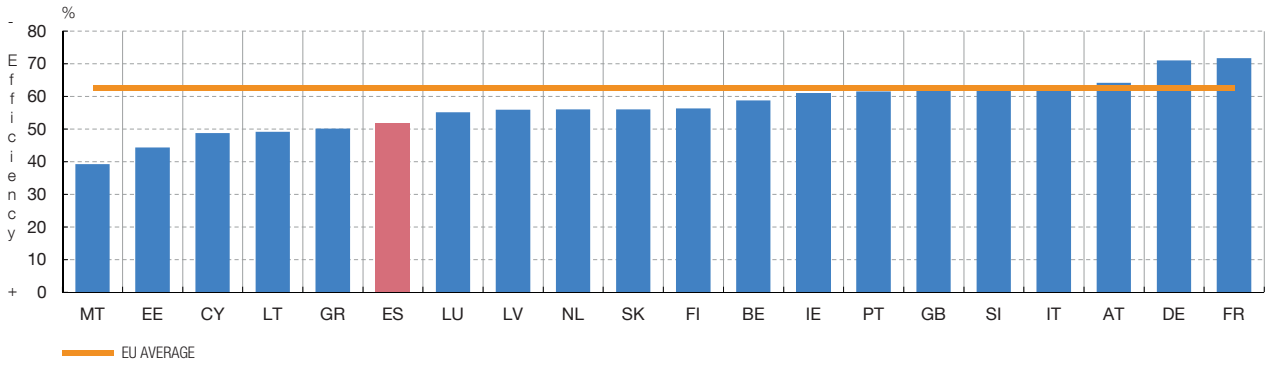
By contrast, net interest income from business in Spain fell by almost 7% as a result of there being a bigger drop in financial revenue than in financial costs. Chart 2.22.A shows how, in the case of business in Spain, financial revenue and costs, as well as net interest

6 If Banco Popular Español's provisions in the first half of 2017 are taken into account, financial asset impairment losses across the sector as a whole increased by 8.1% relative to the previous year.

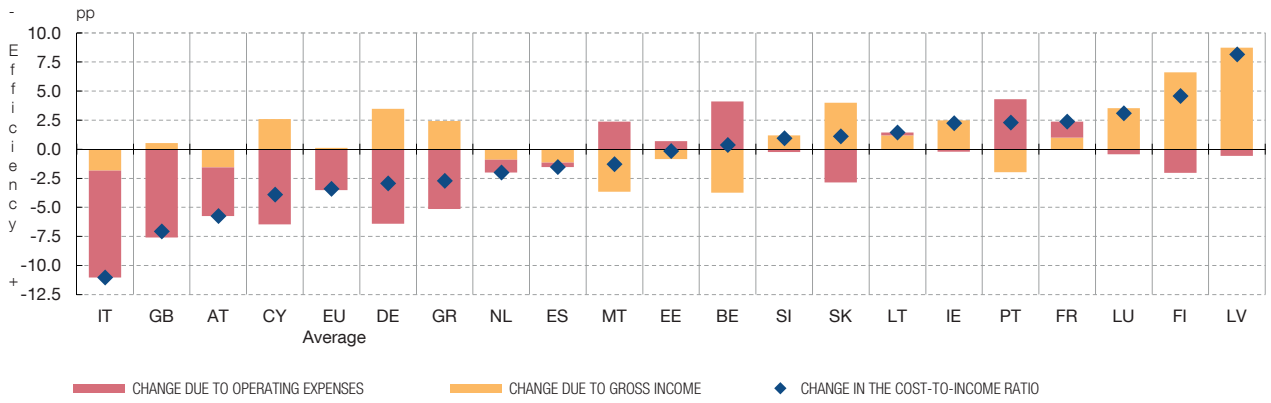
COST-TO-INCOME RATIO. EUROPEAN COMPARISON. SSM COUNTRIES AND UNITED KINGDOM. SEPTEMBER 2017

CHART 2.21

A COST-TO-INCOME RATIO (a)



B CHANGE IN THE COST-TO-INCOME RATIO BETWEEN DECEMBER 2016 AND SEPTEMBER 2017 (b)



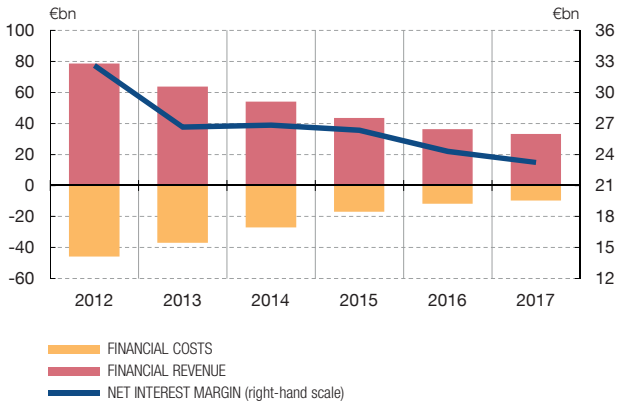
SOURCE: European Central Bank.

a Cost-to-income ratio is defined as operating expenses divided by gross income.
b The blue diamond shows the total change in cost-to-income ratio from December 2016 to September 2017 for each country. The dark red and yellow bars show the portion of this change attributable to changes in operating expenses and gross income, respectively. Negative bars denote an inter-period reduction in operating expenses and an inter-period increase in gross income, which are changes that would result in an increase in the cost-to-income ratio.

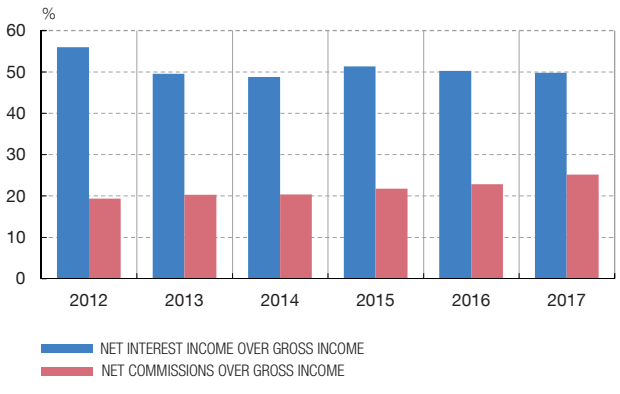
PROFITABILITY
Business in Spain, ID

CHART 2.22

A FINANCIAL REVENUE AND COSTS AND NET INTEREST MARGIN



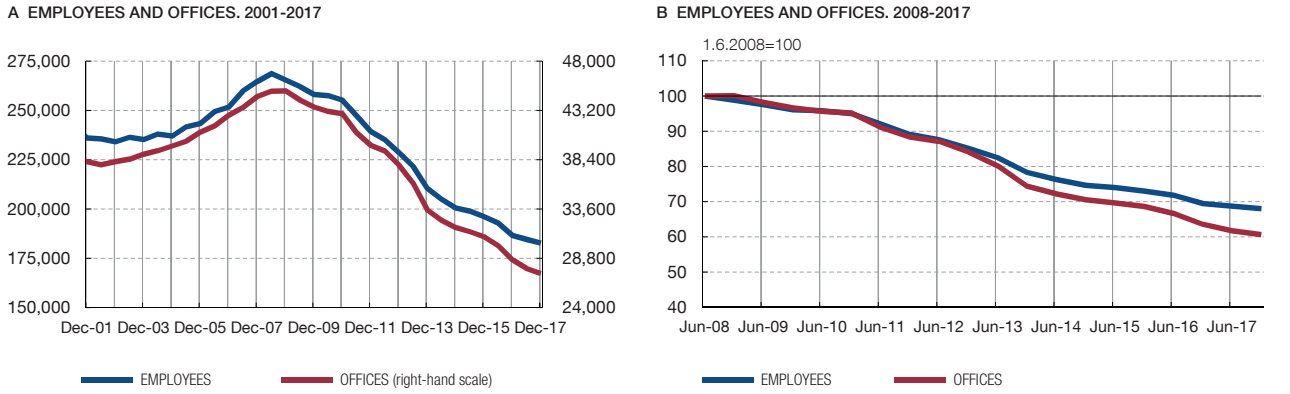
B NET INTEREST INCOME AND NET COMMISSIONS OVER GROSS INCOME



SOURCE: Banco de España.

EMPLOYEES AND OFFICES
Business in Spain, ID

CHART 2.23



SOURCE: Banco de España.

income, have gradually decreased over the last five years. By contrast with the drop in net interest income, net commissions from business in Spain rose by more than 5% last year.

Consistent with the analysis of the items at the top of the income statement in the European comparison, Chart 2.22.B shows how the percentage of gross income of business in Spain accounted for by net interest income and net commissions has changed in recent years. First of all, it can be seen that, accounting for around half of gross income, net interest income is less important in domestic business than in consolidated global business (where it accounts for almost 70%, as mentioned above). This shows the greater importance of net interest income for Spanish institutions in their international business as a profit generator. For its part, at around 25%, the share of gross income represented by net commissions is very similar in the case of both domestic and international business. As regards the development over time, Chart 2.22.B shows how over the last five years there has been a decrease in the ratio of net interest income to gross income (from 56% in 2012 to 50% in 2017), and an increase in the proportion of net commissions (from 19% in 2012 to 25% in 2017).

Following the trend observed in recent years, operating expenses were reduced by more than 2% last year, in the context of a capacity adjustment process entailing a reduction in the number of employees and offices in Spain (see Chart 2.23.A). The cumulative decrease in employee numbers in December 2017 was 32% relative to the peak in June 2008, while more than 39% of offices have closed since the peak in December 2008 (see Chart 2.23.B). Moreover, the consolidation processes under way in 2017 should help improve the Spanish banking system's medium-term efficiency.

The "fintech" phenomenon offers institutions opportunities and increases the competition they face, making it a challenge for traditional banking

Finally, as discussed in previous FSRs, the challenge for deposit-taking institutions' business that the process of financial innovation through the development of new products, services and intermediaries represents cannot be overlooked. The so-called "fintech" phenomenon, which stresses the importance of the technological component of this process, offers institutions opportunities to expand their range of products and services or increase their efficiency (for example, by reducing the cost or time involved in transactions or obtaining information). It also increases competition in the financial sector by expanding the pool of potential suppliers of the various types of financial products and services, thus posing a challenge for traditional banking. In this connection, Box 2.4 takes a closer look at the phenomenon of crypto-assets and their potential implications for financial stability, consumer protection and market integrity.

Crypto-assets can be defined as a category of private virtual assets which are chiefly supported by the combined use of cryptographic techniques and Distributed Ledger Technology (DLT). It is a broad concept which differentiates between two large "families": those initiatives which have been conceived for use in payment transactions and the so-called digital tokens. The former are generally known as "cryptocurrencies" (although they do not in fact have the characteristics associated with money), whereas the latter are the digital representation of value which are usually issued to obtain financing and entitle their owner to receive a return or remuneration in kind, or to exercise certain rights.

In the public sphere, a debate has also commenced about the creation of virtual money issued directly by central banks (see the Bank for International Settlements (BIS) report entitled "Central Bank Digital Currencies", March 2018).

Crypto-assets arose initially to be used as a medium of exchange when predominantly digital goods and services are received by means of a voluntary agreement between creditors and debtors. The DLT underpinning this type of virtual assets permits the decentralised sending of payments, i.e. without financial intermediaries or the usual clearing and settlement systems used in current payment systems. Occasionally the removal of intermediaries has fostered the initial use of these instruments as a medium of exchange in certain instances, for example, to make cross-border payments.

Additionally, since crypto-assets can be traded on certain exchange platforms, as time has passed this has prompted greater interest in their appeal as an investment vehicle. At the same time, some of the characteristics of the markets where they are traded (e.g. shallowness, lack of transparency in price formation mechanisms and elevated concentration) explain their high volatility. Specifically, the volatility of the Bitcoin – perhaps the most popular of these products – was 94.28% in 2017, which was substantially higher than that of other traditional assets such as oil (26.18%) and gold (10.97%).[1]

Since the Bitcoin emerged in 2009, the number of the first type of crypto-assets has grown to more than 900 initiatives, representing capitalisation of around $300 billion.[2] However, more than 80% of the market is concentrated in five of this type of crypto-assets. The lack of data on the breakdown by transaction type makes it difficult to ascertain the actual weight of crypto-assets as a medium of exchange. In aggregate terms, the number of daily Bitcoin transactions in 2016 averaged approximately 264,000[3] worldwide, compared with 334 million retail transactions in the EU alone. Payment transactions made on Ripple, the platform used mainly for cross-border payments, represent between 3% and 4% of total transactions.[4] Therefore, everything seems to indicate that these assets have a very limited role as a medium of exchange and their popularity stems essentially from their speculative nature as an investment asset.

The second category of crypto-assets – digital tokens – is a more recent phenomenon which started to become more important in 2017. Initially, digital tokens began to be employed for the programming of smart contracts performed by using DLT. In simple terms, these contracts are based on a code or IT protocol which facilitates the automated verification and performance of the underlying contract, without the need for intermediaries.

One of the most notable subsequent applications of these crypto-assets are ICOs (initial coin offerings), digital token issuance mechanisms for firms and individuals to obtain funds to finance investment projects, in exchange for providing their holder with a future return (security tokens), the receipt of goods or services which are the purpose of the business project or the exercise of a series of non-economic rights such as voting rights (utility tokens). Tokens are issued when legal tender or other crypto-assets are received, and can generally be traded on exchange platforms. Currently, these issues are very diverse given the characteristics and objectives of the underlying projects.

The market for these digital tokens has grown more rapidly than the cryptocurrencies market, reaching in a short time more than 600 initiatives with a capitalisation of $34 billion[5] and a lower concentration of holders.

As indicated above, crypto-assets cannot be considered as money in economic terms because they do not fulfil its three basic functions: a store of value, a unit of account and a medium of exchange. They can only be used as a consideration for goods and services received in limited specific cases and their highly variable prices makes it impossible for them to be used as a store of value over time and as a standard numerical unit of value. It should be noted that unlike coins and banknotes with legal tender status, crypto-assets are not supported by a central bank or public authority and cannot be deemed a means of payment since they are not a universally accepted asset.

Without detriment to the potential advantages that crypto-assets and, in particular, their underlying technology can contribute to the financial system, they have a series of risks which are being scrutinised by public authorities worldwide. On one hand, high market volatility exposes crypto-asset holders to sharp movements in their positions, making them highly speculative investments. The lack of liquidity in these markets may also hinder the conversion of crypto-assets into legal tender at a specific point in time. Additionally, their high reliance on fledgling technologies does not exclude the possibility of operating failures and cyber threats which could mean they are temporarily unavailable or, in extreme cases,

1 Bloomberg and coinmarketcap.com.
2 https://coinmarketcap.com/en/
3 This figure rose to 1,136,210 between January and March 2018.
4 https://xrpcharts.ripple.com/#/metrics
5 However, around 20% of the tokens do not record market capitalisation.

the entire investment is lost. On the other, as a result of the anonymity which is characteristic of transactions involving crypto-assets, their use is particularly attractive for unlawful and illegal activities such as money laundering or terrorist financing.

In view of the existing risks and the current developments in these markets, the authorities are analysing the possible implications of private crypto-assets for the financial system. Organisations such as the Financial Stability Board (FSB), the BIS and the International Organisation of Securities Commissions (IOSCO) are making considerable efforts in this area. At present, the impact of crypto-assets on global financial stability is considered limited in view of their scope and scale,[6] admittedly, given the growth momentum of these products, ongoing monitoring of this phenomenon is recommendable. Nevertheless, there are other risks which should also be considered; specifically, the priority courses of action are focusing on the protection of financial services users and market integrity. Thus, the warnings and statements aimed at alerting investors and financial services users of the risks arising from the use of crypto-assets and the related financial products are worth noting.[7] Regulatory measures on the prevention of money laundering and terrorist financing are also being adopted by extending the requirements of the current arrangements to other players such as, for example, the exchange platforms and digital portfolio providers.[8]

6 See section one of the letter of the Chairman of the FSB to the G20 of 13 March 2018 (http://www.fsb.org/wp-content/uploads/P180318.pdf).

7 In the case of Spain, for example, see the joint press statement of the CNMV and the Banco de España on "cryptocurrencies" and "initial coin offerings" (ICOs), of 8 February 2018.

8 The publication of the amendment to Directive (EU) 2015/849 of the European Parliament and of the Council on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing is pending in the EU.

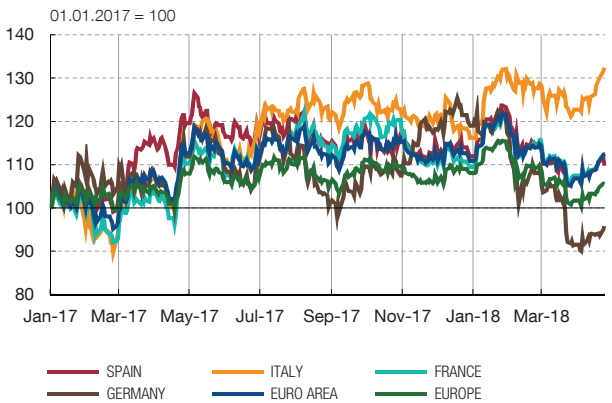
Spanish and European banks performed positively on stock markets in 2017

In short, in 2017, despite the persistence of pressure on the profitability of the Spanish and European banking sector, rising profits translated into positive stock-market performance for both Spanish institutions and those of the other main European countries. Thus, the Spanish banking sector as a whole registered a share-price increase of over 10%, in line with the European average (see Chart 2.24.A). So far in 2018, the rising share prices of the first few weeks came to a halt with contagion from the sharp drop on Wall Street in the first week of February, such that in the year as a whole, the final result was slightly downward. As a result, European banks' price-to-book values have broadly risen since the start of 2017, and on this metric the Spanish banking sector has maintained its strong position relative to its European peers, although below the threshold of one (see Chart 2.24.B).

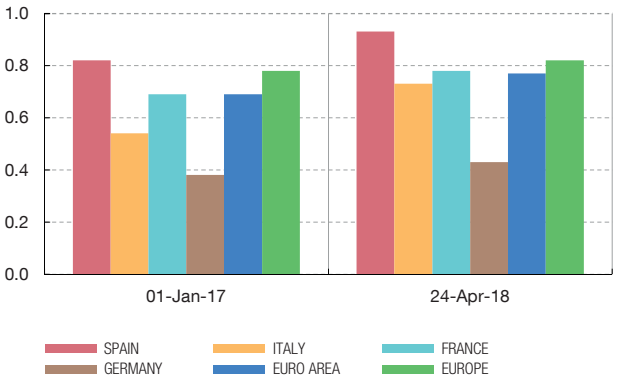
MARKET INFORMATION
European comparison

CHART 2.24

A BANKING-SECTOR STOCK MARKET INDICES



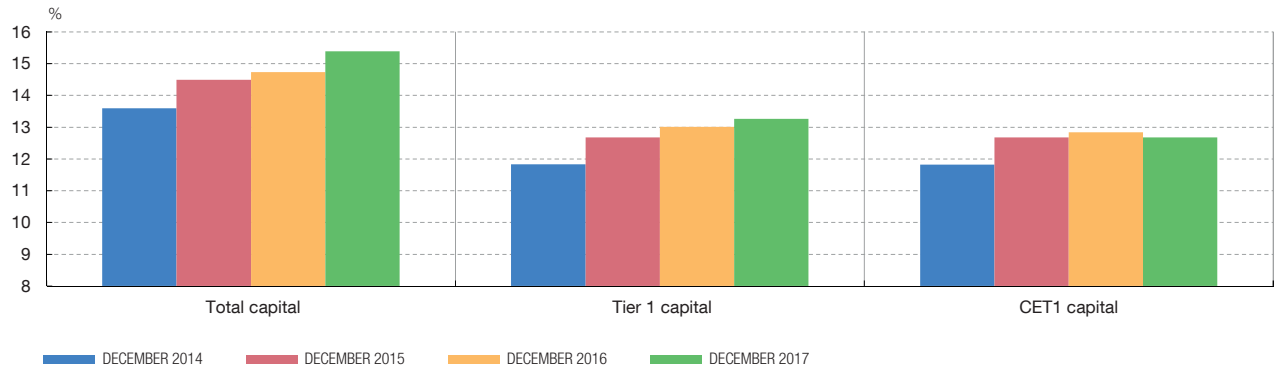
B PRICE-TO-BOOK-VALUE RATIO OF THE BANKING SECTOR



SOURCE: Datastream.

CAPITAL RATIOS
Deposit institutions

CHART 2.25



SOURCE: Banco de España.

2.3 Solvency

The CET1 ratio came to 12.7% in December 2017, having dropped slightly last year

Spanish deposit-taking institutions' highest-quality capital, Common Equity Tier 1 (CET1), stood at 12.7% in December 2017, having dropped slightly in 2017 (16 bp), partly as a result of the resolution of Banco Popular Español. Meanwhile, both the total capital ratio and the Tier 1 capital ratio rose during the year. Specifically, the total capital ratio reached 15.4% in December 2017 (compared with 14.7% in December 2016), while the Tier 1 capital ratio stood at 13.3% at the end of 2017 (compared with 13% the previous year).

Over a longer time horizon, it can be seen from Chart 2.25 that capital ratios have risen over the last three years. The CET1 ratio rose by almost one percentage point from 11.8% in December 2014 (the first full year of application of the prudential solvency standards approved by the Basel Committee, generally referred to as Basel III, which were transposed into the European regulatory framework by CRR/CRD-IV). Similarly, the total ratio increased by almost 2 pp from 13.6% in December 2014 and the Tier 1 capital ratio rose by 1.5 pp (from 11.8% on the same date).[7]

The increase in the total capital and Tier 1 capital ratios was underpinned by the reduction in risk-weighted assets

In absolute terms, the capital level decreased last year for all three types of capital, with the drop in CET1[8] being largest (see Chart 2.26.A). Nevertheless, as risk-weighted assets (RWAs) are the denominator of the ratios, a reduction in RWAs translates into the changes in the ratios discussed (a slight drop in the CET1 ratio and increases in the other two ratios). In late 2017, RWAs accounted for 45% of total assets of those institutions obliged to report their own funds. Continuing the trend from recent years, the composition of these RWAs remained stable over the course of 2017. Credit and counterparty risk make up the bulk of the RWAs (87%), followed by operational risk (9%), while position, exchange rate and commodity risk, and other risks, represent less than 5% of institutions' RWAs (see Chart 2.26.B.). An analysis of changes in the credit exposures, RWAs, densities and calculation methods of the main European countries based on data from the EBA stress testing and transparency exercises is given in Box 2.5. Box 2.6 summarises recent decisions by the Basel Committee on Banking Supervision (BCBS) taken last December regarding completion of the capital framework known as Basel III, which complements the initial phase of reforms agreed by supervisory and regulatory authorities in response to the financial crisis.

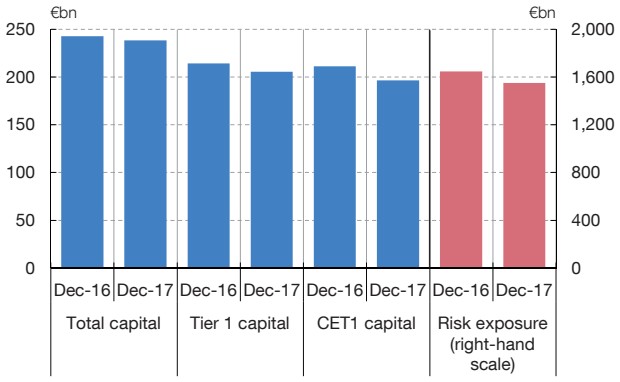
7 The ratios take into account the gradual transitional adjustments designed to facilitate the progressive implementation of Basel III. The implementation schedule establishes that, in general, in 2017 80% of deductions will be deducted from common equity, while the remaining 20% will be deducted from Additional Tier 1 capital.

8 This reduction is partly due to the resolution of Banco Popular Español, as well as the effect of the reduction in transitional adjustments.

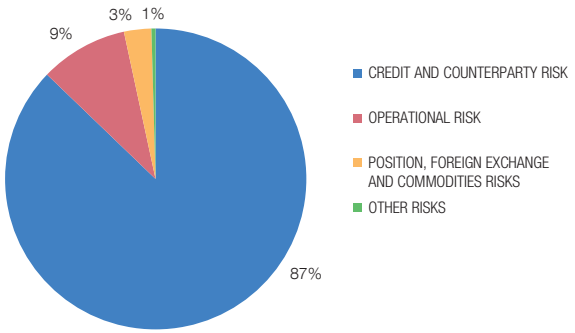
BREAKDOWN OF OWN FUNDS AND RISK-WEIGHTED ASSETS
Deposit institutions. December 2017

CHART 2.26

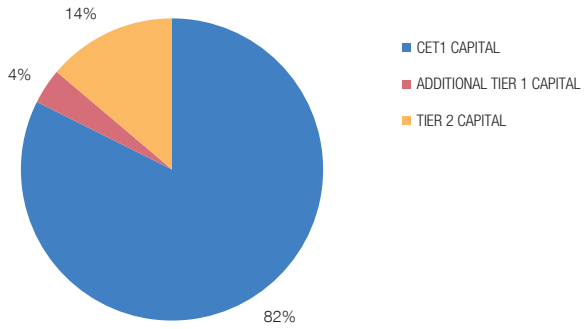
A LEVELS OF CAPITAL AND RISK EXPOSURE



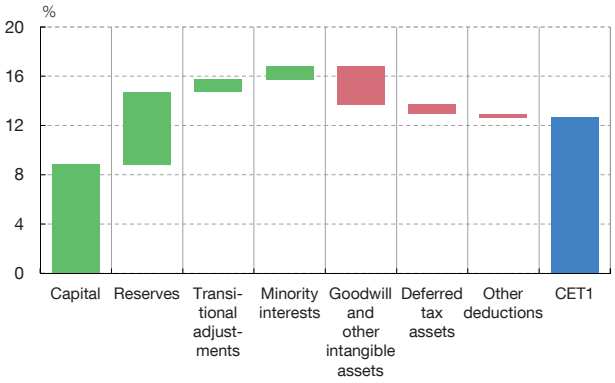
B BREAKDOWN OF RISK-WEIGHTED ASSETS



C BREAKDOWN OF OWN FUNDS



D BREAKDOWN OF CET1 RATIO AS % OF RWAs



SOURCE: Banco de España.

Common Equity Tier 1 constitutes the bulk of the sector's own funds and the majority of CET1 is in the form of capital instruments

As regards the structure of own funds, in 2017 there was a slight recomposition deriving from the bigger drop in Common Equity Tier 1 than in Additional Tier 1 capital and Tier 2 capital. Notwithstanding these patterns in 2017, CET1 continued to account for the vast majority (82%) of the Spanish banking sector's own funds (see Chart 2.26.C), while Tier 2 capital accounted for 14% and Additional Tier 1 capital (which is included in the calculation of Tier 1 capital but not in that of CET1) accounted for just 4% of own funds.

Chart 2.26.D gives an itemised breakdown of CET1, the main component of own funds, in terms of RWAs. It can be seen that capital instruments comprise more than half of the eligible components of CET1. Reserves constitute the second most important eligible item (35%), such that capital and reserves make up over 85% of the eligible components of CET1. Finally, minority interests (6%) and transitional adjustments (6%) complete the eligible components.

The published results of the EBA's latest 2017 transparency exercise, with reference dates 31 December 2016 and 30 June 2017, for a sample of 132 banks across 25 countries of the European Union (EU) and the European Economic Area (EEA), give continuity to the analysis conducted in previous editions of the FSR relating to credit exposures and risk-weighted assets (RWAs).

This Box analyses the change, between December 2013 and June 2017, in the composition of credit risk, the volume of credit exposures under the standardised approach (SA) and the internal ratings-based approach (IRB), and RWA densities under the IRB approach for the main portfolios (corporates, retail and secured by real estate).

For this purpose, the data of the Spanish deposit institutions that took part in the EBA's transparency and stress testing exercises were analysed, together with those of the banks of five benchmark countries. To this effect, a uniform sample of 60 banks was considered: Germany (17), Spain (13), France (10), United Kingdom (4), Italy (10) and Netherlands (6).

In general, the conclusions drawn are similar to those drawn in previous editions of the FSR. In particular, there are still significant differences from one country to another in terms of the intensity of use of the IRB approach. The differences also persist in RWA densities, measured as the ratio of the risk assessment of credit exposures to the total value of those exposures, according to the approach used (SA or IRB), especially in private sector portfolios (corporates, retail and exposures secured by real estate) and in the densities resulting from the use of internal methods in the countries analysed. These issues are studied in more detail below.

1. Composition of credit risk

Chart A shows how the composition of credit exposure by portfolio (public sector and central banks, financial institutions, corporates, retail, secured by real estate and other) has evolved for the different countries in the sample. By exposure class, portfolios of exposures to corporates and of those secured by real estate have remained at around 30% and 20%, respectively, while the portfolio of exposure to the public sector and central banks has grown

Chart A
CREDIT RISK COMPOSITION BY COUNTRY AND BY PORTFOLIO
December 2013, December 2015 and June 2017

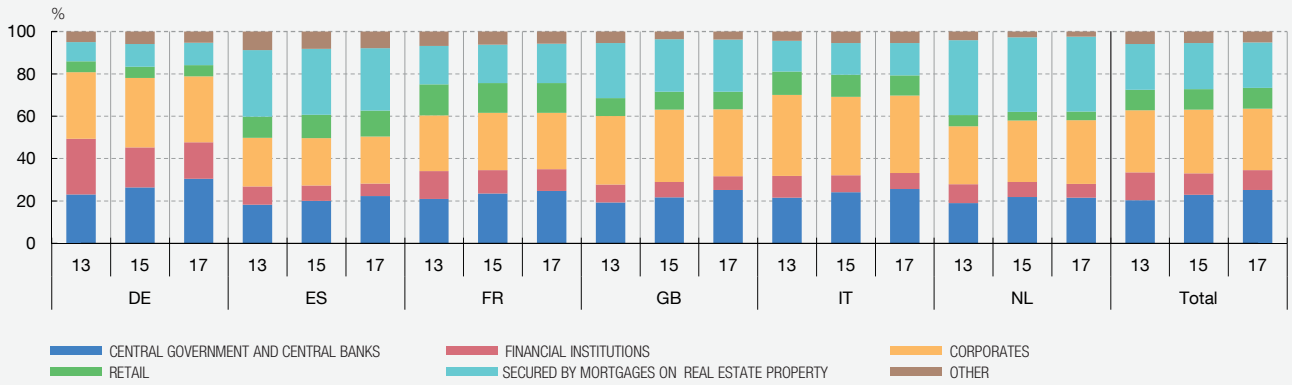


Chart B
INTENSITY OF USE OF THE IRB APPROACH. TOTAL PORTFOLIO
December 2013 and June 2017

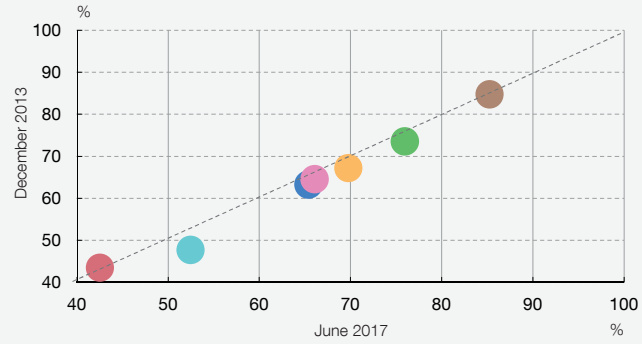
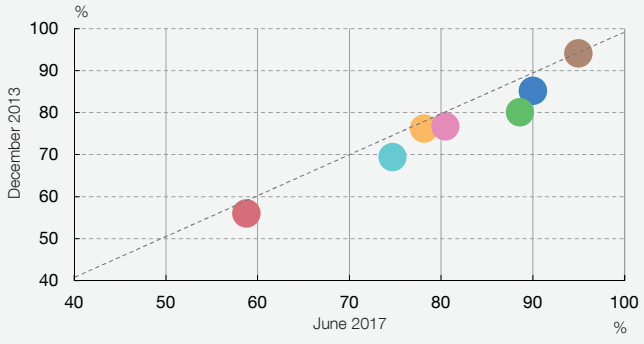


Chart C
INTENSITY OF USE OF THE IRB APPROACH. PRIVATE SECTOR PORTFOLIOS
December 2013 and June 2017



SOURCE: EBA.

(from 20% in December 2013 to 25% in June 2017) and the portfolio of exposures to financial institutions has shrunk (from 13% in December 2013 to less than 10% in June 2017).

By country, the weight of the portfolio of exposures secured by real estate stands out in the Netherlands and Spain (35% and 30%, respectively), and the weight of the portfolio of exposures to corporates stands out in Germany, France, the UK and Italy. In addition, the weight of the portfolio of exposures to financial institutions is higher in Germany than in the other countries in the sample, even though it has declined in the period analysed (9 pp between December 2013 and June 2017). The same occurs in France, where the weight of the portfolio of retail exposures is higher than in the other countries.

2. Volume of credit exposures under the IRB approach

Chart B shows the change between December 2013 and June 2017 in the volume of credit exposures under the IRB approach as a proportion of total exposures. In general, there has been no significant change in the intensity of use of the IRB approach in the countries in the sample. Spain and Italy have the lowest proportion of exposures under the IRB approach (43% and 52%, respectively, at June 2017), and the Netherlands and the UK the highest proportion (85% and 76%, respectively). The figures for France and Germany are close to the average for the countries in the sample.

Chart C shows the change in the same period in the intensity of use of the IRB approach in the private sector portfolios. In this case, the proportion of exposures under the IRB approach is higher than for the credit portfolio overall; in addition, between December 2013 and June 2017 this proportion increased slightly (by between 1 pp and 8 pp) for the countries in the sample. In this case also Spain is the country with the lowest proportion of exposures under the IRB approach (59%), compared with Germany and the Netherlands with figures over 90%.

3. RWA density under the IRB approach

Charts D and E depict the change between December 2013 and June 2017 in RWA density under the IRB and SA approaches for

Chart D
RWA DENSITY. IRB AND SA APPROACHES
TOTAL PORTFOLIO

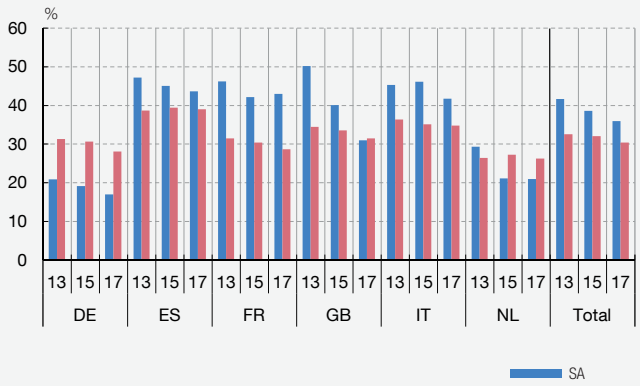


Chart E
RWA DENSITY. IRB AND SA APPROACHES
PRIVATE SECTOR PORTFOLIOS

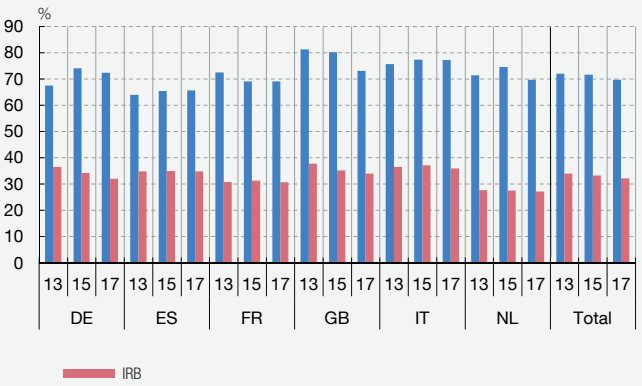
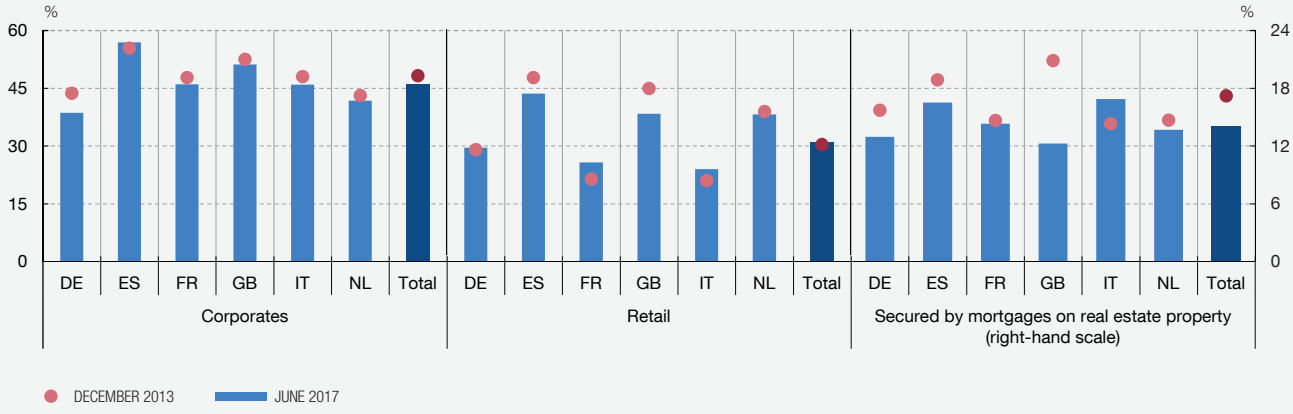


Chart F
RWA DENSITY UNDER IRB APPROACH. PRIVATE SECTOR PORTFOLIOS
December 2013 and June 2017



SOURCE: EBA.

each country in the sample, both for the total portfolio (Chart D) and the private sector portfolios (Chart E).

For the countries in the sample as a whole, considering the portfolio overall, RWA density under the IRB approach is slightly lower than RWA density under the SA approach, although the difference between the two has narrowed over the period analysed. In Germany, however, RWA density under the IRB approach is higher than under the SA approach, mainly owing to the size of the portfolio of exposures to the public sector and central banks and of the portfolio of exposures to financial institutions – both of which are low RWA density – as a proportion of the total exposures measured using the SA approach (see Chart D).

If the analysis is concentrated on the private sector portfolios (see Chart E), RWA density under the IRB approach is half that observed under the SA approach in the period analysed and for the countries in the sample as a whole. By country, the Netherlands has the lowest RWA density under the IRB approach, and Italy and Spain the highest. Also, as indicated above, the Netherlands is the country of the sample with the highest proportion of exposures under the IRB approach.

Lastly, Chart F shows RWA density under the IRB approach for the different private sector portfolios at June 2017 and December 2013. In general there has been little change, although there are some portfolios in some countries where RWA density under the IRB approach has fallen considerably, specifically exposures to corporates (in Germany), retail exposures (in the UK and, to a lesser extent, in Spain) and exposures secured by real estate (in the UK and, to a much lesser extent, in Germany and Spain). In addition, there are still major differences from one country to another in RWA density under the IRB approach, especially in retail exposures, with a difference of 20 pp between Italy (24%) and Spain (44%).

Spain is still the country of the sample with the highest RWA density under the IRB approach in portfolios of exposures to corporates (57%) and retail exposures (44%). It is also one of the countries, together with Italy, with the highest RWA density under the IRB approach in the portfolio of exposures secured by real estate (17%).

On 7 December 2017 the Basel Committee's oversight body, the Group of Central Bank Governors and Heads of Supervision (GHOS), endorsed the Basel III reforms outstanding, also known as the "post-crisis reforms". The agreement reached essentially completes the cycle of changes to the Basel regulatory framework that was set in motion in 2009 in response to the global financial crisis (see Table A).

The overall aim of the post-crisis reforms recently agreed is to help restore the credibility of the calculation of risk-weighted assets (RWAs), which are the denominator of the risk-based capital ratios.[1] More specifically, the reforms seek to reduce undue variability in RWAs, to make capital ratios more comparable and more transparent.

The areas subject to revision include the Standardised Approach (SA) and the Internal Ratings-Based approach (IRB) for credit risk, and the operational risk framework. Changes have also been made to the leverage ratio and the credit valuation adjustment (CVA)[2] capital requirement. Lastly, one of the main reform measures has been to establish an aggregate output floor on capital.

In the case of the Standardised Approach for credit risk, the changes sought to increase risk sensitivity and reduce mechanistic reliance on internal ratings. To achieve these aims, the granularity of the risk weights based on loan-to-value (LTV) has been increased, for example, and an alternative approach based on loan splitting[3] has been introduced. In the case of the IRB approach, the changes aimed to reduce complexity, improve comparability and increase robustness in modelling certain asset classes. The measures established include restrictions on the estimation of certain parameters, not permitting modelling of certain portfolios and setting floors – input floors – on estimates of parameters at the level of exposures (PD, LGD and CCFs).

1 The changes to the Basel framework published in 2010 focused, inter alia, on increasing and improving the quality of regulatory capital (the numerator of the capital ratios).
2 CVA is an adjustment to the value of derivative instruments, discounting from that value the expected loss for counterparty default risk (for instance, as the result of changes in a counterparty's credit quality).
3 Under this approach, exposures are split between the part that is considered covered by the property and the part that is not; in the case of residential mortgage exposures, a risk weight of 20% would be applied to the portion of the exposure corresponding to 55% of the property value, and the risk weight of the counterparty to the remainder of the exposure.

Table A
CHRONOLOGY OF REFORMS TO BASEL III REGULATORY FRAMEWORK

2009: Basel II.5
Higher capital requirements for the trading book, securitisations and resecuritisations

2010-11: Basel III
More and higher quality capital, new liquidity requirements; new macroprudential requirements

2014: Publication of new frameworks
Leverage ratio framework and disclosure requirements; framework for measuring and controlling large exposures; Net Stable Funding Ratio (NSFR); among others

Dec-2015: FRTB
Completion of the Fundamental Review of the Trading Book (FRTB)

2015-16: Post-crisis reforms to Basel III – Consultative documents
Review of credit risk framework: standardised approach (SA) and internal models approach (IRB); new standardised approach for operational risk (SMA); leverage ratio (e.g. G-SIB buffer); review of CVA framework

2017: Completion of post-crisis reforms

SOURCE: Banco de España.

A new Standardised Measurement Approach (SMA) has been established for operational risk, replacing the four approaches existing previously and eliminating at the same time the possibility of using internal models. Thus the Committee aims to reduce the unwanted variability of RWAs and to simplify the framework. Under the SMA, operational risk capital requirements are calculated on the basis of a measure of a bank's income and, at national discretion, on its historical losses.

Regarding the changes to the leverage ratio, a surcharge or buffer has been established for global systemically important banks (G-SIBs). The G-SIB buffer must be met with Tier 1 capital and has been set at 50% of the G-SIB's risk-weighted higher-loss absorbency requirements (thus, for example, if the risk-weighted higher-loss absorbency requirements amount to 1%, the leverage ratio buffer would be 0.5%).

In the case of the CVA capital requirement, the internal model has been eliminated and two new calculation approaches – the standardised approach and the basic approach – have been established. In addition, banks with low exposure to derivatives may choose to set their CVA capital requirement based on their counterparty risk requirements.

Lastly, the Committee reached an agreement on the calibration of the output floor, which is the minimum value admissible for RWAs resulting from applying internal models, calculated as a percentage of the RWAs resulting from applying the standardised approaches. The output floor has been set at 72.5%.

All these reforms will come into force in 2022. A transitional 5-year phase-in period (2022-27) has been set for the output floor: it starts at 50% of RWAs according to the standardised approach and rises by 5 pp every year except for the last year when it goes from 70% to 72.5%. In addition, at national discretion, a cap of 25% up to the end of the phase-in period may be placed on the increase in RWAs resulting from the output floor. Lastly, banks shall be required to disclose, from the start of the phase-in period, the RWAs resulting from applying the standardised approaches.

Together with the changes agreed, the Basel Committee has resolved to put back the date scheduled for implementation of the reforms to the market risk framework, from 1 January 2019 (the original date set) to 1 January 2022. The Committee trusts that this postponement will allow the introduction of the market risk framework to coincide with the start of the implementation of the post-crisis reforms, also allowing banks to develop the systems necessary to apply the framework, and in addition that it will allow the Committee to complete the changes being made on specific aspects of the framework.

Parallel with the announcement of the agreement on the post-crisis reforms, the Basel Committee published a discussion paper on the regulatory treatment of sovereign exposures. The Committee noted that to date it has not reached a consensus to make any changes to the current treatment of sovereign exposures; in consequence, the debate is still open.

The Basel Committee, when it announced the reforms, also reaffirmed the need for full, timely and consistent implementation of all the elements of the reforms, including the market risk framework. In addition, the Committee has established a programme for evaluation of the post-crisis reforms and has announced that it will actively participate in the initiatives of the Financial Stability Board (FSB) for evaluation of the effects of the reforms.

3.1 Analysis of systemic vulnerabilities

The map of indicators of systemic vulnerabilities[1] at December 2017 shows that these have remained practically stable since the latest FSR (see Chart 3.1).[2]

The forecast for systemic vulnerabilities remains stable

The map reveals a reduction in vulnerabilities relating to macroeconomic imbalances to a level considered normal or denoting an absence of vulnerability. This improvement reflects the positive changes in the indicators of this category, particularly the balance of the current and capital account, which is the variable with a greater weighting in the indicator used, as it is the most capable of anticipating systemic bank crises in the sample used. In any event, the risks associated with the current high indebtedness of the public and external sector of the Spanish economy should not be underestimated.

Vulnerabilities relating to credit and liquidity remain at levels free of warning signs...

Vulnerabilities relating to credit and liquidity also remain at levels free of warning signs. In the case of credit, this is mainly because positive growth rates are still not seen. Thus, in the absence of credit growth, the likelihood of vulnerabilities building up is very low. Nonetheless, the fall in credit is easing progressively, as explained in Chapter two.

... while those relating to financial markets and concentration are at low and medium levels, respectively

Vulnerabilities in the financial markets remain low, owing to the relative stability seen during the last half of the previous year. Finally, the concentration of credit portfolios also remains stable and at a medium level. On the one hand, credit exposure to sectors more directly related to the last crisis, such as construction and real estate activities, continues declining. On the other, the more structural factors, such as the weight of credit to large-scale operations, remain stable.

The heat map shows the performance of the indicators over time and the intensity of the warning signs analysed

Chart 3.2 shows the changes over time in the vulnerabilities of Chart 3.1 through a heat map. The heat map permits observing both the historical performance of the indicators used and the intensity of the warning signs relating to the vulnerabilities analysed. Intensity rises as the tone becomes redder, while green represents a normal situation.

The upper part of the heat map includes potential forward-looking warning signs

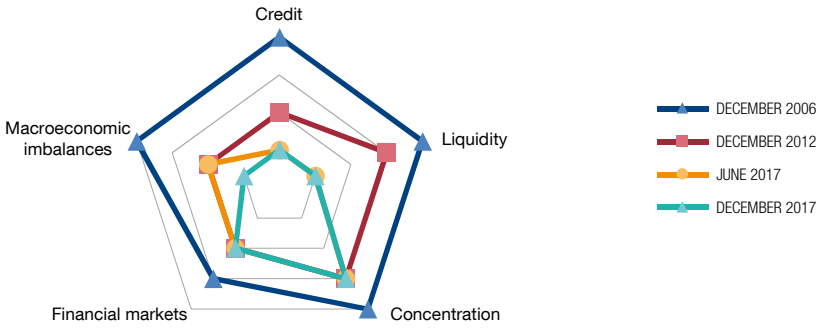
The upper part of Chart 3.2 displays the same categories considered in Chart 3.1, with an additional breakdown by sub-category showing the changes in vulnerabilities with greater granularity. All the lines of this upper block in the chart refer to potential vulnerabilities. In other words, they are based on indicators that provide forward-looking warning signs of situations possibly deriving in specific problems in the financial system and the real economy.[3] Thus, most of the categories showed signs of high vulnerability (red) during the periods prior to the recent crisis, whereas once the crisis started, the vulnerabilities decreased gradually.

1 This tool of the Banco de España draws together the information from more than one hundred indicators of potential risk for the financial system and effective conditions of the real economy and the banking sector in Spain. The definitions of the main categories correspond with those established in Recommendation ESRB/2013/1 of the European Systemic Risk Board on intermediate objectives and instruments of macroprudential policy.

2 The map includes a set of indicators that are classified into five categories. The credit category groups indicators on the changes in and degree of imbalance of total and bank credit to households, non-financial corporations and the entire non-financial private sector; the debt burden of these sectors; the interest rates on new credit and on outstanding balances; and the changes in and imbalances of housing prices. The liquidity category includes indicators on bank and market liquidity. The concentration category includes indicators on total and bank credit concentration in different sectors and by type of borrower. The financial markets category groups indicators on correlations and interconnectedness between banking institutions and on systemic stress in different markets. The macroeconomic imbalances category includes indicators on external debt, the public sector and the current account balance.

3 The contribution of the individual indicators to the warning signs is based on their historical predictive capacity.

HEAT MAP LEVELS (a) CHART 3.1



SOURCE: Banco de España.

a A concentric line closer to the centre of the chart refers to a normal situation, while the higher the risk level, the greater the distance to the centre.

Most of the categories in the heat map are in a situation free of warning signs

The credit-related categories are the ones that reached the levels free of warning signs sooner (between 2015 and 2016). At the other extreme, the macroeconomic imbalances category only reached that level at end-2017.

The situation of the economy and the financial system is at a low risk level, reflecting the improvement that took place in 2017

In the lower part of Chart 3.2, the bottom row shows the situation of the economy and the financial system over time. The indicators included in this row do not seek to capture vulnerabilities that could derive in future problems, but rather the problems that have materialised at each moment in time. As can be seen, green is predominant during the expansionary phase of the economy. Following the outbreak of the crisis, the vulnerabilities of the first block soon fed through to the economic and financial situation, moving to red levels. Compared with the last FSR, a stable situation at a low level has been maintained following the improvement in the economic situation in 2017.

The most recent data available confirm a low level of vulnerabilities overall

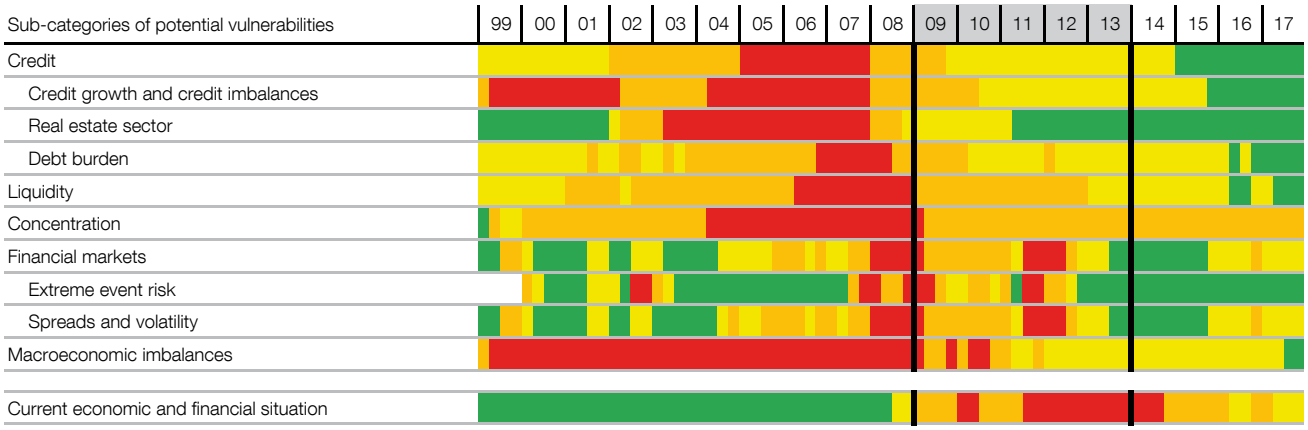
The update of the heat map at December 2017 confirms the situation of stability in the last quarters. Vulnerabilities remain low in the sub-categories relating to changes in and imbalances of credit, prices in the real estate sector, the debt burden of the non-financial private sector, liquidity and extreme events in the financial markets. As also seen in Chart 3.1, the macroeconomic imbalances category decreases its vulnerability because the real economy indicators have continued to improve during the second half of the year. In general, the map of indicators shows that the Spanish economy is currently situated in a low phase of the financial cycle, together with a gradual economic recovery. This situation is likely to continue over the upcoming quarters and, accordingly, the indicators are likely to continue reflecting stability as regards the absence of warning signs of cyclical vulnerabilities.

Analysis of the vulnerabilities does not advise the activation of macroprudential instruments

Against this background, the analysis of vulnerabilities does not advise, for the moment, activating cyclical macroprudential instruments. This coincides with the assessment published quarterly by the Banco de España of the indicators which inform the decisions regarding the countercyclical capital buffer (CCyB), the rate of which applicable to domestic credit exposures has remained at 0% since its implementation on 1 January 2016.[4] To set the CCyB the Banco de España uses a framework of "guided discretion" under which it analyses the information from quantitative indicators in combination with an analysis of qualitative information and the institution's expert judgement.

4 "The Banco de España maintains the countercyclical capital buffer at 0%", Banco de España press release of 23 March 2018.

HEAT MAP BY SUB-CATEGORY (a) CHART 3.2



SOURCE: Banco de España.

a The colour scheme identifies four levels of risk: i) green denotes a normal, risk-free situation, ii) yellow indicates low risk, iii) orange is medium risk, and iv) red is high risk. The shaded interval denotes the period of the last crisis. Some indicators as at December 2017 are based on provisional information.

The level of the credit-to-GDP gap advises maintaining the CCyB at 0% in Spain

The reference among the quantitative indicators analysed is the credit-to-GDP gap, defined as surplus credit in terms of GDP relative to its long-term trend estimated using statistical procedures. This is the indicator proposed by the Basel Committee on Banking Supervision (BCBS) and it has been incorporated into current European and Spanish legislation to guide the setting of the CCyB through a Recommendation by the European Systemic Risk Board.[5] Based on data as at September 2017, the gap stands at –50.3 pp, far below the level that would advise the activation of this instrument.[6] Chart 3.3.A shows the changes in the gap level, in addition to the credit-to-GDP ratio and its long-term trend. It shows that in the last two quarters the credit-to-GDP ratio decreased proportionally more than the trend component, with the gap growing once again towards more negative values.

Foreseeably, the credit-to-GDP gap will only start to narrow when credit posts positive growth rates

This increase in the negative change in the gap is analysed in Chart 3.3.B, which breaks down the change in its various components (GDP, credit to households and to non-financial corporations, and long-term trend). It is seen that, while the trend component continues contributing to closing the gap, both credit and GDP have contributed negatively to widening it. On one hand, the numerator of the ratio decreased because credit to households and to non-financial corporations continued posting negative growth rates. On the other, the positive growth of GDP has contributed to increasing the ratio's denominator. As can be seen, this joint effect of a decrease in the credit-to-GDP ratio was greater than the decrease in the trend, which widens the gap. The trend component will likely continue decreasing as it starts to incorporate the prolonged fall in credit during the crisis years. However, the gap will only begin to narrow when credit starts to post positive growth rates above the GDP.

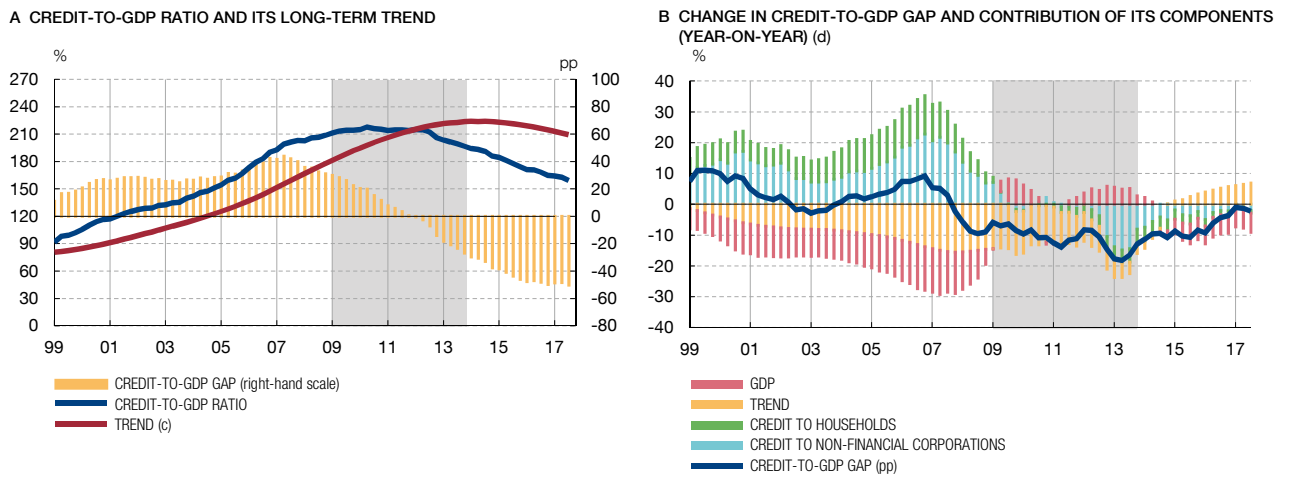
The current values of the complementary indicators used to calibrate the CCyB are consistent with its being held at 0%

The set of quantitative indicators which the Banco de España monitors as guidance for setting the CCyB comprises, in addition to the credit-to-GDP gap, other indicators related to credit growth, changes in housing prices, debt service and the current account balance. The current values of all the indicators are fully consistent with the signals given by the credit-to-GDP gap, as no warning signs are seen in any of them. Therefore the analysis of

5 Directive 2013/36/EU (CRD IV), Law 10/2014, Royal Decree 84/2015, Banco de España Circular 2/2016 and Recommendation ESRB/2014/1.

6 The Banco de España, in accordance with the Guidance of the BCBS for national authorities operating the CCyB, considers a level of 2 pp as the reference for a possible activation of the CCyB.

CREDIT-TO-GDP GAP (a) (b) CHART 3.3



SOURCE: Banco de España.

a The shaded area shows the last period of systemic banking crisis (2009 Q1-2013 Q4).
b The credit-to-GDP gap is the difference between the credit-to-GDP ratio and the trend.
c The trend in these charts is calculated using a one-tailed Hodrick-Prescott filter (smoothing parameter equal to 400,000).
d The debt securities issued by the non-financial corporations sector are omitted in the chart (their size is residual), although they are included in the calculation of the credit-to-GDP gap.

this complementary group of indicators is consistent with the decision to maintain the CCyB at 0%.

3.2 Systemically important institutions

Five domestic systemically important institutions have been identified for 2018...

In November 2017 the Banco de España published the annual update of the list of Spanish global systemically important institutions (G-SIIs) and other systemically important institutions (O-SIIs). Pursuant to the regulations and timelines established for this purpose, the Banco de España identified the O-SIIs for 2018 and the G-SII for 2019 and set the additional capital requirements to be applied to these institutions in order to mitigate or prevent the negative externalities arising from the size and complexity of their activities.[7]

...one of which is also of global systemic importance

Five institutions were designated as O-SIIs (Santander, BBVA, CaixaBank, Sabadell and Bankia), one of which also has the status of G-SII, as in previous years (Santander). The capital requirements for global and national systemic importance are not additive; instead, the highest of the two capital requirements is applied. As regards the previous list of O-SIIs,

SYSTEMICALLY IMPORTANT INSTITUTIONS IN 2018 TABLE 3.1

Institution	Designation for 2018	Required in 2018 (%)	Required in 2019 (%) (a)
Santander	G-SII and O-SII	0.75	1.00
BBVA	O-SII	0.5625	0.75
CaixaBank	O-SII	0.1875	0.25
Sabadell	O-SII	0.1875	0.25
Bankia	O-SII	0.1875	0.25

SOURCE: Banco de España.

a Buffers for 2019 would be applicable if the corresponding institution were to keep its O-SII status, and also its current classification, in the 2018 revision.

7 "Banco de España updates the list of systemically important institutions and sets their capital buffers", Banco de España press release of 24 November 2017.

Banco Popular Español no longer has O-SII status as a result of its resolution and subsequent integration in the Santander group in June 2017.

Table 3.1 includes the list of institutions identified as systemic and the related capital requirements applicable up to 2019, when the three-year period of transition for implementation of this macroprudential instrument ends. The capital requirements are expressed in terms of Common Equity Tier 1 capital divided by the total risk-weighted assets on a consolidated basis.[8]

8 For more information on the methodologies for identification of systemically important institutions and setting of the associated capital buffers, see Box 3.1 of the May 2017 Financial Stability Report.

4 ANNEX

CONSOLIDATED BALANCE SHEET
DEPOSIT INSTITUTIONS

ANNEX 1

Assets	Dec-17	Change Dec-17/Dec-16	Relative weight Dec-16	Relative weight Dec-17
	€m	%	%	%
Cash and balances with central banks	248,007	36.9	5.0	7.0
Loans and advances to credit institutions	175,784	-1.4	4.9	5.0
General government	113,872	-5.8	3.4	3.2
Other private sectors	2,016,111	-1.9	57.1	57.0
Debt securities	495,385	-8.1	15.0	14.0
Other equity instruments	48,389	10.8	1.2	1.4
Investments	25,489	-29.4	1.0	0.7
Derivatives	140,589	-18.8	4.8	4.0
Tangible assets	48,179	-9.2	1.5	1.4
Other	227,352	2.9	6.1	6.4
TOTAL ASSETS	**3,539,157**	**-1.7**	**100.0**	**100.0**
Memorandum items				
Financing to private sector	2,100,284	-2.5	59.8	59.3
Financing to general government	472,426	-8.9	14.4	13.3
Total NPLs	116,086	-20.9	4.1	3.3
Total NPL ratio	3.8	-99 (b)		

Liabilities and equity	Dec-17	Change Dec-17/Dec-16	Relative weight Dec-16	Relative weight Dec-17
	€m	%	%	%
Balances from central banks	231,172	19.4	5.4	6.5
Deposits from credit institutions	291,366	-5.8	8.6	8.2
General government	93,729	9.1	2.4	2.6
Other private sectors	1,959,107	-0.4	54.6	55.4
Marketable debt securities	383,045	-11.3	12.0	10.8
Derivatives	136,492	-18.3	4.6	3.9
Provisions for pensions, tax and other	33,738	-7.2	1.0	1.0
Other	147,850	7.7	3.8	4.2
TOTAL LIABILITIES	**3,276,499**	**-1.6**	**92.4**	**92.6**
Memorandum items				
Eurosystem net lending (a)	170,541	21.9	3.9	4.8
Own funds	266,073	4.7	7.1	7.5
Minority interests	25,425	-32.0	1.0	0.7
Valuation adjustments relating to total equity	-28,840	61.6	-0.5	-0.8
TOTAL EQUITY	**262,658**	**-4.0**	**7.6**	**7.4**
TOTAL LIABILITIES AND EQUITY	**3,539,157**	**-1.7**	**100.0**	**100.0**

SOURCE: Banco de España.

a Difference between funds received in liquidity-providing operations and funds delivered in absorbing operations. December 2017 data.
b Difference calculated in basis points.

CONSOLIDATED INCOME STATEMENT
DEPOSIT INSTITUTIONS

ANNEX 2

	Dec-17		Dec-16	Dec-17
	€m	% Change Dec-17/Dec-16	% ATA	% ATA
Financial revenue	110,582	-1.9	3.10	3.09
Financial costs	39,578	-10.6	1.22	1.10
Net interest income	71,004	3.7	1.89	1.98
Return from capital instruments	1,303	-22.5	0.05	0.04
Net financial income	72,306	3.0	1.93	2.02
Share of profit or loss of entities accounted for using the equity method	3,760	-7.6	0.11	0.10
Net commissions	25,794	6.0	0.67	0.72
Gains and losses on financial assets and liabilities	6,317	-17.3	0.21	0.18
Other operating income (net)	-2,520	22.4	-0.06	-0.07
Gross income	105,658	1.4	2.87	2.95
Operating expenses	54,095	0.9	1.48	1.51
Net operating income	51,563	2.0	1.39	1.44
Asset impairment losses	18,334	-8.5	0.55	0.51
Provisioning expense (net)	5,174	-21.0	0.18	0.14
Income from disposals (net)	-2,599	-48.9	-0.14	-0.07
Profit before tax (including discontinued operations)	25,456	34.4	0.52	0.71
Net income	18,570	32.2	0.39	0.52
Memorandum item				
Income attributable to the controlling entity	15,572	44.2	0.30	0.43

SOURCE: Banco de España.

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