

FINANCIAL STABILITY REPORT

Autumn

2019

BANCO DE **ESPAÑA**
Eurosistema



FINANCIAL STABILITY REPORT AUTUMN 2019

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MAIN RISKS TO THE STABILITY OF THE SPANISH FINANCIAL SYSTEM




MAIN RISKS TO THE STABILITY OF THE SPANISH FINANCIAL SYSTEM

The assessment of the balance of risks to the stability of the Spanish financial system has worsened somewhat in the past six months owing, in particular, to the downward revision of the global economic outlook. Since the publication of the last *Financial Stability Report (FSR)*, growth projections have been scaled down in most economies. Indeed, the increase in global GDP this year is expected to be the lowest since the international financial crisis. Moreover, the balance of risks to this growth is tilted to the downside. This flatter economic activity may have implications both for financial and real asset valuations and for agents' decisions.

Against this background, the main factors of risk to the stability of the Spanish financial system are the following (Table 1):

Table 1

RISK FACTORS (a)

1	Global economic slowdown and geopolitical uncertainty. The economic slowdown is affecting Europe and the emerging economies more sharply and, along with high geopolitical uncertainty, might entail an increase in risk premia that reduces the value of financial assets. Moreover, it might also weigh down agents' income and raise their projected debt levels, thereby leading to revised consumption and investment plans.	
2	Low profitability of financial institutions. Financial institutions' profitability will be under additional pressure owing to the economic slowdown and, therefore, to the prospect that interest rates may hold at very low and even negative levels for longer than expected.	
3	Legal risk. Spanish deposit institutions face, with varying degrees of intensity, a legal risk arising from the potential consequences of the outcomes of legal demands against them.	

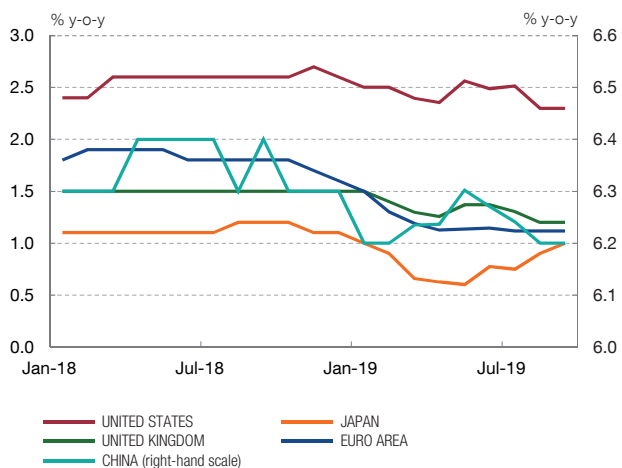
SOURCE: Banco de España.

a The risks which appear in this table are calibrated using three colours: yellow indicates low risk, orange, medium risk, and red, high risk. Consequently, at present the three risks are at a medium level. The time horizon for which these risks are defined is set by the FSR's frequency, i.e. half-yearly. For each risk level, the arrows indicate whether risk has recently increased, held stable or diminished. Reclassification compared with a previous FSR of a risk factor to a different level (change of colour) involves posting a stable-trending arrow.

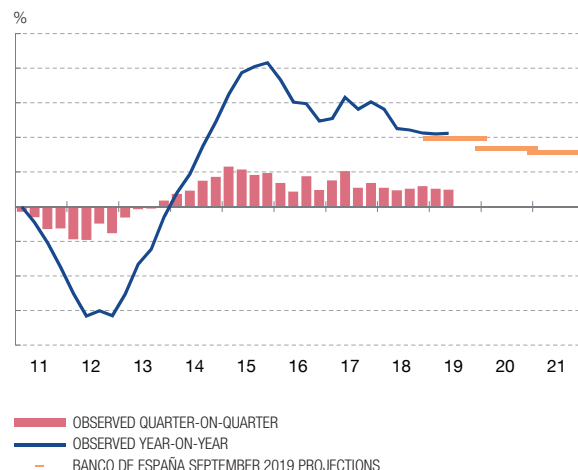
1 Global economic slowdown and geopolitical uncertainty.

One of the factors of risk identified in the previous FSR, relating to the slowdown in global economic activity, has already begun to materialise. A good number of the high-frequency conjunctural indicators are showing signs of substantial weakness, foretelling the entry into technical recession of some large economies and giving rise to a downward revision of growth forecasts.

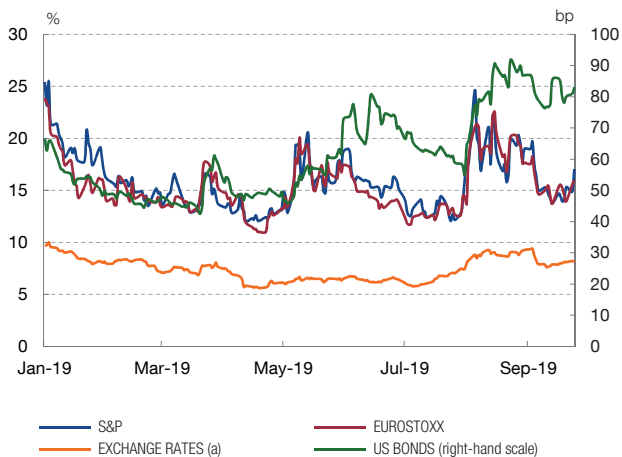
1 CONSENSUS FORECASTS FOR 2019



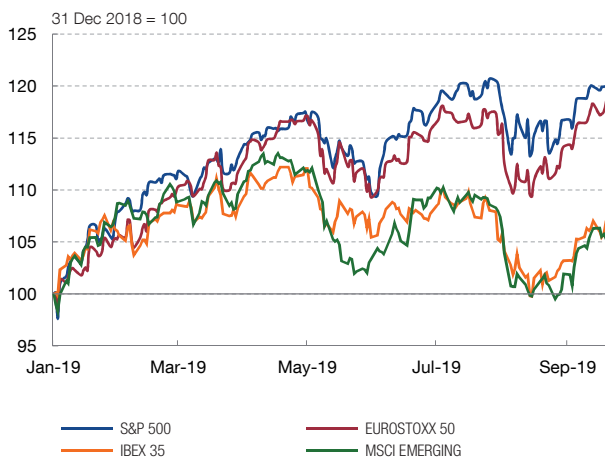
2 SPAIN. CHANGE IN GDP



3 VOLATILITIES



4 STOCK MARKET INDICES



SOURCES: Thomson Reuters Datastream, Consensus, INE and Banco de España.

a Average of 3-month volatilities for USD/EUR, USD/GBP and JPY/USD.

The revision of economic activity forecasts is across the board, but it has particularly impacted Europe, where Germany's export sector is showing notable weakness, and the emerging economies (Chart 1). Spain has also been affected by these downward revisions to the growth outlook (Chart 2).

Global geopolitical uncertainty remains high and is also starting to weigh on agents' decisions, especially those requiring a longer timeframe for realisation, such as investment.

The causes of this geopolitical uncertainty remain largely in place, and those that have disappeared have been replaced by other, fresh sources. Firstly, the US-China trade tensions continue,

a major cause of which is leadership in technological sectors. Further, the maximum tariffs that can be applied to certain products are being revised, potentially affecting US-European trade relations. Secondly, the risk of a no-deal Brexit still persists, despite the additional prorogue approved by the European Council. Tensions in the Middle East also seem to be intensifying. Conversely, the forming of a new government in Italy in September should contribute to stabilising the country's fiscal situation. Finally, in Spain, a new government could not be formed following the last elections; accordingly, fresh elections have been called for 10 November, prolonging the uncertainty over economic policy formulation. Further compounding this has been the impact of the latest developments in Catalonia.

To date, the international financial markets' reaction to the rise in global uncertainty has been contained, and has not taken the form of higher risk premia and lower asset prices (Charts 3 and 4). This has, partly, been the result of the resolute action by many central banks, which eased monetary conditions even further in the face of the scant convergence of inflation towards its objective and/or the implications of global developments for the growth outlook. In the euro area, monetary accommodation has been accompanied by additional measures to smooth bank funding (new more favourable conditions in the new series of quarterly refinancing operations, namely TLTRO III) and to mitigate the impact on profitability (a two-tier system for the remuneration of the reserves banks hold at the central bank).

In this respect, the economic slowdown and the potential materialisation of geopolitical risks might have adverse effects on financial stability through various channels. First, agents might be led to reassess their perception of risk, prompting a rise in the associated premia that could cause an acute and lasting adjustment in the prices of the financial assets affected, giving rise to losses in all agents' portfolios, including deposit institutions. Second, households' and non-financial corporations' income flows would decline, through lower employment creation and an easing in wage earnings (households) and a reduction in profits (companies). This means that the debt levels of both groups of agents might ultimately be higher than expected, with a further negative impact on future consumption and investment. Through this channel, which will gain in significance if the adverse situation persists over time, financial intermediaries' activity would also be affected, essentially the quality of their assets and the demand for financial services,

including credit. As a result, deposit institutions would encounter greater difficulties in further strengthening their balance sheets and, potentially, their solvency might worsen.

2 Low profitability of financial institutions. In the first half of 2019 Spanish deposit institutions saw their consolidated net income fall by around 11% compared with the same period a year earlier. A more detailed analysis shows that much of the decline is due to the lower gains on financial assets and to the increase in extraordinary operating expenses, meaning that recurrent operating income did not decline so much. Moreover, net interest income increased slightly (Chart 5). Indeed, the level of profitability observed in June 2019 is one of the highest of the post-crisis period, above the European average, although it has still not exceeded the cost of equity (COE).

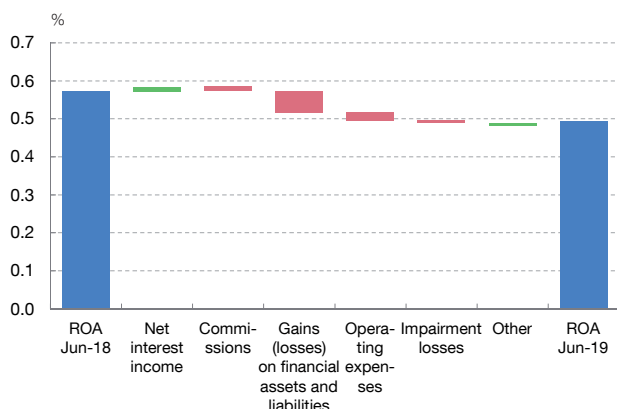
Looking ahead, the downward revision of the growth and inflation outlook and, as a result, the stronger prospect that interest rates will hold for longer at very low or even negative levels, will pose a notable challenge for the recovery of profitability levels in step with the COE. In fact, the markets have in recent months lowered their expectations about banks' profit growth.

Lower profitability hampers the organic generation of capital. However, institutions have slightly raised their top-quality capital ratios in the recent period, reversing the downward trend of the past two years. Moreover, the stress tests conducted by the Banco de España suggest that their resilience in the face of the risks identified materialising has increased and is appropriate at the aggregate level. In any event, while largely exceeding regulatory requirements, the relatively low ranking of Spanish institutions Europe-wide and the future roll-out of the last part of the Basel III reforms advise further perseverance in their shoring up of solvency.

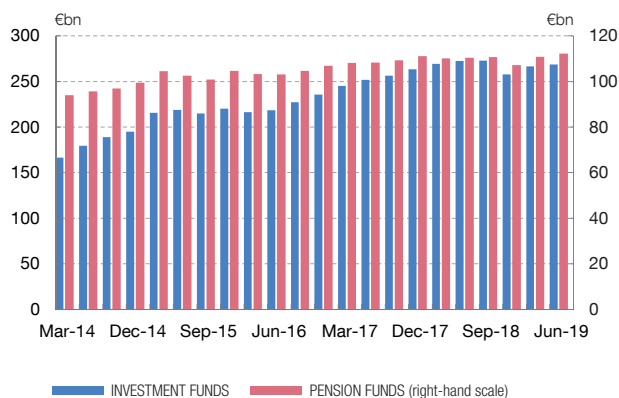
On the favourable side, the lower cost of financing that the context of very low interest rates entails will contribute to facilitating deposit institutions' issuance of eligible liabilities to comply with the MREL (minimum requirement for own funds and eligible liabilities), which is designed to avoid the use of public funds in the resolution of non-viable institutions.

The risks around profitability do not only affect the income statements of deposit institutions but also those of other financial

5 BREAKDOWN OF THE CHANGE IN PROFIT (a)
Consolidated profit attributable to the controlling entity as a percentage of ATAs



6 NET ASSET VALUE OF INVESTMENT FUNDS AND PENSION FUNDS



SOURCES: Banco de España, Inverco and CNMV.

a The red (green) colour of the bars indicates a negative (positive) contribution by the related item to the change in the consolidated result for June 2019 compared with June 2018.

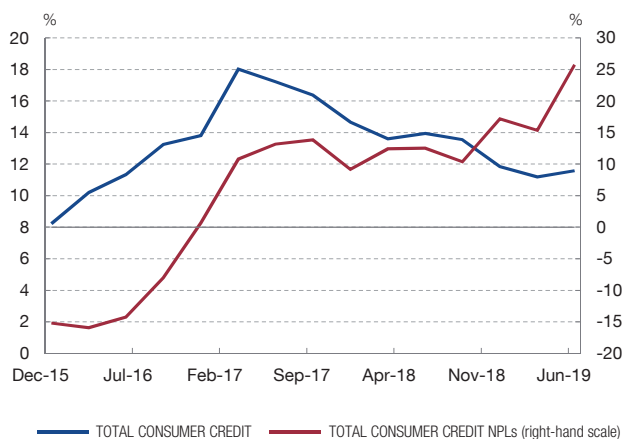
institutions, such as investment and pension funds and insurance companies, which have gained in importance in the financial sector post-crisis (Chart 6). This is especially so when these institutions guarantee a specific profitability for their customers and also if their operational funding requirements are not sufficiently covered.

Against this background, financial intermediaries may have incentives to offset the low profitability of their normal business with greater risk-taking; accordingly, greater watchfulness will be required to prevent the build-up of systemic risks.

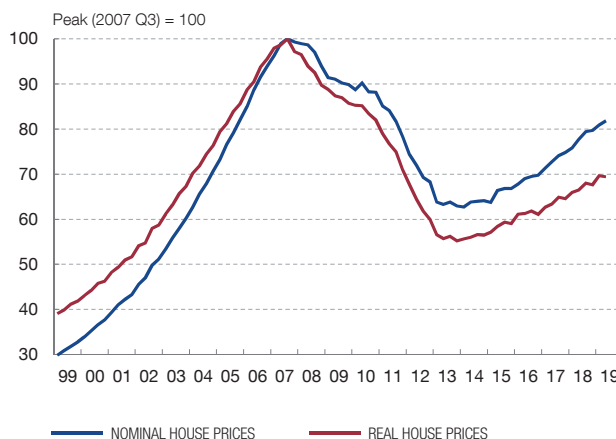
3 Legal risk. As noted in the previous FSR, the cost for Spanish deposit institutions of legal processes relating to certain mortgage agreement clauses has been high. And, at the same time, other significant legal processes are still to be resolved. In particular, the Court of Justice of the European Union (CJEU) is expected in the coming months to unveil its response to the pre-trial questions raised in relation to the use of the mortgage loan benchmark index (IRPH by its Spanish abbreviation).

In this setting, banks should continue to strive to provide their customers with financial products suited to their needs and capacities, and to furnish the relevant information on their products and services clearly and transparently. The recent regulatory changes in the mortgage market might help further this objective. It should be borne in mind that reputation and customer confidence are essential factors for developing banking business.

7 RATES OF CHANGE OF CONSUMER CREDIT AND NPLs IN DEPOSIT INSTITUTIONS AND SLIs



8 HOUSE PRICES



SOURCES: Banco de España and INE.

This FSR includes additional elements of analysis related to the risks to financial stability. In particular, it analyses potential factors of vulnerability, such as the level of debt and the financial position of the non-financial private sector and of the public sector. It further looks at developments in the real estate market, solvency and liquidity stress tests for the banking sector and systemic risk indicators. Lastly, it describes the macroprudential policy stance, which is the main tool for mitigating the potential impact of the risks identified.

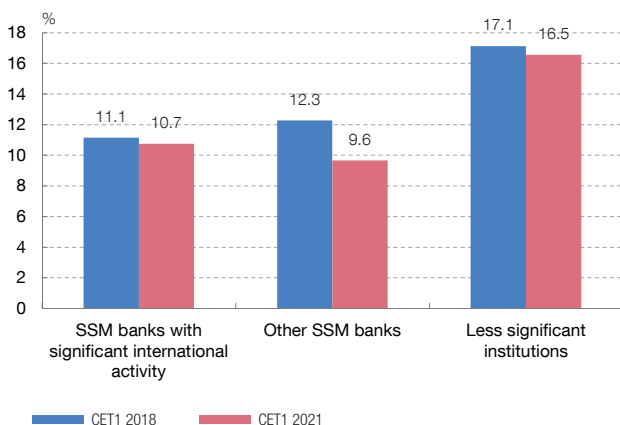
Non-financial private sector debt ratios have continued to decline, standing below average euro area levels. Indeed, the non-financial private sector debt ratio relative to GDP stood at 132%, 5 pp down on a year earlier and 4 pp below the euro area average. This deleveraging process has been generalised across both households and firms, although in both sectors there continue to be vulnerable groups with high levels of debt. In this respect, consumer credit grew in June 2019 at a year-on-year rate of around 12%, and non-performing consumer loans at 26%, raising the NPL ratio slightly to 5.6% (Chart 7).

In the real estate sector, lending standards for household loans broadly continue to be prudent and the indicators of activity appear to be showing signs of slowing. However, prices continue to grow at a high pace (Chart 8), meaning its future course will require continued monitoring.

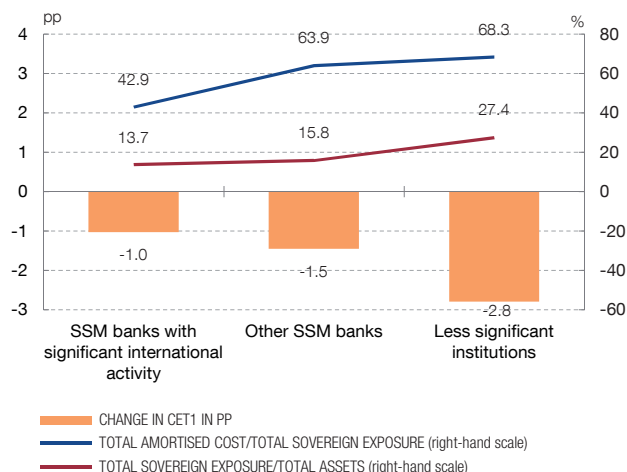
Public sector debt is holding at a high level and the Spanish economy's net international investment position remains significantly negative. That is a source of vulnerability ahead of any future changes in sentiment on international financial markets or of a downturn in the macroeconomic situation.

The stress tests conducted by the Banco de España this year on the banking sector show adequate resilience at the aggregate level. The adverse

9 IMPACT ON CET1 FL RATIO UNDER ADVERSE SCENARIO



10 SENSITIVITY TO THE ACCOUNTING CLASSIFICATION OF SOVEREIGN EXPOSURE UNDER THE ADVERSE SCENARIO (a)



SOURCE: Banco de España.

a The percentage of the sovereign exposure classified in portfolios under the amortised cost criterion (i.e. which is not classified under the fair value criterion) is, for December 2018, presented for each group of institutions, as is the sovereign exposure/total assets ratio. For the 2019-2021 horizon, the chart depicts the additional consumption expressed in pp of the CET1 ratio that would arise under the adverse scenario were the sovereign exposure under the amortised cost criterion to be reclassified under the fair value criterion.

macroeconomic scenario used on this occasion for the stress tests involves a slight increase in severity relative to the test the previous year. Notwithstanding, the reduction in banks' capital (Chart 9) is somewhat less than in 2018. This is essentially due to the fact that the institutions' opening balance sheets are in a better position, with lower NPL ratios and a lower volume of foreclosed assets. In the adverse scenario the exercise also shows limited capacity on the part of the banks to generate operating income and significant deleveraging. On this occasion there was an additional sensitivity test under the adverse scenario, subjecting the sovereign exposures at amortised cost (i.e. not subject to changes in valuation based on market price developments) to the same stress as the sovereign exposures at fair value (Chart 10). Capital consumption in this case increases substantially, revealing the significance of the risk associated with the decline in the valuation of certain assets.

The Banco de España has kept its macroprudential policy stance towards systemic risks unchanged. The analysis set out in the FSR endorses holding the Countercyclical Capital Buffer (CCyB) at 0%. However, under the baseline projection scenario several benchmark indicators would exceed the activation thresholds in the first half of 2021. Were this macroprudential instrument activated, the credit institutions affected would have 12 months in which to comply with the requirement. Nonetheless, this diagnosis is conditional on there being no deviations from the baseline projections scenario. At present there are numerous factors of downside risk (possibility of a no-deal Brexit, the stepping up of trade tensions and a delay in the resumption of economic growth in the euro area). Their potential materialisation would involve a change in this assessment.

1

RISKS LINKED TO THE MACROFINANCIAL ENVIRONMENT

1 RISKS LINKED TO THE MACROFINANCIAL ENVIRONMENT

The global economy continued to decelerate in 2019 against a background of high geopolitical uncertainty (trade disputes, possibility of a no-deal Brexit, tension in the Middle East, etc.), with Europe and the emerging economies the most affected. This has led to a downward revision of the growth outlook, and the Spanish economy has been no exception to this pattern. The slowdown in activity and the absence of inflationary pressures have led to an easing of monetary policy in the United States and in the euro area. There has been some upturn in volatility on the financial markets, but asset prices have held at historically high levels, especially following the monetary policy reaction. Activity in the Spanish real estate market has slowed to some extent in 2019 while mortgage lending conditions have tightened slightly. There has also been a deceleration in the flow of financing to the non-financial sector, whose net asset position continued to improve, albeit at a slower pace and with certain household and corporate sectors in a more fragile position.

1.1 Macroeconomic environment

1.1.1 Key systemic countries

The contraction in global trade deepened against the backdrop of growing trade tensions, which are one of the main risks to the world economy. Global trade in goods contracted in Q2 more sharply than in Q1, declining at a quarterly rate of 0.8% and weighed down by the worsening of the trade disputes between the United States and China (Chart 1.1). The US imposition of additional tariffs on European products is also raising trade tensions. Uncertainty over the course of the conflict remains very high, but should the measures announced become effective, the impact on global growth could be substantial. Other geopolitical risks have played a greater role in recent months, in particular the likelihood of a disorderly withdrawal by the United Kingdom from the European Union (Box 1.1). Tensions in the Middle East also intensified, prompting a notable but temporary rise in oil prices in September.

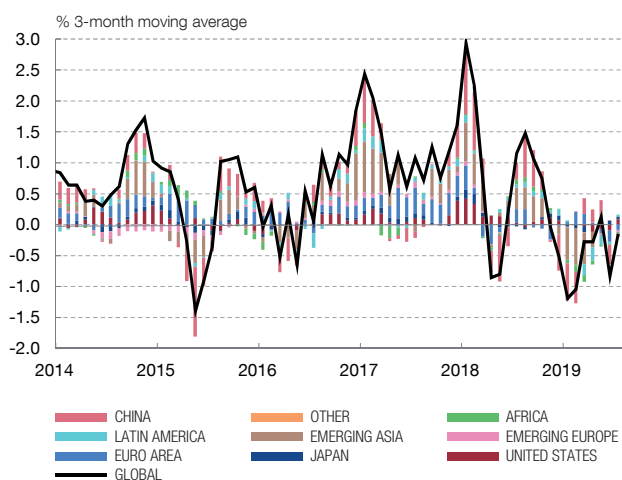
In this setting the global economy continued to move on a slowing path, in a highly uncertain setting. Global GDP growth eased further in 2019 Q2 to a year-on-year rate of 2.8%, more than 1 pp down on a year earlier (Chart 1.1). The downturn was particularly manifest in manufacturing and in the wholesale and retail trade, while the remaining services initially trended more favourably. By type of expenditure, investment weakened compared with the greater resilience of consumption. The US economy remained somewhat more robust than other advanced economies, although it too

Chart 1.1

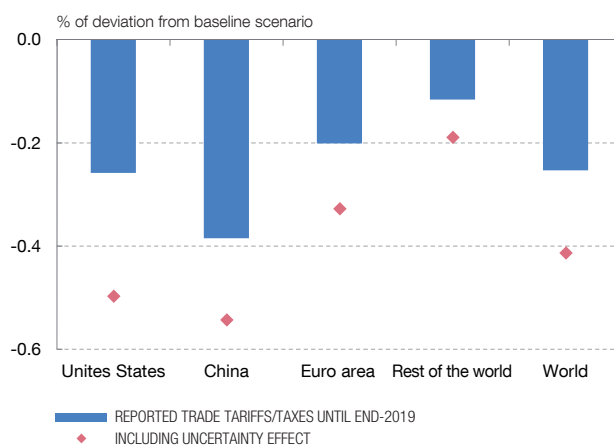
GLOBAL TRADE AND OUTPUT GROWTH

The slowdown in the world economy has continued. Analysts have duly revised their growth forecasts for 2019 downwards for the main economies, in a setting characterised by the US-China trade tensions, which have shrunk global trade and may have significant effects on global activity.

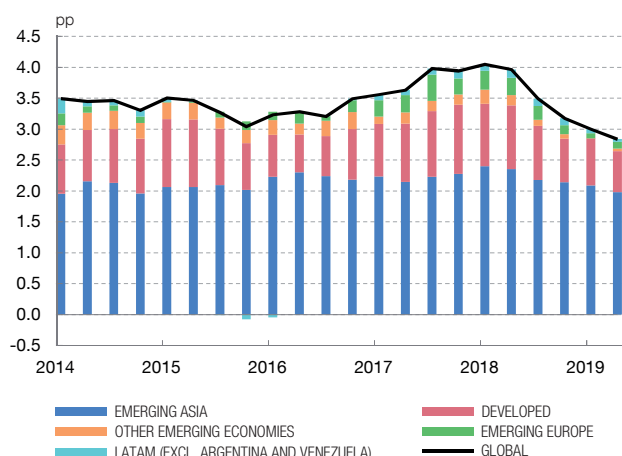
1 GLOBAL TRADE GROWTH



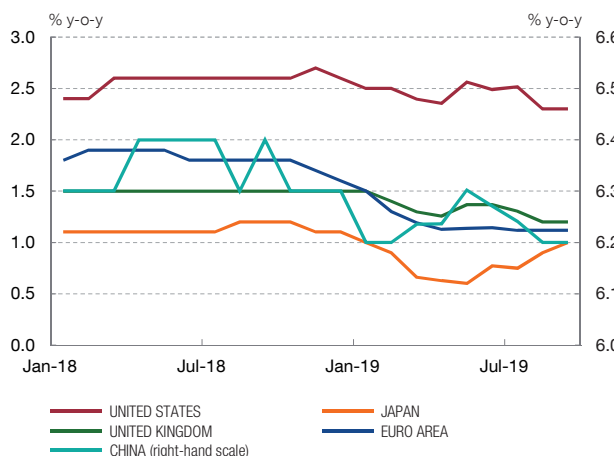
2 SIMULATIONS: EFFECTS ON GDP ON 2021 Q4 (a)



3 CONTRIBUTIONS TO GLOBAL GDP GROWTH



4 CONSENSUS FORECASTS FOR 2019



SOURCES: National statistics, Consensus, CPB, Thomson Reuters and Banco de España.

a The simulation considers two scenarios: that affecting EU-China bilateral relations and the subsequent reduction in global demand; and another in which, moreover, a decline in confidence and an increase in uncertainty come about.

slowed. Among the emerging economies, economic activity in China decelerated once more in Q2. All in all this has given rise to across-the-board downward revisions of growth forecasts for 2019.

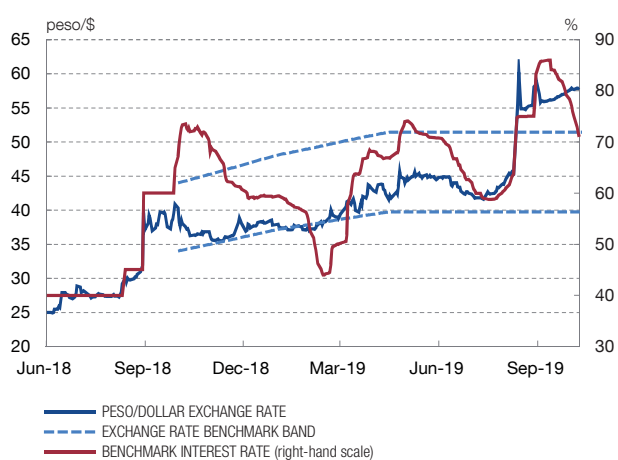
In the emerging markets with a significant Spanish banking presence, considerable risks associated with the global uncertainty and with various idiosyncratic events persist. In Mexico, the economic outlook has worsened, which will result in fresh challenges in the fiscal realm. These compound the delicate situation of the State-held company *Petróleos Mexicanos (PEMEX)*, which has recently received a \$5 billion capital injection from the government and has lengthened debt maturities

Chart 1.2

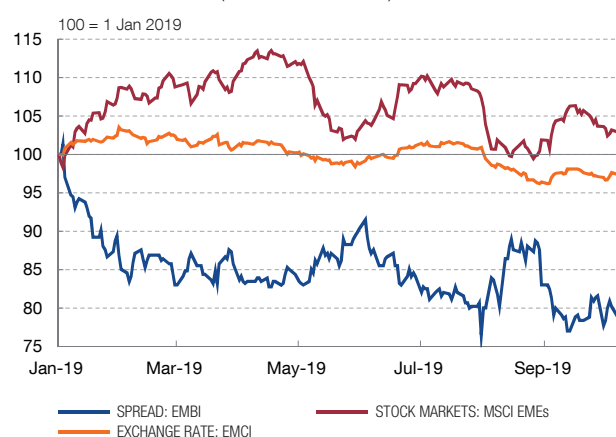
EMERGING ECONOMIES

Emerging countries' financial instruments lost value during the summer as a result of the trade war and of the elections in Argentina, but they have recently stabilised, but for Argentina itself.

1 ARGENTINA: EXCHANGE RATE AND INTEREST RATE



2 FINANCIAL CONDITIONS (EMERGING MARKETS)



SOURCES: JP Morgan and Thomson Reuters.

by repaying short-term bonds and issuing long-term debt securities. The current risks the economy is facing in *Brazil* might be relieved somewhat by the pension system reform (a key element for ensuring the sustainability of public finances). Congress approved the reform and the Senate is shortly expected to follow suit. Finally, in *Turkey*, whose economy has experienced a recession, uncertainty also remains high. This is even after the recent GDP and inflation figures, which were better than expected.

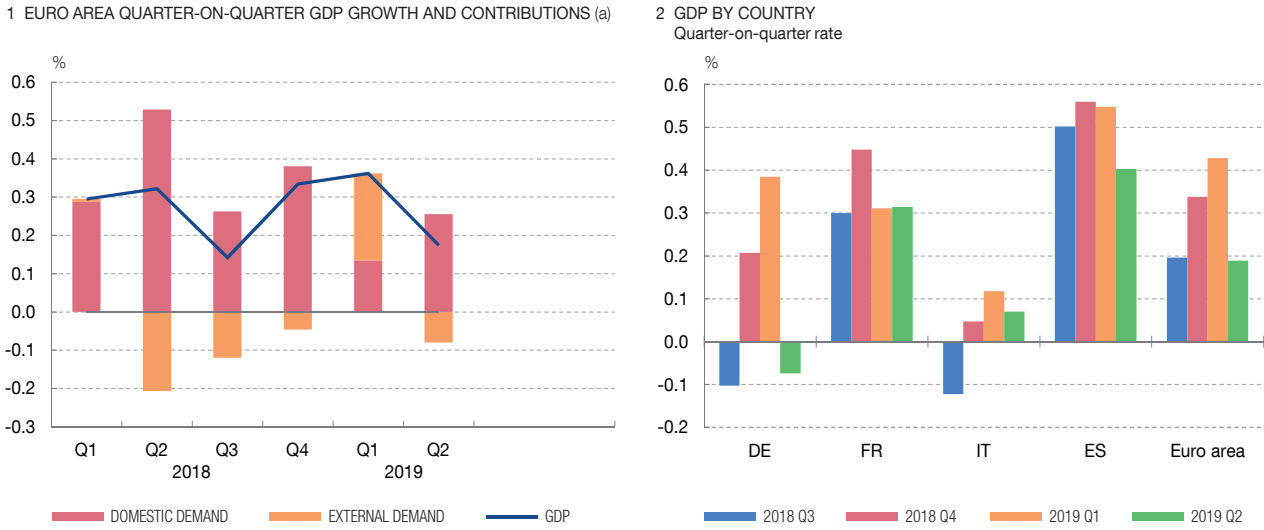
The other emerging financial markets have also been affected. Although its relative weight is small, *Argentina* is the most notable case. The primary election results in August had a strong adverse impact on financial markets and increased doubts over the sustainability of public debt (Chart 1.2). Set against the heavy depreciation of the peso, the central bank decided to considerably tighten its monetary policy stance. The government, meantime, announced its intention to reschedule debt payments, obligatorily lengthening the maturity of Treasury bills held by institutional investors and, voluntarily, that of longer-dated debt held both by residents and non-residents. The government likewise requested a change in the debt payment schedule arranged with the International Monetary Fund. This process culminated in early September in the introduction of capital controls and limits on dollar purchases by residents, which have tightened following the elections last Sunday, on 27 October. So far, the financial markets have not reacted significantly to the results of these elections.

In the euro area, the increase in economic activity was very moderate in Q2. The indicators available suggest this pattern has extended into Q3. GDP slowed in 2019 Q2 owing largely to the fall-off in exports and the slackness of investment (Chart 1.3). Growth was particularly modest in economies where the industrial sector has a greater weight, such as Germany and also Italy. The indicators available for Q3 suggest a

Chart 1.3

ECONOMIC GROWTH IN THE EURO AREA

Euro area GDP growth slowed notably in Q2 owing largely to the fall-off in exports. Economic activity was particularly sluggish in the economies with a greater industrial specialisation, particularly Germany and Italy.



SOURCE: Eurostat.

a Excluding Ireland.

further downturn in manufacturing activities and a more moderate services performance. In this setting, the Eurosystem’s September forecast revised GDP growth downwards to 1.1% and to 1.2% for 2019 and 2020, respectively, compared with the June projection.

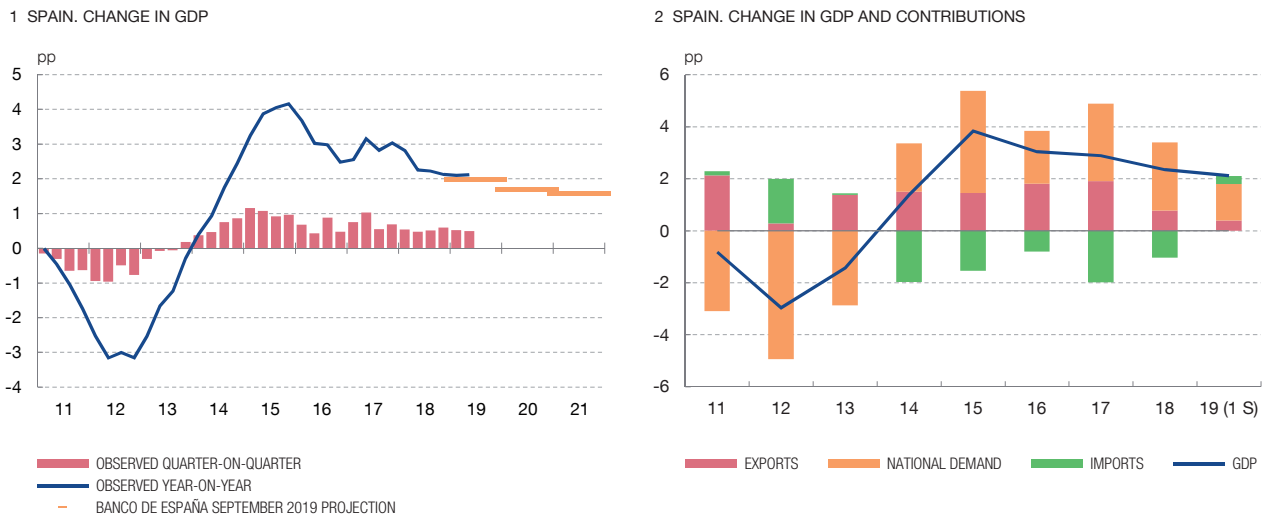
The downturn in the global growth outlook and the absence of inflationary pressures have led to a fresh easing in monetary policies in the main advanced economies. The US Federal Reserve cut its policy interest rate in July, September and October to a range between 1.5% and 1.75%, as a preventive measure against global risks. The ECB, at its September Governing Council meeting, agreed to introduce a package of measures with a clear accommodative stance. Among others, it approved a 10 bp cut in the deposit facility interest rate, placing it at -0.50%, reinforced its forward guidance on interest rates, and improved the lending conditions governing quarterly TLTRO. The ECB also agreed to resume net purchases under its asset purchase programme, at a monthly rate of €20 billion as from 1 November and with no defined time limit (Box 1.2). Moreover, a large number of central banks in other advanced and emerging economies cut their policy interest rates.

1.1.2 Spain

On the Banco de España’s projections, GDP in 2019 Q3 grew at 0.4%, a similar pace to that of Q2 (Chart 1.4). The growth rates of the various demand components

Chart 1.4
SPANISH GDP

The expansion is projected to continue during the 2019-2021 period, albeit with lower growth rates than in previous years and with downside risks. In the recent period GDP is estimated to have once again been underpinned by domestic demand growth, though this latter variable would have been affected by the build-up of external and domestic uncertainties.



SOURCES: INE and Banco de España.

moderated in 2019 H1. In particular, the loss of momentum in the global environment and the rise in uncertainty impacted in the first half of the year the different domestic demand components. Indicators available for 2019 Q3 suggest a more dynamic behavior of household expenditures and firms in that quarter. The slowdown in activity has been apparent in employment, where the moderation has been somewhat sharper than that in output, according to the Social Security registration figures and the last Spanish Labour Force Survey (EPA). That points to a loss of dynamism in private-sector employment which, while across the board, may be more acute in construction.

The medium-term baseline scenario envisages a continuation of the expansionary phase, albeit at a more moderate rate and with downside risks. The latest Banco de España macroeconomic projections, published in September, point to a continuation of the expansion over the 2019-2021 period (Chart 1.4).¹ Under this baseline scenario, however, the pace of GDP growth would be somewhat less than that of previous years, in step with the persistence of the uncertainty linked mainly to the external setting. Further, this baseline path will be subject to downside risks, associated with a potential worsening of trade tensions and with the materialisation of specific geopolitical risks (such as a no-deal Brexit). That would

1 For further details, see Box 1 “Macroeconomic projections for Spain (2019-2021)”, Quarterly report on the Spanish economy, Economic Bulletin 3/2019, Banco de España.

give rise to lower-than-expected growth in the Spanish economy. On the domestic side, it cannot be ruled out that the persistence of uncertainty over the future course of economic policies and the recent events in Catalonia may affect output developments.

1.2 Financial markets and real estate sector

1.2.1 Financial markets

Geopolitical risks, trade tensions, the global macroeconomic outlook and central banks' accommodative monetary policies have all influenced developments on international financial markets. In two specific episodes, in May and in August, negative sentiment on the markets prevailed regarding the outcome of trade negotiations between China and the United States, other geopolitical risks and, in general, the outlook for economic activity. This was reflected in across-the-board declines in higher-risk asset prices, such as equities and high-yield corporate bonds, and increases in those considered safer, such as sovereign debt (Chart 1.5). Additional downward pressure on the long-term yields on these securities was exerted by the expectations of more accommodative monetary policies, leading to historical lows in most euro area countries and in the United States. The growing uncertainty on markets also entailed a rise in price volatility, markedly so in the case of sovereign debt.

Since late August, sentiment on the financial markets has improved across the board, against a background of apparent progress in US-China trade negotiations. This has translated into a rise in sovereign debt yields and a recovery in higher-risk asset prices. As a result, the main stock market indices in the developed countries are, at the cut-off date for this FSR, above the levels reached at the related cut-off date for the previous FSR and, in the case of the United States, very close to their historical high. Their cyclically adjusted PER, which is an indicator of the degree of alignment between stock market prices and economic fundamentals, evidences somewhat high levels compared with corporate profits, given the historical relationship between the two variables (Chart 1.6). By contrast, on Spanish and euro area markets, this ratio has been below its average level since 1997, which suggests the absence of signs of overvaluation.

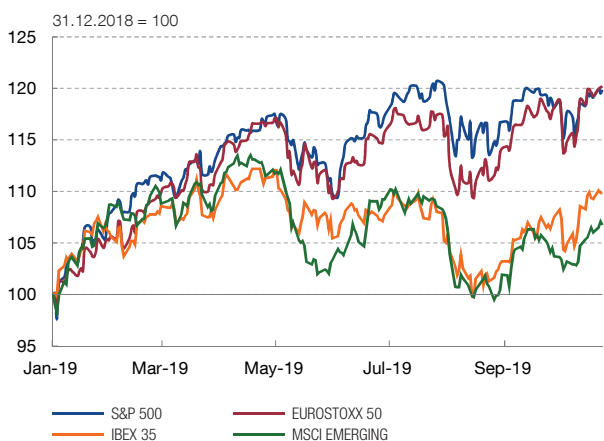
Of note on euro area financial markets is the compression of sovereign risk premia since June 2019, along with the worse performance of bank stock market indices in relative terms. In Spain, the 10-year sovereign debt yield spread over the German benchmark has fallen by around 45 bp, while in Italy it has declined by around 120 bp (Chart 1.6). Behind these developments have been both the announced resumption of the ECB's asset purchase programmes and a lower perception of risk. In Italy, a key factor has been the formation of a new, more European-oriented

Chart 1.5

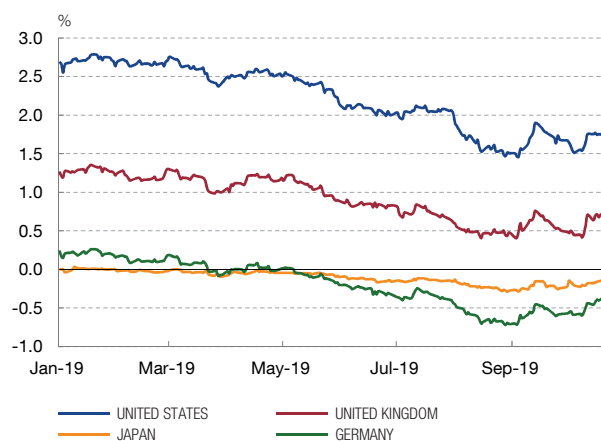
FINANCIAL MARKET INDICATORS

Following certain episodes in which negative sentiment prevailed on the markets, higher-risk asset prices have picked up somewhat since end-August. Long-term sovereign debt yields also recovered, after having posted historical lows in most euro area countries and in the United States in August. The slope of the US yield curve inverted in August in the 2-10-year tranche for the first time since 2007. Excepting a brief episode in early October, market volatility has tended to decline since late August.

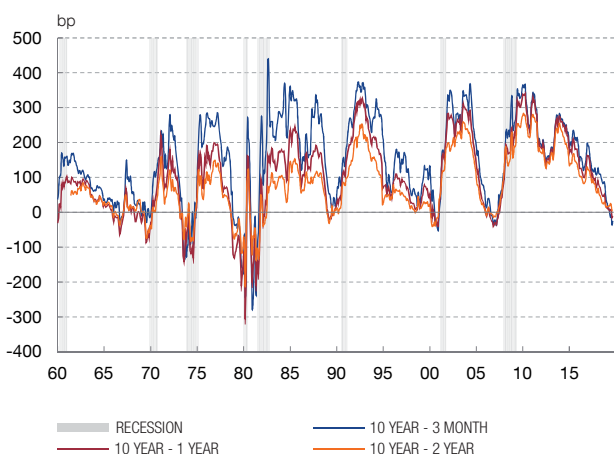
1 STOCK MARKET INDICES



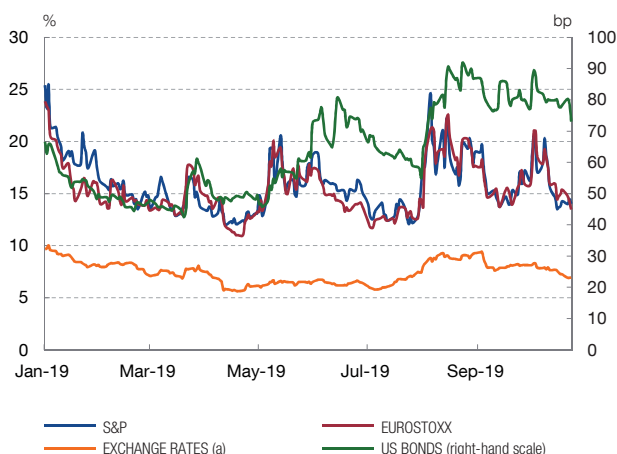
2 10-YEAR INTEREST RATES



3 UNITED STATES: 10-YEAR BOND SPREAD



4 VOLATILITIES



SOURCES: Thomson Reuters Datastream.

a Average of 3-month volatilities for USD/EUR, USD/GBP and JPY/USD.

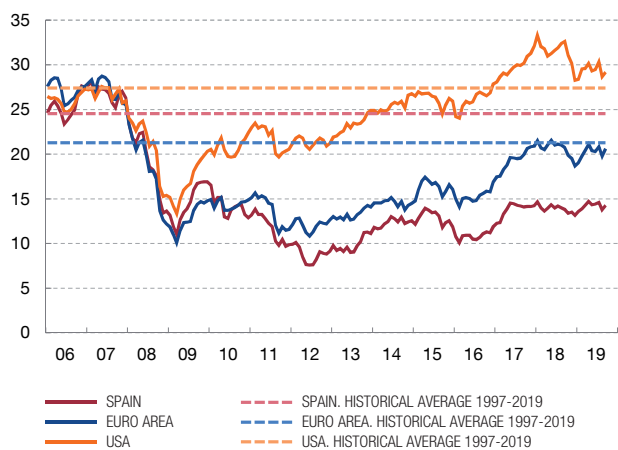
government, while in Spain both the improved credit rating granted by Standard & Poor’s (from “A” to “A+”) in late September and the DBRS upgrade of the outlook (from stable to positive) have been pivotal. The European bank stock market indices have posted further declines, since the publication of the previous FSR, of 7% in the case of the EuroStoxx Banks sub-index and 10% in that of the Madrid Stock Exchange listed banks (Chart 1.6). These declines in bank prices are due to the worsening in the macroeconomic outlook, which bears down on expected profits in the banking sector both through the effect on the diminished quality of their credit portfolios and the lesser demand for banking services, and through the possible

Chart 1.6

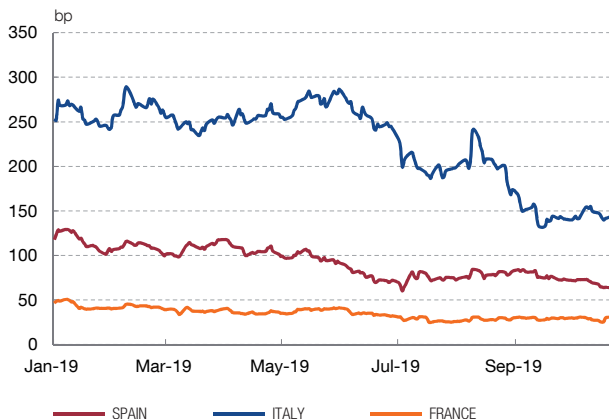
OTHER FINANCIAL MARKET INDICATORS

The price-earnings ratio (PER), in cyclically adjusted terms, stands somewhat above its historical average in the United States, and below this average in the euro area and in Spain. Of note in the euro area financial markets is the compression in sovereign risk premia and the poorer relative performance of the banking stock market indices. The financial conditions indices show that such conditions continue to be relatively easy in the advanced economies.

1 CYCLICALLY ADJUSTED PER (a)



2 10-YEAR GOVERNMENT BOND YIELD SPREAD OVER GERMANY



3 BANKING INDICES



4 GOLDMAN SACHS FINANCIAL CONDITIONS INDEX



SOURCES: Robert J. Shiller, Thomson Reuters Datastream and Bloomberg Data License.

a The cyclically adjusted PER is calculated as the ratio of share prices to the ten-year moving average of profits.

narrowing of the unit net interest margin associated with expectations that interest rates will hold at very low or even negative levels for a longer period.

Spanish stock market indices have performed more poorly than the related indicators on the main European markets. This is due mainly to the greater decline in banking sector share prices in Spain and to the relatively greater weight of this sector in national indices.

The materialisation of some of the risks described in Section 1.1 might lead to fresh periods of tension on international financial markets, with potentially

adverse consequences for financial stability. A new episode of this type, accompanied by strong rises in risk premia, would entail a tightening of financial conditions that would interrupt a long period over which these conditions had remained loose (Chart 1.6). These developments might affect to a greater extent the more vulnerable segments such as that of debt with impaired credit quality, including leveraged loans and CLOs,² and markets with high valuations, and they could spread to other assets. That would amplify the direct effect of the economic growth shock associated with agents' lower confidence and other real factors, impairing not only the credit quality of banks' portfolios but also reducing the value of other securities on their balance sheets.

In the medium term, the extension over time of easy financial conditions characterised by very low interest rates also poses some challenges for financial stability. Against this background, macro- and microprudential supervisors should monitor closely the behaviour of bank and non-bank intermediaries and use the instruments available to curb any excessive risk-taking with systemic implications or to build up buffers with which to counter future adverse shocks.

1.2.2 The real estate market in Spain

The information available points to a slowdown in activity in the real estate market in 2019 up to the cut-off date of this report. Since late 2018, a growing number of housing market indicators, on both the supply and demand sides, have slowed. This has been in spite of easy borrowing conditions holding and of continuing employment creation, albeit at lower rates. The uncertainty stemming from the external environment might have begun to feed through, as in the case of other domestic demand components, to residential investment. As regards sale/purchase transactions, the slowdown has been sharper in the second-hand housing market (Chart 1.7). This recent loss of momentum in housing transactions will be largely attributable to the slowdown in the national component of housing demand, since the non-national component (resident and non-resident alike) is holding stable around late-2018 levels, which marked a peak. The construction of new housing, proxied by the number of building permits, decelerated notably in year-on-year terms until July. In cumulative 12-month terms, the figure for building permits in July accounted for just over 12% of the pre-crisis peak.

Second-hand house prices have recently slowed, while the growth rate of new house prices has risen. In the first half of 2019, average house prices posted year-on-year growth of 6%, compared with 6.7% in 2018 as a whole. The slowdown

² CLOs are leveraged loan securitisations. See “Financial Stability Report”, Federal Reserve Board, May 2019, and Banco de España FSR, Spring 2019. The presence of CLOs in the Spanish financial system is very low compared with other European countries and the United States.

was due to the developments in the second-hand housing market, which increased by 5.6%, 1.2 pp lower than in 2018. Conversely, the prices of new houses continued to accelerate in the first half of the year (8.8% year-on-year, above the 2018 figure of 6.4%). As a result, they have continued to draw closer to their 2008 Q3 peak level, standing 7 pp below. Although, in real terms they are still 18% below their historical high.³ In aggregate and real terms, house prices are still around 30% below their 2007 Q3 high (Chart 1.7). The indicators and models available, based on aggregate data and subject to a high degree of uncertainty, would suggest that prices are already around their equilibrium level (Chart 1.7).

Real estate market activity and prices continue to show high heterogeneity across regions and segments. In the past 12 months, the increase in prices for new and second-hand housing alike has tended to ease in those areas where prices had grown to a greater extent from their post-crisis low. Conversely, the rate of increase of prices has held up and, in some cases, steepened in those areas where prices had recovered more slowly. In terms of the volume of housing transactions, the slowdown has been generalised across the regions; that said, those that have been most dynamic since the recovery have shown greater weakness over the past year in relative terms (Chart 1.7). That is to say, some convergence and rebalancing in the rates of change of prices and volume of transactions is under way.

The percentage of households paying rentals continued growing in 2018, although there continues to be notable heterogeneity between types of households and geographical areas. In 2018, the weight of residential rentals in Spain held on the growing trend dating back to the mid-2000s, especially among those households in which the age of the reference person is between 30 and 44 years. The weight of rentals in 2018 grew across the board in Spain's regions, albeit maintaining notable disparity.

In line with the slowdown in real estate market activity, new lending to households for house purchase has lost momentum. Since June, the volume of new lending under this heading has been contracting in year-on-year terms. This had not occurred since early 2014 (Chart 1.8). In this respect, the Bank Lending Survey (BLS) suggested that during the first half of the year there had been some tightening in lending standards, while loan applications had remained rather flat. The developments in new lending have meant that the rate of contraction of the outstanding balance of credit in this segment has ceased to ease in recent months (-1.1% in August), breaking the trend recorded in 2018.

The interest rates on new loans for house purchase fell by around 20 bp, in cumulative terms, from May to August (Chart 1.8). This decline is mainly linked

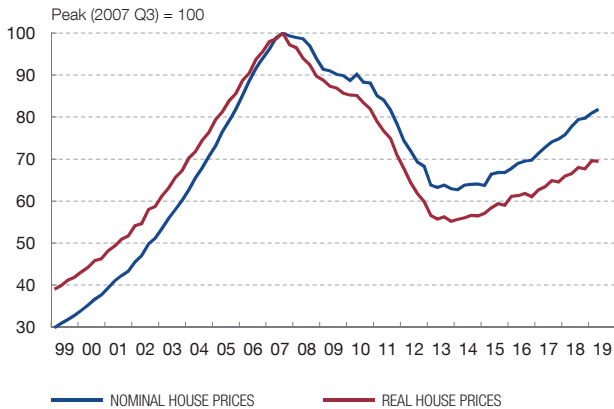
³ In the same period, second-hand house prices stood 38% below their respective high.

Chart 1.7

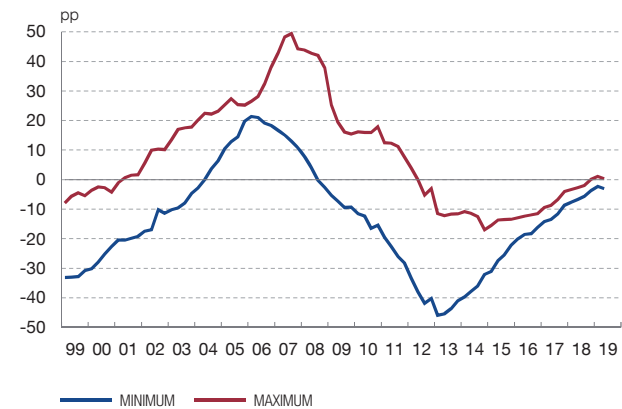
HOUSING MARKET ACTIVITY INDICATORS (a)

Real estate activity has slowed in the course of 2019, influenced by the slowdown in demand by national purchasers but also by agents' adaptation to the latest regulatory changes in the mortgage market. Housing supply has also slowed and continues to be far off its precrisis peak volume. Second-hand house prices have recently decelerated, while new house prices are drawing closer to their historical high.

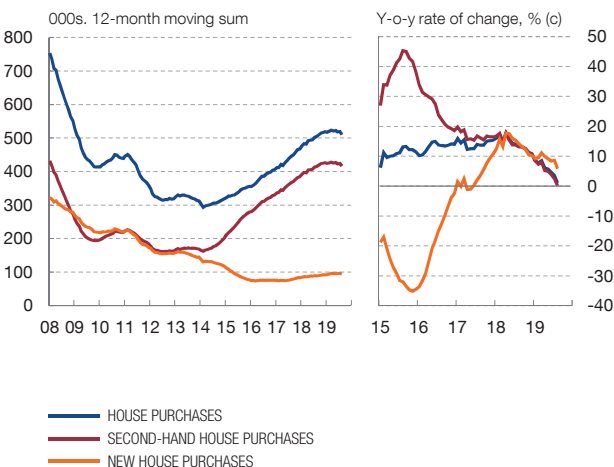
1 HOUSE PRICES



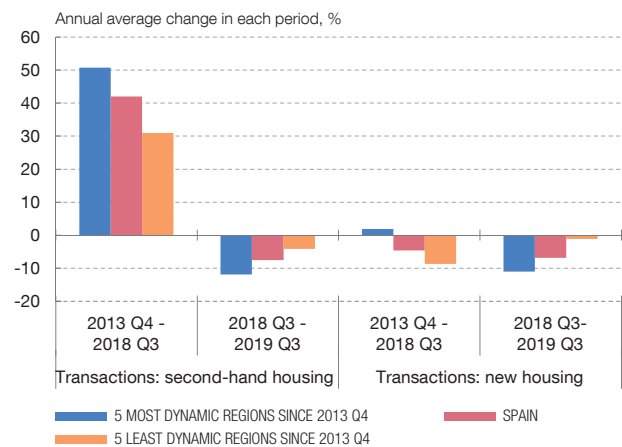
2 HOUSE PRICE DISEQUILIBRIUM INDICATORS (b)



3 TRANSACTIONS



4 TRANSACTIONS BY REGION



SOURCES: Banco de España, ECB, Eurostat and INE.

- a Latest observation: 2019 Q2 (house prices) and August (house purchases). Real house prices are deflated using the consumer price index.
- b The maximum and minimum of four imbalance indicators are shown. The first two are gaps calculated as the difference between the value of the variable of interest in each period and its long-term trend for: (i) house prices in real terms and (ii) the house prices/household disposable income ratio. The last two indicators are based on econometric models. The first of these is based on an Ordinary Least Squares (OLS) estimation of house prices, in real terms, in respect of household disposable income and mortgage interest rates. The second is based on an Error Correction Model (ECM) in which, in the long term, real-terms house prices depend on household disposable income and mortgage interest rates. In all cases, longterm trends are obtained using a one-tailed Hodrick-Prescott filter with a smoothing parameter equal to 400,000.
- c Year-on-year rate of change taking the cumulative 12-month flow.

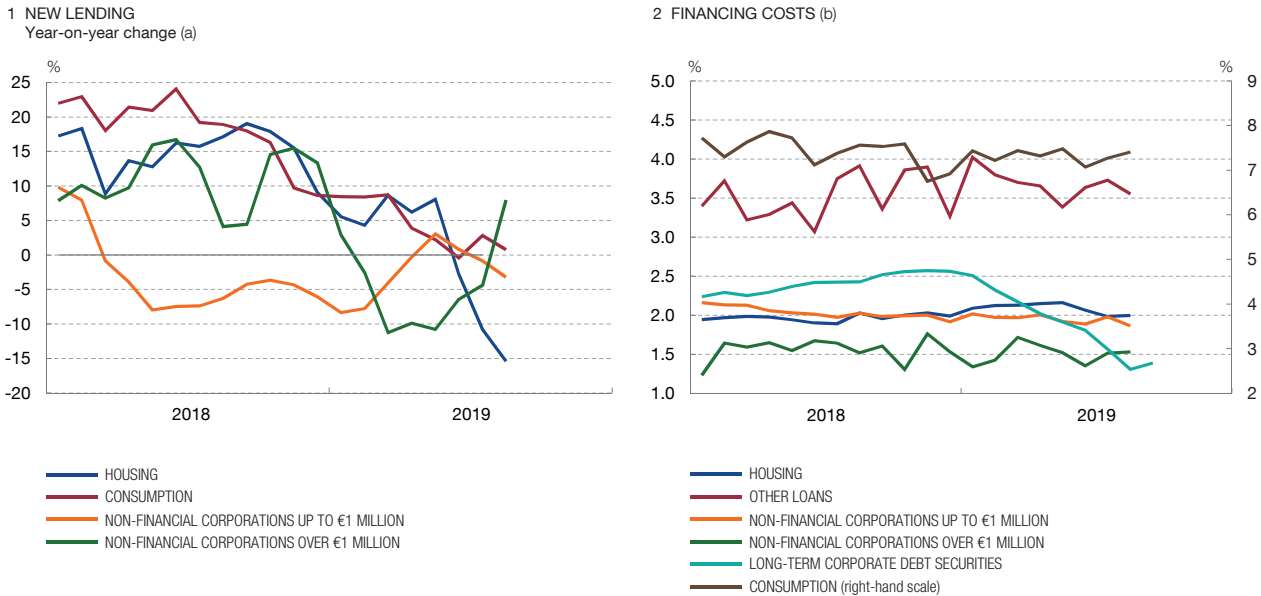
to the fall in wholesale funding costs since April. Thus, for example, the 12-month EURIBOR, the usual benchmark rate for these transactions, fell by 17 bp from April to July.

The loan-to-value (LTV) and loan-to-price (LTP) ratios also suggest some tightening in mortgage lending standards. Chart 1.9 displays the distribution of these two indicators for new mortgages, obtained from the databases of the

Chart 1.8

NON-FINANCIAL PRIVATE SECTOR FINANCING CONDITIONS

New credit flows to the non-financial private sector have gradually slowed in 2019 and, in recent months, they have contracted in practically all segments. The cost for companies of financing with fixed-income securities have fallen sharply, and companies have taken advantage of this to increase their resort to corporate bond financing.



SOURCE: Banco de España.

- a Calculated taking 3-month cumulative flows.
- b The interest rates on bank loans are NDER (narrowly defined effective rate).

Spanish Association of Registrars. In both cases, the amount lent is related to the collateral value of the mortgage, whereby an increase (reduction) in the proportion of loans with a high LTV/LTP would denote an easing (tightening) of lending standards. In this respect, the weight of more leveraged loans (those with an LTV or an LTP of over 80%), is lower in new mortgage financing. Moreover, the average LTV on new lending stabilised in the first half of 2019, while the average LTP diminished again. The average amount of mortgages fell in regions with a higher income level and grew less sharply in the other geographical regions. This suggests that the loan-income ratio of individuals or households with mortgages, another relevant factor for assessing mortgage conditions, might also have improved.

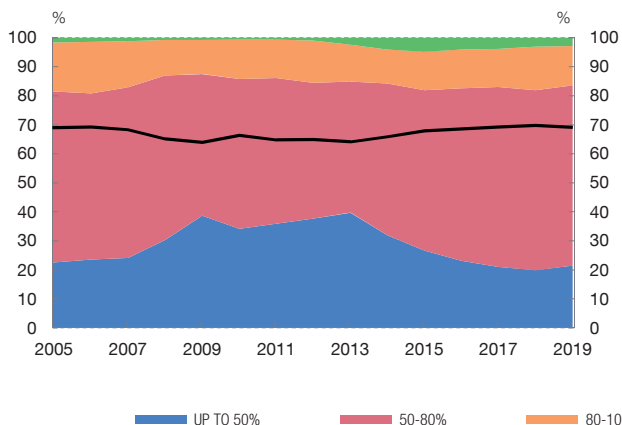
The LTV and LTP figures are highly stable. Despite the fact that the weight of transactions with a low LTV has fallen significantly in recent years, the average LTV is only slightly higher at present. By contrast, in the case of the LTP, there has been a reduction in the weight of the most leveraged transactions (with an LTP of over 80%) compared with the crisis years. Moreover, the average LTP is also lower. Box 1.3 analyses in detail the consequences of these new lending standards for the risk institutions take on in the mortgage market.

Chart 1.9

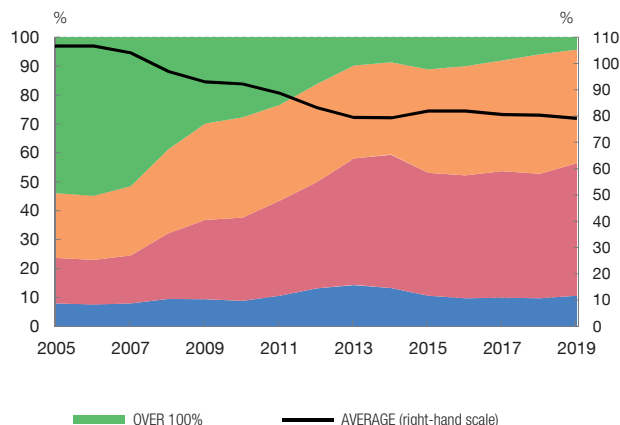
MORTGAGE LENDING STANDARDS

There has been some tightening of mortgage lending standards, as the weight of more leveraged mortgages (with an LTV and LTP of over 80%) has fallen, and the average LTV/LTP of the new mortgages has also declined.

1 LTV RATIO OF NEW MORTGAGE LENDING. DISTRIBUTION (a)



2 LTP RATIO OF NEW MORTGAGE LENDING. DISTRIBUTION (a)



SOURCE: Spanish Association of Registrars.

a In the distributions, the principal of the loans (by period) is accumulated to define each segment within the distribution. The average of the LTV and of the LTP is weighted in accordance with the capital of each mortgage.

The reduction in the outstanding balance of bank credit has been maintained in construction and real estate development activities. The year-on-year rate of decline was 12.5% in June 2019, entailing a more moderate fall-off than that observed at end-2018 (18.7%). This would be mainly due to the still-high volume of repayments and the sale of non-performing loan portfolios by credit institutions.

1.3 The non-financial sectors

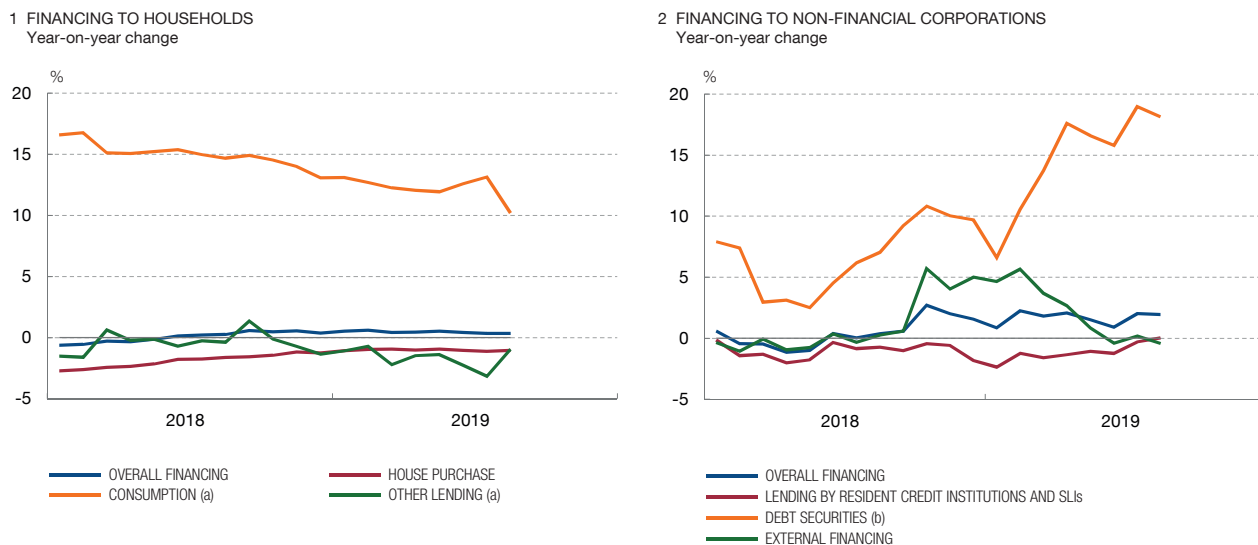
1.3.1 Financial position and credit developments

New lending flows to the non-financial private sector decelerated gradually during 2019, having shrunk in practically all segments in recent months (see Chart 1.8). As the BLS suggests, this would be due both to supply-side factors, especially in the case of mortgages, and demand-side factors. Despite the tightening in lending standards, bank financing costs for households and firms generally held at very low levels and without significant changes. In the case of firms, the cost of fixed-income securities issues has fallen sharply since the start of the year, thereby raising their attractiveness relative to bank loans.

Chart 1.10

FINANCING TO HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS

Of note in terms of financing is the buoyancy of consumer credit for households and the financing obtained through debt issuance for firms.



SOURCES: Banco de España and Datastream.

- a Excluding securitisation.
- b Includes issues by resident subsidiaries.

The outstanding balance of financing raised by households continued to expand at a very contained rate (0.3% in August). The consumer credit segment has been the most dynamic to date, with a year-on-year growth rate of 10.2% in August (see Chart 1.10). According to the BLS, banks perceive less creditworthiness in this segment, which should also be consistent with the increase in NPLs recently observed.

In this setting, households’ financial position has continued to strengthen in recent months, albeit at a lesser pace. Gross household disposable income increased by over 4% year-on-year in the first half of the year, boosted by the rise in wages and the fall in unemployment. The household debt-GDP ratio fell by 0.4 pp to 58.6%, scarcely 0.6 pp above the euro area average. The interest burden associated with debt has also diminished during this period. Lastly, net household wealth continued to expand owing both to the increase in the financial and the real estate components.

In the first half of 2019, there was a step-up in the rise the household saving rate had begun to show in late 2018. The moderation in the growth of consumption and the rise in income led the household saving rate, in proportion to household gross disposable income, to stand at 8.7%, 1.8 pp above the end-2018 level. As a result, the rate of saving not earmarked for debt service

is expected to be close to zero, after having been in negative figures over recent years.

Overall external funding by non-financial corporations continued to expand at a year-on-year rate of close to 2%. In terms of components, corporate bond financing has been growing strongly (see Chart 1.10), assisted by the declines in market interest rates, particularly in the medium and long-term tranches (see Chart 1.8). This would partly explain the fall-off observed since the start of the year in new bank lending to non-financial corporations. However, repayment dynamics enabled the outstanding balance of credit provided to firms by resident banks to actually increase slightly, in year-on-year terms, in August. Lastly, the financing obtained abroad by firms has contracted slightly in the most recent period; however, this behaviour has been much influenced by one-off operations.

The financial position of non-financial corporations has continued to improve, but signs of a downturn in profitability are beginning to be discernible. In the first six months of the year, the corporate debt ratio continued to fall. This decline took the ratio to 73.4% of GDP, 1.1 pp less than in December 2018, and 4.3 pp below the euro area average. Combined with the low cost of debt, these developments have prompted a fresh decline in the sector's debt burden, marking another historical low. However, the ordinary profits of the non-financial corporations drawn from the Banco de España Central Balance Sheet Data Office sample increased by scarcely 1.4% in the first half of the year, far down on the same period the previous year (8.4%), while the return on assets declined by 0.2 pp to 4%.

Firms' debt burden declines as their profitability increases. In fact, it stands at close to 20% for firms in the lowest three deciles (see Chart 1.11). By firm size, an inverted U relationship is obtained, with medium-sized firms those that have to make most effort to meet their financial obligations. Chart 1.11 also highlights the fact that the debt burden increased significantly for all firms during the last crisis. This increase came about even though deleveraging had commenced some years earlier. Behind this behaviour are, above all, the decline in gross operating profit during the crisis and the rise in interest rates. This latter element underscores the potential sensitivity of firms' financial position to a downturn in profits and a rise in rates.

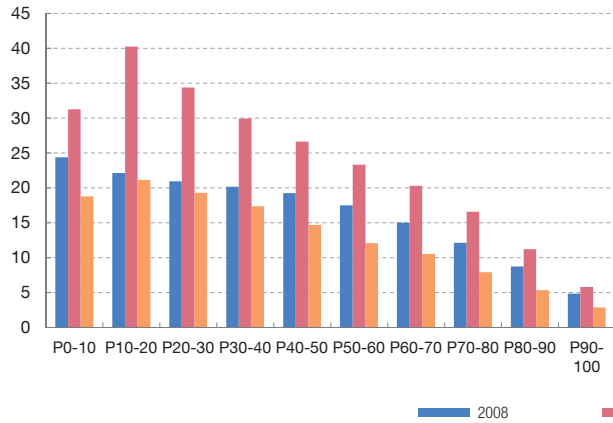
In recent months, public-sector financing costs have fallen significantly (see Chart 1.12). Spanish sovereign debt returns posted historical lows in August, standing at 0.04% for the 10-year maturity. In this context, the Treasury followed a strategy in which the issue of long-term instruments was to the fore. That allowed a further lengthening of the average life of overall outstanding debt, which stood at 7.5 years in September. Moreover, net Treasury issuance in 2019 has declined, posting its lowest level since 2007.

Chart 1.11

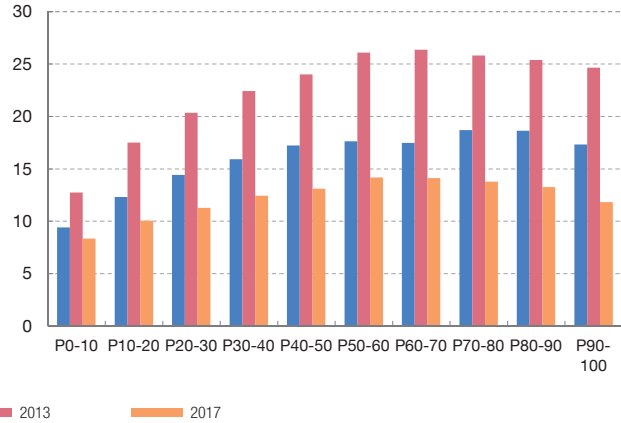
FIRMS' FINANCIAL POSITION (a)

The interest burden of debt is diminishing as firms' profitability rises. In terms of corporate size, an inverted U relationship is obtained, with medium-sized corporations those that have to make the greatest effort to meet their financial obligations. The interest burden of debt increased significantly for all firms until 2013, despite deleveraging, being in 2017 lower than in 2008.

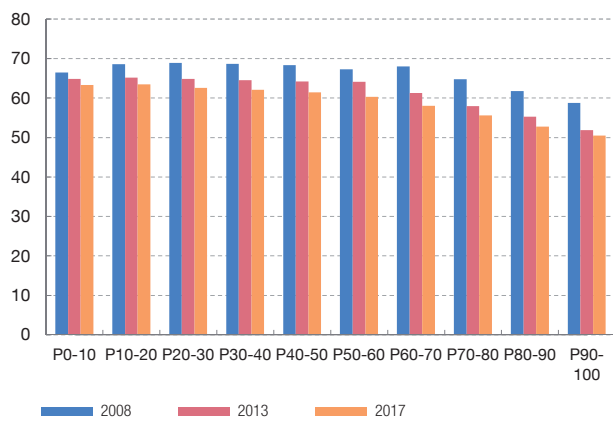
1 FINANCIAL COSTS/GROSS PROFIT RATIO BY ROA DECILES



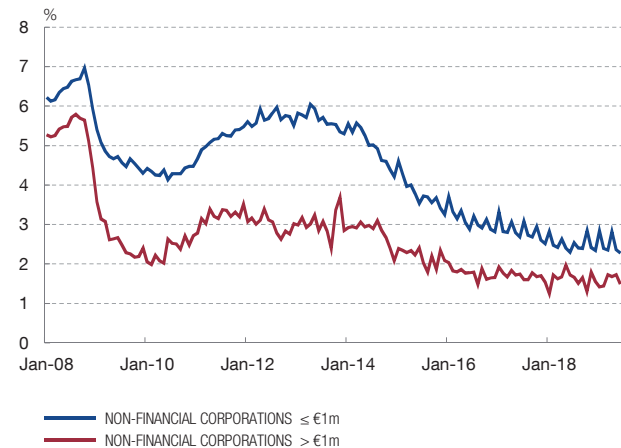
2 FINANCIAL COST/GROSS PROFIT RATIO BY ASSET DECILES



3 INTEREST-BEARING BORROWING/ASSETS RATIO BY ASSET DECILE



4 NEW LOANS INTEREST RATES (APR): FIRMS (b)



SOURCE: Banco de España.

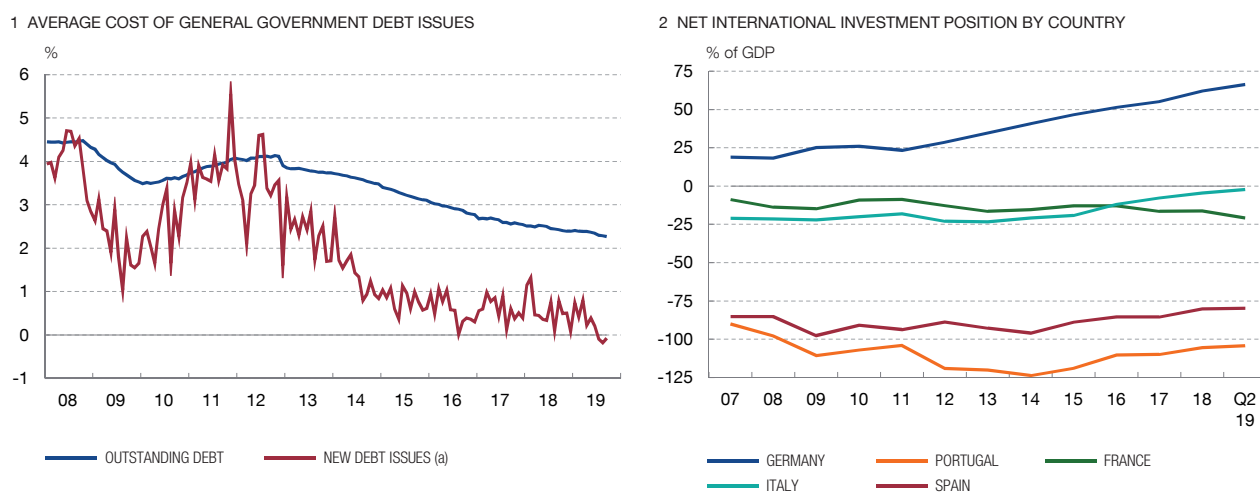
- a Firms' balance sheet and income statement information is drawn from the Banco de España Central Balance Sheet Data Office. Financial firms and companies from the construction and real estate development sector are excluded.
- b The new loans of a period are defined as all the first-time loans arranged 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.

The public sector's high debt continues to be a major source of vulnerability for the Spanish economy. True, the general government deficit has fallen in recent years, thanks essentially to the economic pick-up; but it was still at 2.5% of GDP in 2018, ranking second-highest in the euro area. Also, in June 2019 the public debt/GDP ratio stood at 98.9%, a level still 13 pp higher than the euro area average. While this high level of indebtedness does not translate into a burgeoning debt burden owing to low financing costs, it is a significant factor of vulnerability for the Spanish economy ahead of potential increases in funding costs on markets or of a

Chart 1.12

PUBLIC DEBT FINANCING COST AND INTERNATIONAL INVESTMENT POSITION

General government financing costs have fallen significantly, while the Spanish economy's net debtor position remains at high levels from both a historical and international perspective.



SOURCES: Banco de España, Spanish Treasury and ECB.

a Average interest rate on issues made during the month.

macroeconomic downturn. The lengthening of public debt maturities seen since 2013 might partly mitigate this risk by reducing refinancing requirements.

Likewise, the high negative net international investment position (IIP) is another major vulnerability for the Spanish economy in the face of potential changes in international financial market sentiment. The Spanish economy's negative net IIP, as a percentage of GDP, has declined by around 18 pp since 2014. However, in June 2019 it still stood at over 79.9% of GDP, far above the euro area average (see Chart 1.12). Gross external debt amounted to 171.6% of GDP in 2019 Q2, only 3.9 pp below the high recorded in 2015 Q1, though similar to that of other comparable countries. The fact that most of this gross external debt has a lengthy maturity, is denominated in euro and is issued by general government would alleviate, to some extent, refinancing risk.

1.3.2 Other interconnections with the financial sector

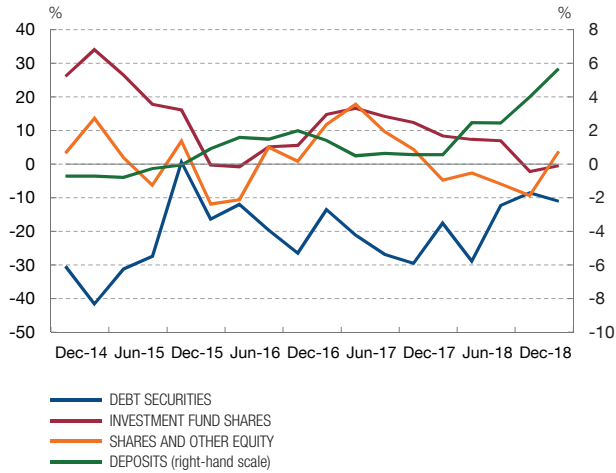
The main financial assets in which households invest their gross wealth are deposits (38.2% of the total in March 2019). Post-2015, deposits had been diminishing in significance in household portfolios relative to investment funds. Specifically, households' holdings in investment funds grew in cumulative terms by 40.2%, while deposits increased by only 7.9% over these five years, due in part to the progressive reduction in the return on them in an environment of very low interest

Chart 1.13

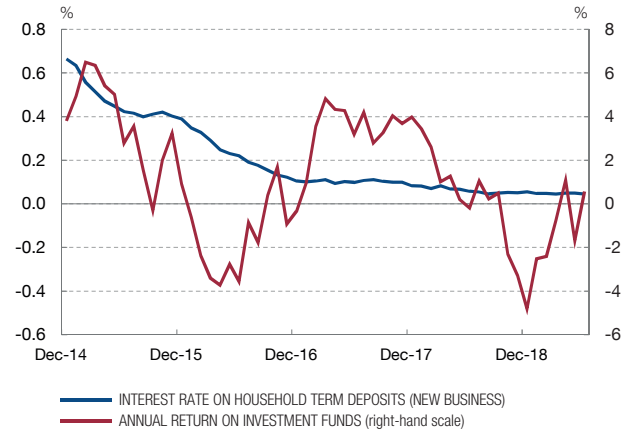
HOUSEHOLDS' FINANCIAL POSITION

Households' financial assets have increased in the past five years by close to 10% to €2.2 trillion as at March 2019. While the composition of the financial assets portfolio has held stable in this period, investment funds and, to a lesser extent, deposits have grown notably, set against the reduction in cash and fixed-income.

1 FINANCIAL ASSETS
Year-on-year rate



2 PROFITABILITY INDICATORS



SOURCE: Banco de España.

rates. However, a significant rebound can be seen in the volume of deposits in 2019 (5.7% year-on-year), despite the fact that the return on them is practically zero. The increase has been far above the rates of change recorded for other financial assets (see Chart 1.13). It is estimated that the low returns on fixed-income securities have lessened the interest in investing in assets linked to such securities, whereas the volatility of equities has discouraged direct and indirect investment in these instruments in a setting of high uncertainty (see Chart 1.5).

SPAIN'S MACROECONOMIC AND FINANCIAL EXPOSURE TO THE UNITED KINGDOM IN THE EVENT OF A NO-DEAL BREXIT

Uncertainty related to the form and date of the United Kingdom's departure from the European Union (Brexit) continues at the time of this report going to press (see Chart 1). Against this backdrop, this Box describes how the climate of uncertainty associated with the Brexit negotiations is affecting the country's economic situation and analyses the exposure of Spain's economy and banking sector to the United Kingdom. It also describes the contingency measures adopted by the European Commission and the Spanish government in relation to the financial system in the event of a no-deal Brexit.

The extension agreed by the European Council in April 2019 managed to delay the risk of a disorderly exit of the United Kingdom from the EU until 31 October 2019 in view of the British Parliament's failure to ratify the withdrawal deal negotiated with the previous government. More recently, on 17 October 2019, the European Union and the current British Government, led by Boris Johnson, signed a new agreement obviating a customs and regulatory border between the Republic of Ireland and Northern Ireland. At the cut-off date for this report, however, persisting difficulties over the timely ratification of the agreement

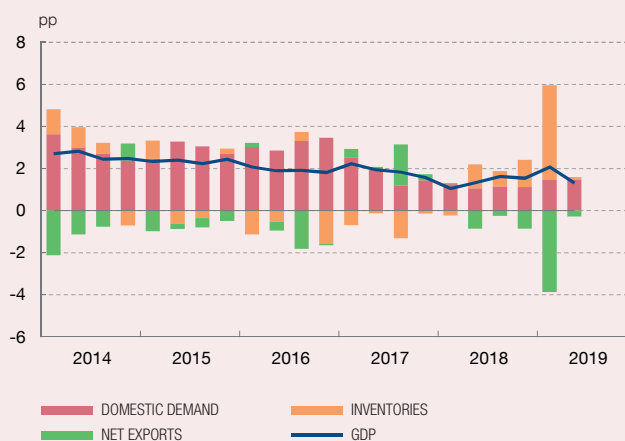
have led the European Council to adopt, as requested by the British Government at the behest of Parliament, an additional extension. In this case the extension will be flexible, running to 31 January 2020 at the latest. This extension should, in principle, enhance the possibility of an agreement between the parties. But it cannot be ruled out that the ultimate terms of the future relationship between the United Kingdom and the European Union may involve a lesser degree of integration between both economies than the previous agreement.

The prolonged period of uncertainty following the 2016 Brexit referendum has affected the British economy, which has worsened notably in recent months. As Chart 2 shows, the UK maintained relatively high GDP growth rates after the referendum, while monetary and fiscal policy decisions were able to sustain domestic demand and exports. However, high uncertainty impacted corporate investment, which weakened significantly (see Chart 3) and remained virtually flat as a percentage of GDP, in contrast with other cycles. Also, some British firms have directed their investments towards EU-27 countries, setting up subsidiaries that allow them to keep accessing this market. By contrast,

Chart 1
UNITED KINGDOM. ECONOMIC POLICY UNCERTAINTY INDEX



Chart 2
UNITED KINGDOM. GDP AND CONTRIBUTIONS BY COMPONENT
Year-on-year growth



SOURCES: Eurostat, EPU, ONS and Bank of England.

1 H. Breinlich, E. Leromainz, D. Novyx and T. Sampson (2019), *Voting with their Money: Brexit and Outward Investment by UK Firms*, with survey information available until March 2019, find that the number of FDI transactions of the United Kingdom in the EU27 rose by 17% since the referendum, while FDI transactions aimed at other non-EU OECD countries hardly changed. Conversely, FDI transactions from EU27 declined by 9%. See also N. Bloom, P. Bunn, S. Chen, P. Mizen, P. Smietanka and G. Thwaites (2019), Bank of England, Staff Working Paper 818, *The Impact of Brexit on UK Firms*.

SPAIN'S MACROECONOMIC AND FINANCIAL EXPOSURE TO THE UNITED KINGDOM IN THE EVENT OF A NO-DEAL BREXIT (cont'd)

the number of investment projects of EU-27 countries in the United Kingdom decreased by 9% after the referendum.¹

More recently, GDP growth figures available for 2019 H1 show some volatility associated with the inventory build-up process which took place in Q1 in view of the proximity of the first exit date agreed (31 March). However, the fall in industrial production, the decrease in corporate and consumer confidence to record lows and the recent slowdown in retail sales point to a gradual weakening of the British economy. European economies are already affected by lower demand from the United Kingdom, especially those with a greater commercial exposure to this economy (see Chart 4). In addition to the above-mentioned fall in direct foreign investment flows, euro area exports to the United Kingdom post negative rates since mid-2016, with a cumulative decline of nearly 10% in real terms up to July 2019. But the effects of a possible no-deal Brexit would be much more disruptive for both parties, given their strong current commercial and financial links and the potential impact of this scenario on the financial markets. In particular, according to the latest Bank of England estimates, in the event of a no-deal Brexit, the United Kingdom's GDP would drop to 5.5% over

5 years below the baseline scenario from 2020 H1, while the unemployment rate and inflation would rise to 7% and 5.3%, respectively.

The Spanish economy's exposure to the United Kingdom is significant. Therefore, a no-deal departure would have notable consequences. The volume of goods trade with the United Kingdom, which would be negatively affected by the increase in tariffs to the levels currently in force for third countries, is not particularly high, but is significant. Spanish exports of goods to the United Kingdom account for 1.7% of GDP, a percentage that is lower than the average for the euro area (2.6%), although the agri-food sector's exposure is higher. In services, the exposure of Spain's economy to the United Kingdom (1.6% of GDP) is higher. In this case, some specific areas, such as the tourism sector, could be especially affected. The United Kingdom is the main country of origin of tourist flows to Spain, representing around 20% of tourist inflows and of total spending. This is compounded by the exposure of financial services and telecommunications export firms.² As a whole, it is estimated that the cost through these channels of a disorderly exit of the United Kingdom for the Spanish economy may be substantial (around 0.7 pp of GDP in 5 years).³

Chart 3 UNITED KINGDOM. PRODUCTIVE INVESTMENT FOLLOWING PREVIOUS RECESSIONS

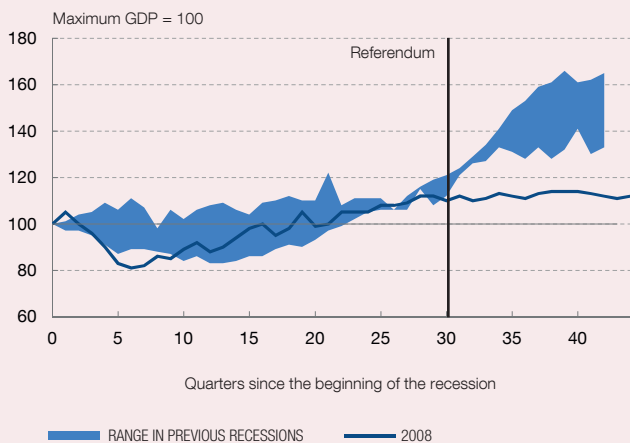
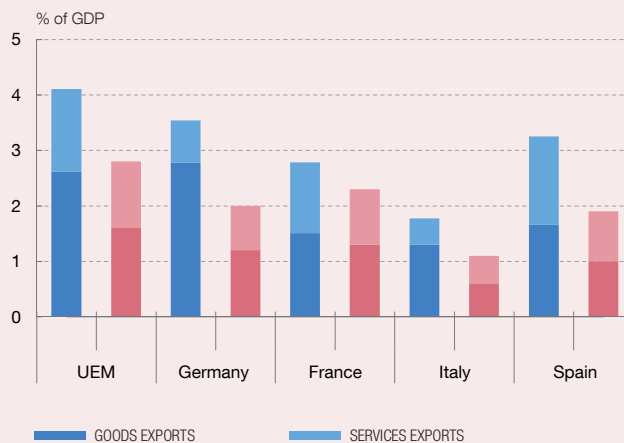


Chart 4 GOODS AND SERVICES TRADE WITH THE UNITED KINGDOM (2017)



SOURCES: Eurostat, EPU, ONS and Bank of England.

2 The second-home market, which traditionally attracted many British citizens, particularly in the Mediterranean provinces, is one of the most exposed sectors to a no-deal Brexit.
 3 See Vega (2019), *Brexit: current situation and outlook*, Occasional Paper No 1905 of the Banco de España.

SPAIN'S MACROECONOMIC AND FINANCIAL EXPOSURE TO THE UNITED KINGDOM IN THE EVENT OF A NO-DEAL BREXIT (cont'd)

As regards the banking sector's exposure, the foreign banks with the greatest weight in the British financial system are the Spanish, US, German and French banks. As a whole, they exceed 50% of the exposures of foreign banks in the United Kingdom, according to the latest available data published by the Bank for International Settlements (BIS), which related to June 2019.⁴ Spain has the highest exposure (16.1%), followed by the United States (15.9%). As regards other European countries, Germany (10.6%), France (8.2%) and the Netherlands (4%) have the greatest exposures (see Chart 5).

However, from the perspective of each of these countries, the importance of these exposures will depend on the size of their respective banking sectors. Thus, according to data published by the European Banking Authority (EBA), in the latest transparency exercise relating to June 2018, Irish banks appear to be the ones most exposed in relative terms, followed by Spanish banks (23.8% and 14%, respectively, of exposure to the United Kingdom as a percentage of total exposure). The exposure of Germany, France and the Netherlands to the United Kingdom was below 5% of the total exposure (see Chart 6).⁵ In absolute

terms, Spain, together with France and Germany, were the countries with the highest volume.

The exposure of Spanish banks is mainly concentrated in loans, accounting for more than 85% of their financial assets in the United Kingdom as at June 2019. Household loans (54.9%) and, more specifically, mortgage loans, have the highest weight in total exposure (see Chart 7).

Over a longer time frame, an increase is observed in the volume of loans of Spanish banks in the United Kingdom from the levels of December 2014. Also, the NPL ratio decreased from 1.6% in December 2014 to below 1% in June 2019 (see Chart 8).

In any event, in order to assess the potential impact of a no-deal Brexit on Spanish credit institutions, it should be taken into account that these exposures arise from the activity of subsidiaries with financial autonomy and a retail-oriented business model. This means that the main risk would be the potential deterioration of the British economy, which would entail a significant increase in NPL ratios and the possible depreciation of the pound sterling.

Chart 5
FOREIGN BANKS' EXPOSURE TO THE UNITED KINGDOM (a)
June 2019

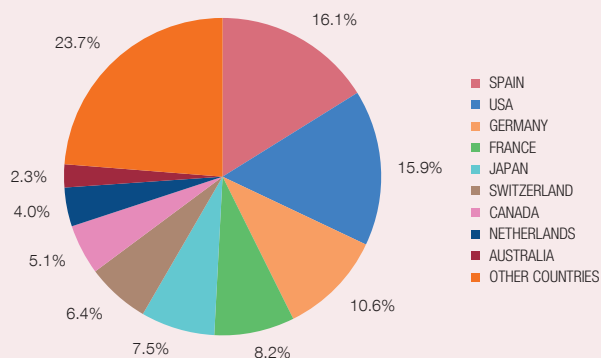
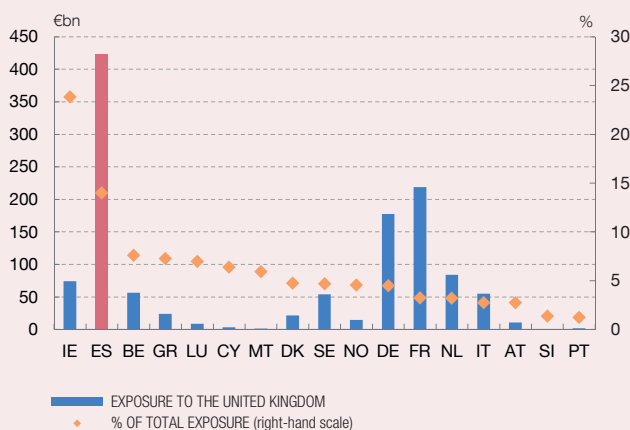


Chart 6
SIGNIFICANCE OF EXPOSURE TO THE UNITED KINGDOM (b)



SOURCES: BIS, EBA and Banco de España.

a Chart 5 shows the outstanding balance of loans based on the direct counterparty according to the consolidated banking statistics (CBS) of the BIS.
b Chart 6 shows the credit exposure to the United Kingdom of the main banks in EU countries (other than the United Kingdom), and the weight in total exposure.

4 See CBS (2019) of the BIS.
5 See transparency exercise (2018) of the EBA.

SPAIN'S MACROECONOMIC AND FINANCIAL EXPOSURE TO THE UNITED KINGDOM IN THE EVENT OF A NO-DEAL BREXIT (cont'd)

Chart 7
SPANISH BANKS' EXPOSURE TO THE UNITED KINGDOM
June 2019

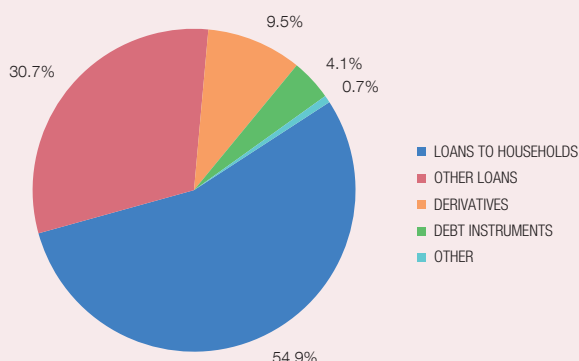
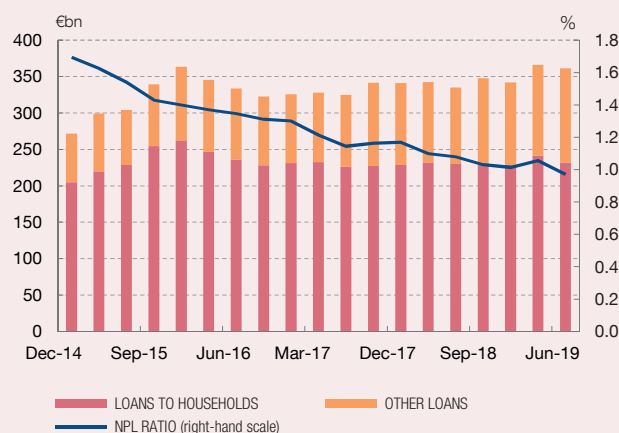


Chart 8
SPANISH BANKS' LOANS IN THE UNITED KINGDOM
June 2019



SOURCES: BIS, EBA and Banco de España.

In terms of financial institutions' operations, a disorderly Brexit could also give rise to financial market turbulence and to risks to Central Counterparty Clearing House (CCP) operations. In the latter case, mitigating measures have been adopted both in Europe and in Spain. The European Commission has expanded its consideration of CCPs that are eligible to operate with European financial institutions.⁶

In Spain, the government approved Royal Decree-Law 5/2019 of 1 March 2019 to ensure the continuity of financial contracts in case of a no-deal Brexit, including a requirement for British financial institutions operating in Spain to adapt their operations to national regulations as well as a transitional arrangement to facilitate this adaptation without disrupting operations.⁷

6 In December 2018 the European Commission issued an implementing decision determining, for a limited period of time, that the regulatory framework applicable to CCPs in the United Kingdom is equivalent to that existing for CCPs within the European Union in accordance with Regulation (EU) No 648/2012. The expiration date is 30 March 2020. A decision on equivalence, temporary and conditional, of the framework applicable to central securities depositories (CSDs) was also adopted. It expires on 30 March 2021.

7 See [Royal Decree-Law 5/2019](#) and [briefing note](#) of the Banco de España.

THE ECB'S RECENT MONETARY POLICY DECISIONS AND THEIR POSSIBLE EFFECTS ON BANK PROFITABILITY

The euro area's macroeconomic outlook has worsened considerably during the course of 2019. In particular, inflation decreased to 1% in July and the ECB's September forecast is for a rather weak recovery to 1.5% in 2021, well below the levels which may be considered consistent with the aim of holding inflation below, but close to, 2%. The ECB also revised downward the GDP growth forecast to 1.1% in 2019, 1.2% in 2020 and 1.4% in 2021. In view of this situation, at its 12 September meeting the ECB Governing Council adopted a series of monetary policy measures to ensure the sustained convergence of inflation towards its inflation aim.

The first of these measures was to lower the deposit facility rate by 10 basis points (bp) to -0.50%. Simultaneously, the Governing Council reinforced its forward guidance on interest rates. The Governing Council expects the key ECB interest rates to remain at their present or lower levels until it sees the inflation outlook robustly converge to a level sufficiently close to, but below, 2% within its projection horizon, and such convergence is consistently reflected in observed inflation dynamics. These measures seek to maintain an ample degree of monetary accommodation, particularly in the short to medium-term segments of the yield curve.

Second, it was decided to restart net asset purchases under the asset purchase programme at a monthly pace of €20 billion as from 1 November. The duration of this programme is undefined and the Governing Council expects it to end shortly before it starts raising the key

ECB interest rates. The aim is to extend monetary accommodation to the long end of the yield curve.

Third, the modalities of the new series of quarterly targeted longer-term refinancing operations (TLTRO III), which commenced in September, were changed. The interest rates applicable were reduced and the maturity of the operations was extended from two to three years. The aim of these adjustments is to preserve favourable bank lending conditions.

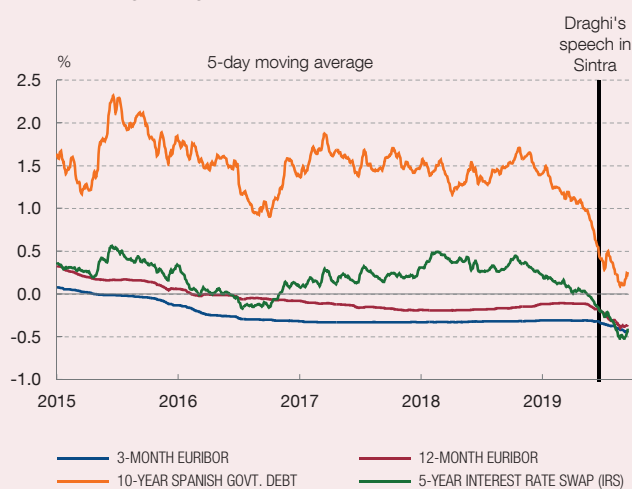
Finally, it was decided to introduce a two-tier system for reserve remuneration, in which the negative deposit facility rate (-0.5%) does not apply to a portion of banks' holdings of excess liquidity (i.e. their reserve holdings in excess of minimum reserve requirements). The purpose of this decision is to support the bank-based transmission of monetary policy in a negative interest rate environment.

The financial markets began to anticipate this accommodative bias of monetary policy, stepped up following Draghi's speech at Sintra on 18 June. This was reflected in lower interbank and debt market rates, particularly at longer terms (see Chart 1).

The effects of these monetary policy measures on bank profitability are transmitted through various channels and may be of differing sign. This makes the overall net impact difficult to quantify.

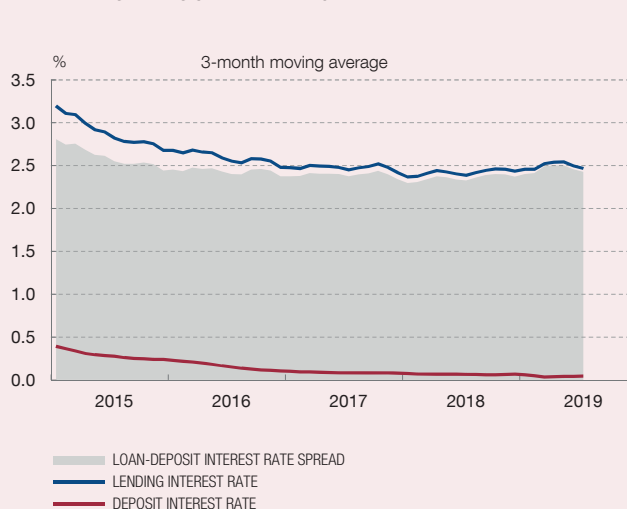
On the downside, these measures may contribute to a narrowing of the spread between lending rates and deposit

Chart 1
MARKET INTEREST RATES



SOURCES: Banco de España and Datastream.

Chart 2
BANK INTEREST RATES ON NEW LENDING



THE ECB'S RECENT MONETARY POLICY DECISIONS AND THEIR POSSIBLE EFFECTS ON BANK PROFITABILITY (cont'd)

Chart 3
BANK INTEREST RATES ON OUTSTANDING BALANCES

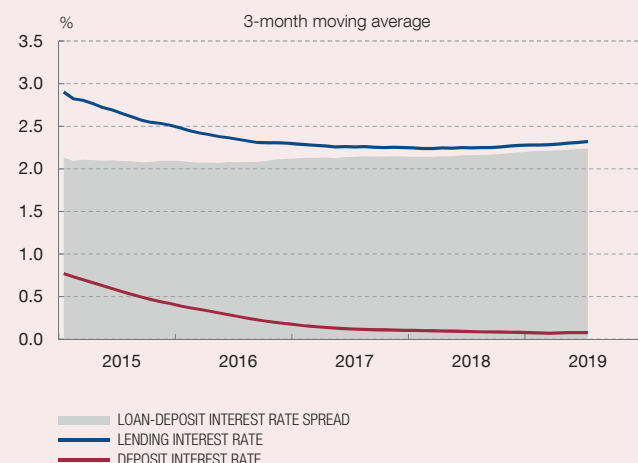
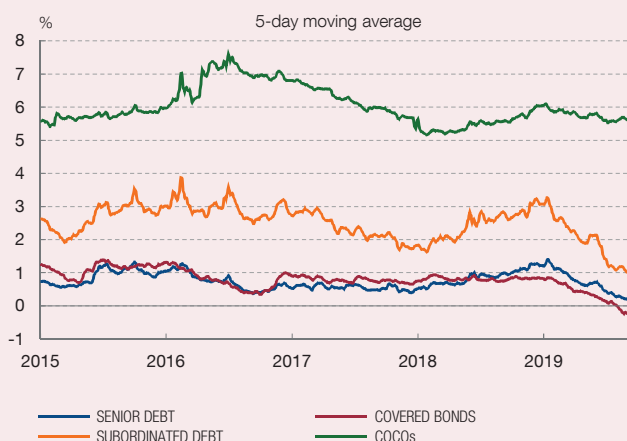


Chart 4
FUNDING COSTS OF SPANISH BANKS



SOURCES: Banco de España and Datastream.

rates. Indeed, falls in market interest rates may be expected to pass through to the return on lending to a greater extent than to the cost of deposits, since the latter has practically no room left before it turns negative. The remuneration of loans at variable interest rates, which accounts for a notable proportion of medium and long-term loans, will progressively adjust to the new prices as they are adjusted in line with changes in the reference indices (this usually occurs with a lag of less than one year).

Furthermore, if the decreases pass through to new transactions, as usually occurs, there will also be a cut in the average remuneration of assets through this channel. In previous bouts of interest rate cuts, the impact of the fall in loan remuneration was largely counteracted by a decrease in the cost of deposits. Indeed, the loan-deposit spread remained very stable both in new lending and in outstanding balances (see Charts 2 and 3). In fact, in the latter it has even widened somewhat in recent years, reflecting the favourable effect of the lower NPLs and the higher relative weight of consumer credit, with its wider margins. However, on this occasion the accommodative bias of monetary policy might be expected to cause the loan-deposit spread to narrow because there is little room to further reduce the average cost of deposits, since it is already near to zero.

Moreover, there is abundant theoretical and empirical evidence that, in a low interest rate environment, financial intermediaries may opt for more risky transactions in a quest for higher returns.¹ This is what is known as the “credit risk-taking channel” of monetary policy and it suggests that, to correctly assess the impact that measures of this type have on returns, it is necessary to take into account the risk incurred and, in any event, to keep a close eye on risk-taking, so that macroprudential measures can be taken if risk grows excessively.

On the upside, the monetary easing should help to improve economic activity and stimulate the flow of credit. The cost of wholesale bank funding has decreased significantly, coinciding with the intensification of the expansionary monetary policy, and in this case the value of zero does not act as a lower limit. Indeed, the average cost of some financing instruments, such as covered bonds, is now negative (see Chart 4). The lower cost of wholesale funding will also prompt the issuance of securities forming part of MREL (minimum required eligible liabilities), which banks must hold so that, in the event of resolution, they can be recapitalised by bail-in rather than bail-out.

Additionally, it should be taken into account that two measures approved by the ECB Governing Council

¹ See, for example, D. Martínez Miera and R. Repullo (2017): “Search for yield”, *Econometrica*, 85, pp. 351-378, or G. Jiménez, S. Ongena, J. L. Peydró and J. Saurina (2014): “Hazardous times for monetary policy: What do 23 million loans say about the impact of monetary policy on credit risk-taking?”, *Econometrica*, 82, pp. 463-505.

THE ECB'S RECENT MONETARY POLICY DECISIONS AND THEIR POSSIBLE EFFECTS ON BANK PROFITABILITY (cont'd)

(more favourable conditions on TLTRO III and the exemption of a reserve tranche) will contribute to raising per-unit net interest income (difference between the return on assets and the cost of liabilities expressed in terms of the volume of assets) of banks. All this should serve to moderate the narrowing of the net interest margin.

Other potentially favourable effects of the accommodative bias of monetary policy on bank profitability will flow through various channels. Firstly, the fall in yields on the debt securities held in banks' portfolios affected by the new measures (particularly the restarting of the asset purchase programme) and the consequent rise in their market price will generate gains. However, this effect gradually fades once interest rates stop falling and,

moreover, in recent years banks have substantially reduced their holdings in the available-for-sale portfolio, which, since it is valued at market price, is where such gains are recorded.

Secondly, the stimulus to the economy from the expansionary monetary policy measures and the lower cost of outstanding debt will have favourable effects on the quality of the credit portfolio, which will make for smaller credit losses and fewer non-earning assets (NPLs).

Lastly, the prices of real assets in bank portfolios will also increase, although in recent years this effect has become less important as banks' foreclosed asset portfolios have shrunk.

CREDIT STANDARDS AND MORTGAGE DEFAULT RISK

Royal Decree-Law 22/2018 equipped the Banco de España with a broad range of macroprudential tools, including borrower-based measures. These instruments, which will be applicable to, inter alia, the mortgage portfolio, will focus on limiting the debt service burden of mortgage payments for borrowers, or on reducing the level of leverage with respect to the available collateral. They will thus contribute to improving borrower solvency, since experience has shown that when loan terms ease and leverage increases or a greater debt service burden falls on borrowers, the risk of default usually increases.

This box summarises the results of a study analysing the effect of credit standards (and of their interactions) on the level of mortgage credit risk.¹ The exercise takes the terms and conditions of loans at their origination date and applies a battery of econometric models to estimate the probability of mortgage foreclosure proceedings or, alternatively, of a loan becoming non-performing. This analysis starts out by defining the indicators which other studies have found to be important² for determining

default risk. Thus, to measure leverage, two ratios were calculated which compare the loan amount with the house value: the loan-to-value (LTV) ratio, the denominator of which is the house appraisal value, and the loan-to-price (LTP) ratio, the denominator of which is the registered price of the house purchase transaction. The financial burden of borrowers is proxied by the loan service-to-income (LSTI) ratio, which is the proportion of a borrower’s annual income used for loan repayments at the origination date. Lastly, other characteristics of mortgages are examined, such as maturity, house type and location, borrower characteristics including employment status, and loan purpose.

Data from the Association of Registrars were used to develop a model to calculate the probability of mortgage foreclosure proceedings. Chart 1 shows that this probability tends to increase with increasing LTV and LTP ratios. However, the LTV ratio does not seem to show an effective association with higher risk for values above 80%. This is not so with the LTP ratio, for which risk grows more

Chart 1
LTV, LTP AND PROBABILITY OF MORTGAGE FORECLOSURE (a)

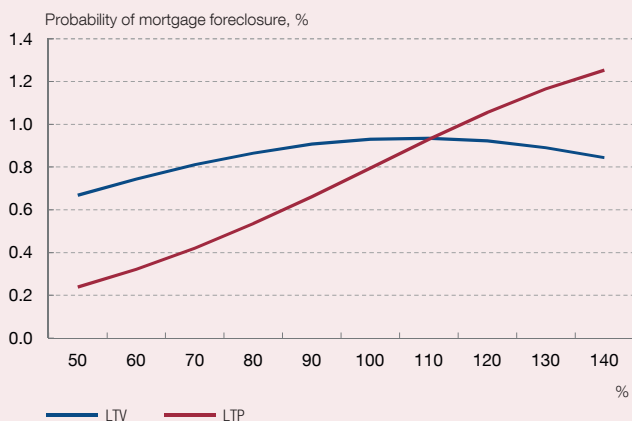
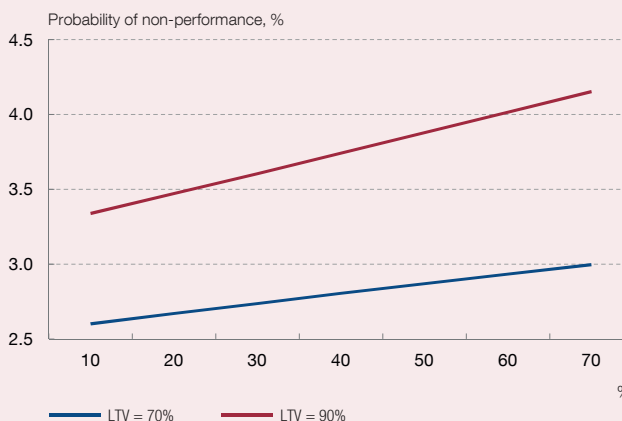


Chart 2
INTERACTION BETWEEN LSTI AND LTV AND PROBABILITY OF NON-PERFORMANCE (a) (b)



SOURCES: Spanish Association of Registrars (*Colegio de Registradores*) and European DataWarehouse.

- a The probability of occurrence of the stress event (mortgage foreclosure or non-performance) is estimated for loans which in theory have the same characteristics and which only change in the value of their LTV, LTP, maturity or LSTI, depending on the chart. Except in the case where the LTV ratio is above 80%, the confidence intervals of these estimates are small, so the changes in probability are statistically significant.
- b The LTP ratio is plotted on the horizontal axis.

1 See Galán, J.E. and M. Lamas (2019). *Beyond the LTV ratio: new macroprudential lessons from Spain*. Working Paper 1931. Banco de España.

2 Us was made of two databases which contain a sample of loans and include the individual information on characteristics of mortgages at origination. First, we took information from the Association of Registrars, which identifies all mortgages taken out in Spain since before the crisis. Second, we supplemented this information by that from a repository of securitisation data, namely the European DataWarehouse. In both cases, the information refers to house mortgages granted to individuals.

CREDIT STANDARDS AND MORTGAGE DEFAULT RISK (cont'd)

Chart 3
INTERACTION BETWEEN LTP AND MATURITY AND PROBABILITY OF MORTGAGE FORECLOSURE (a) (b)

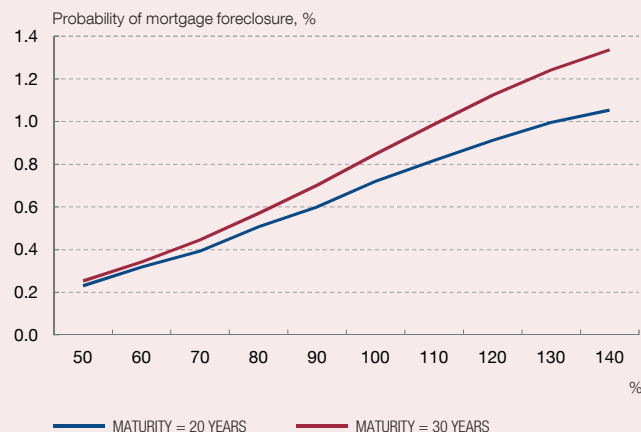


Chart 4
MORTGAGE-DEBT-AT-RISK INDEX (c)



SOURCES: Spanish Association of Registrars (*Colegio de Registradores*) and European DataWarehouse.

- a The probability of occurrence of the stress event (mortgage foreclosure or non-performance) is estimated for loans which in theory have the same characteristics and which only change in the value of their LTV, LTP, maturity or LSTI, depending on the chart. Except in the case where the LTV ratio is above 80%, the confidence intervals of these estimates are small, so the changes in probability are statistically significant.
- b The LTP ratio is plotted on the horizontal axis.
- c The index expresses the risk of new mortgage lending having regard to the volume of credit granted and to credit standards. The NPL ratio is that of loans for house purchase and renovation. The last year of this sample is 2017.

markedly over the whole distribution. In this connection, the LTP ratio seems to be better at distinguishing the risk of mortgage transactions. This suggests that house values estimated through appraisals should be supplemented by the effective transaction value.

Additionally, other models were estimated using a database containing information on securitised loans and on borrowers' main characteristics, including their income (European DataWarehouse). The results demonstrate the importance of taking into account the interactions between different measures of credit standards to explain the behaviour of troubled loans. In particular, Chart 2 shows the impact on the probability that loans will become non-performing for different LSTI ratios and for two LTV ratios (70% and 90%). It can be seen that not only does risk increase as the borrower debt service burden rises, but also that the more highly leveraged loans (i.e. higher LTV

ratio) are associated with a higher level of risk (and that it also rises more sharply). The probability of becoming non-performing in Chart 2 is higher than the probability of mortgage foreclosure in Chart 1, since the stress event considered is different.³

Chart 3, in which once again information from the database of the Association of Registrars is used, plots the changes in the probability of mortgage foreclosure as a function of the LTP ratio for two mortgage maturities (20 and 30 years). It can be seen that maturity starts to become an additional determinant of risk for high leverage values. From the standpoint of use of regulatory instruments, these results indicate that the simultaneous activation of limits on various credit standards would be more effective than the implementation of just one of them.

Lastly, the quantitative results of the study allow the construction of indicators to monitor the mortgage risk

3 In the securitised loan database (European DataWarehouse), all inflows into NPLs form part of the sample of troubled loans. In the Association of Registrars, the sample of troubled loans is constructed from the mortgages subject to foreclosure proceedings. This, along with the differing coverage of troubled loans in the two databases, explains the higher probability of the stress event in the securitised loan database.

CREDIT STANDARDS AND MORTGAGE DEFAULT RISK (cont'd)

related to the credit standards at the mortgage origination date. Thus Chart 4 depicts the behaviour of a mortgage-loan-at-risk index, reflecting the variation over time of future troubled loans, given the credit standards at the origination date and the amount of credit granted each year.⁴ In general, the expected value of loans at risk was observed to increase significantly before the crisis, basically due to the worsening credit standards. These

results contrast with the behaviour of the NPL rate of this portfolio, which remained low until the crisis, at which time it began to climb rapidly. The decrease in the risk indicator after the outbreak of the crisis seemed to be due to the sharp contraction in new mortgages and to the tightening of credit standards. These results suggest that the estimated index may be useful as a leading indicator of vulnerability in the mortgage market.

4 To construct the mortgage-loan-at-risk index, the probability of default estimated by the model for the loans originated each year is multiplied by the total value of the mortgages granted in that year. It is thus a measure of the expected value of the mortgages originated in a given year which would be at risk of future default given the credit standards at the origination date. An increase (decrease) in this index may reflect an increase (decrease) in the probability of default in the year the loan was granted (which in turn depends on the credit standards, including the LTV, LTP and LSI ratios), an increase (decrease) in the value of the mortgages granted that year, or an increase (decrease) in both. During the years of the sample assessed, on average 75% of the changes in the index were attributable to changes in the probability of default and 25% of them to changes in the value of the mortgages granted.

2

RISKS TO THE FINANCIAL SECTOR AND ITS RESILIENCE

2 RISKS TO THE FINANCIAL SECTOR AND ITS RESILIENCE

This chapter reviews the situation and risks of the Spanish financial system, paying special attention to the banking sector. Furthermore, it presents the results of the stress tests conducted for this sector and also its direct interconnections with non-residents and indirect interconnections with the rest of the financial sector. Since the last FSR the Spanish banking sector has continued the process of deleveraging against a background of low profitability and slightly improving solvency. The quality of the balance sheet has also improved due to decreasing NPLs and foreclosed assets. The stress tests on the banking sector show adequate resilience at aggregate level, underpinned by the aforementioned improvement in balance sheet quality. Under the adverse scenario, the stress test analysis incorporates also a limited ability to generate operating income by banks and lower credit growth than under the baseline scenario. The results are sensitive to the value adjustment assumptions applied to sovereign exposures.

2.1 Deposit institutions

2.1.1 Balance sheet structure, risks and vulnerabilities

Credit risk

Total lending by deposit institutions in Spain decreased by 1.2% year-on-year in June 2019. This was a significant moderation in the rate of fall, since in the same month a year earlier the decrease was 2.8%. As a result, total loans stood at €1,159 billion (see Chart 2.1). The decrease in lending was apparent in all the larger lending banks and affected loans to non-financial corporations most (see Chart 2.2). However, the fact that the median of the distribution, which does not take into account size differences between banks, is positive and rising in the non-financial corporations segment, suggests that lending by smaller banks is expanding.

Year-on-year growth of new loans to households and non-financial corporations moderated. Lending between June 2018 and June 2019 amounted to €459 billion, of which more than 70% were new loans (see Chart 2.1). In recent months new loans have held steady, so the year-on-year growth rate of new loans decreased to 4.6% and the increase in loan principal drawn down declined to 12.6%.

Financing extended by the banking sector to non-financial corporations through the purchase of their debt issues increased by €1.9 billion in 2019.

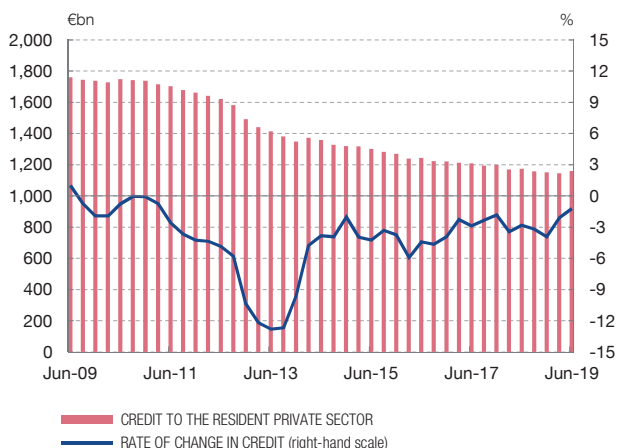
Chart 2.1

CREDIT TO THE RESIDENT PRIVATE SECTOR

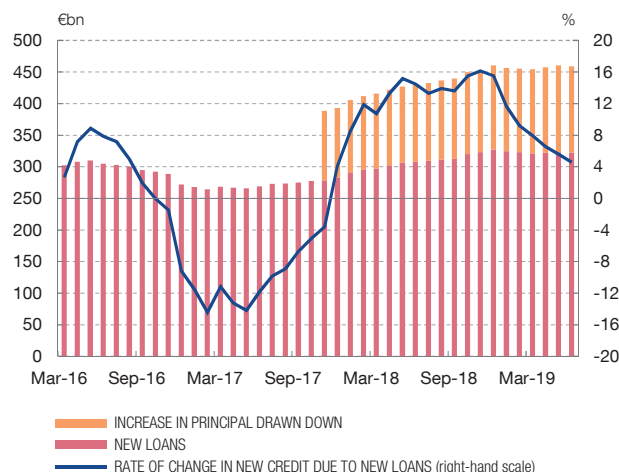
Business in Spain, ID

Total credit continued falling to stand at €1,159 billion in June 2019, although a slight pick-up in the past quarter had the effect of moderating its year-on-year rate of fall. New lending held steady in the past twelve months, which meant that its year-on-year change also moderated.

1 CREDIT VOLUME AND YEAR-ON-YEAR RATE OF CHANGE



2 NEW CREDIT VOLUME IN THE PAST 12 MONTHS AND YEAR-ON-YEAR RATE OF CHANGE (a)



SOURCE: Banco de España.

a Before December 2016 information was not available on the increase in the principal drawn down in existing loans. Consequently, the first data item for this series, accumulated over twelve months, is represented in November 2017. The rate of change shown only refers to new loans.

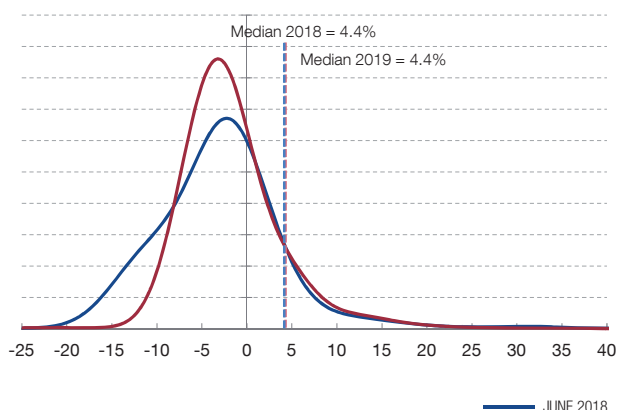
Chart 2.2

DISTRIBUTION BY INSTITUTION OF THE CHANGE IN CREDIT TO THE RESIDENT PRIVATE SECTOR

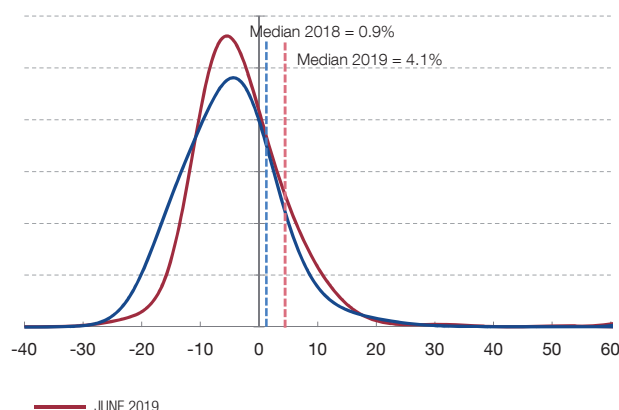
Business in Spain, ID

Credit to the resident private sector fell across the board in all the larger lending banks, although the median change at banks remained positive, both in total credit and, more particularly, in credit to non-financial corporations.

1 DISTRIBUTION OF THE YEAR-ON-YEAR RATE OF CHANGE (%) OF TOTAL CREDIT (a)



2 DISTRIBUTION OF THE YEAR-ON-YEAR RATE OF CHANGE (%) OF CREDIT TO NON-FINANCIAL CORPORATIONS (a)



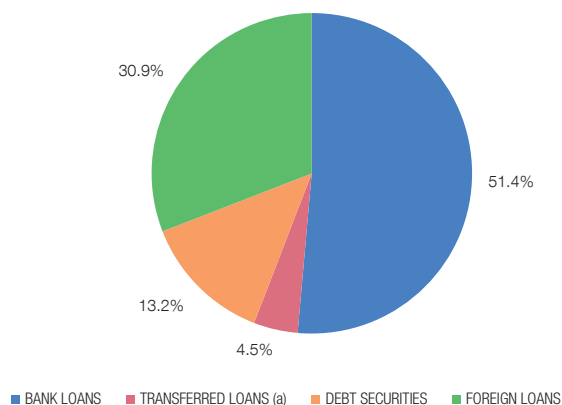
SOURCE: Banco de España.

a The graph shows the density function (or frequency distribution) of the year-on-year change of 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.

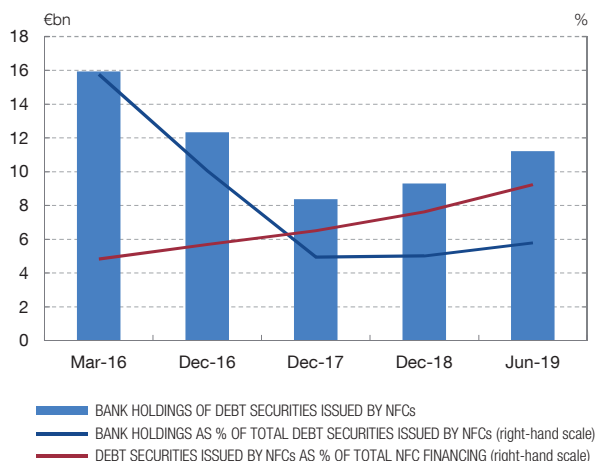
Chart 2.3

PARTICIPATION OF THE BANKING SECTOR IN THE FINANCING OF NON-FINANCIAL CORPORATIONS**Business in Spain, ID**

Although the main source of financing of non-financial corporations is bank loans, the weight of debt securities has increased by more than 4 pp since March 2016 to stand at 13.2% in June 2019. The weight of debt securities issued by non-financial corporations that are held by deposit institutions decreased significantly at the beginning of the Eurosystem corporate bond purchase programme in June 2016, subsequently steadying at nearly 10% of the total debt issuance of these firms.

1 FINANCING SOURCES OF NON-FINANCIAL CORPORATIONS
June 2019

2 BANK HOLDINGS OF DEBT SECURITIES ISSUED BY NON-FINANCIAL CORPORATIONS (NFCs)



SOURCE: Banco de España.

a Transferred loans include those removed from the balance sheet, those transferred to securitisation funds and other transfers.

As shown in Chapter 1 (see Chart 1.10), the balance of outstanding debt issued by Spanish non-financial corporations has expanded significantly between 2016 and 2019. Indeed, in June 2019 these securities represented 13.2% of total financing to non-financial corporations (see Chart 2.3). Deposit institutions can also finance these firms indirectly by acquiring those securities. Specifically, their holdings in June 2019 stood at €11 billion, up €3 billion compared to 2017. Hence, the weight of banks' holdings in total issues held steady at slightly below 10%.

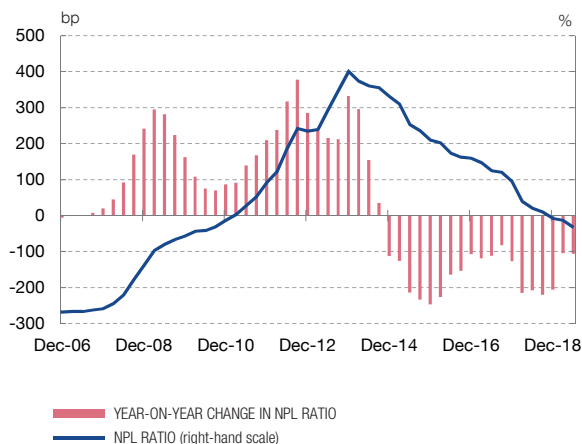
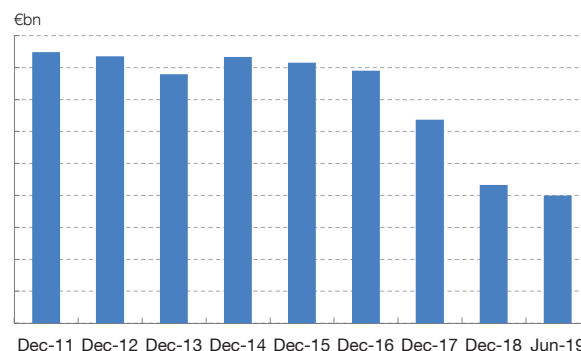
The behaviour of lending was underpinned by the stabilisation of financing conditions. The interest rates on new loans have remained at much the same level over the past 12 months for both households and non-financial corporations. At mid-2019, the approval rate of loans requested by non-financial corporations from banks with which they were not currently dealing stood at 31% of the total number of applications received, practically the same rate as a year earlier.

Forborne loans continued to decrease over the past year to stand at 5.4% of total credit to the resident private sector in June 2019. The year-on-year rate of change of these loans was -20.2%, a decline which was 2.7 pp smaller than a year earlier. This decrease was across the board in non-financial corporations (-21.3%) and households (-18.9%).

Chart 2.4

NPL RATIO AND FORECLOSED ASSETS

The NPL ratio of the resident private sector continued its decline of recent years to stand at 5.3% in June 2019, representing a fall of more than 1 pp with respect to the same month a year earlier. Foreclosed assets showed a further fall in June 2019 to stand below €40 billion.

1 NPL RATIO. RESIDENT PRIVATE SECTOR
Business in Spain, ID2 FORECLOSED ASSETS
Business in Spain. Consolidated data

SOURCE: Banco de España.

The NPL ratio of the resident private sector in business in Spain continued to decrease to stand at 5.3% in June 2019. As a result, the cumulative decrease from the high in December 2013 is 8.7 pp (see Chart 2.4). In year-on-year terms, NPLs decreased by 17.6%, a smaller drop than in 2018, with a portion of the decline this year being due to wholesale disposals of NPL portfolios by some banks. The improved credit quality is generally observed in the various sectoral portfolios, except that of consumer credit, where the NPL ratio increased by 0.5 pp to 5.6% in the 12-month period to June 2019.

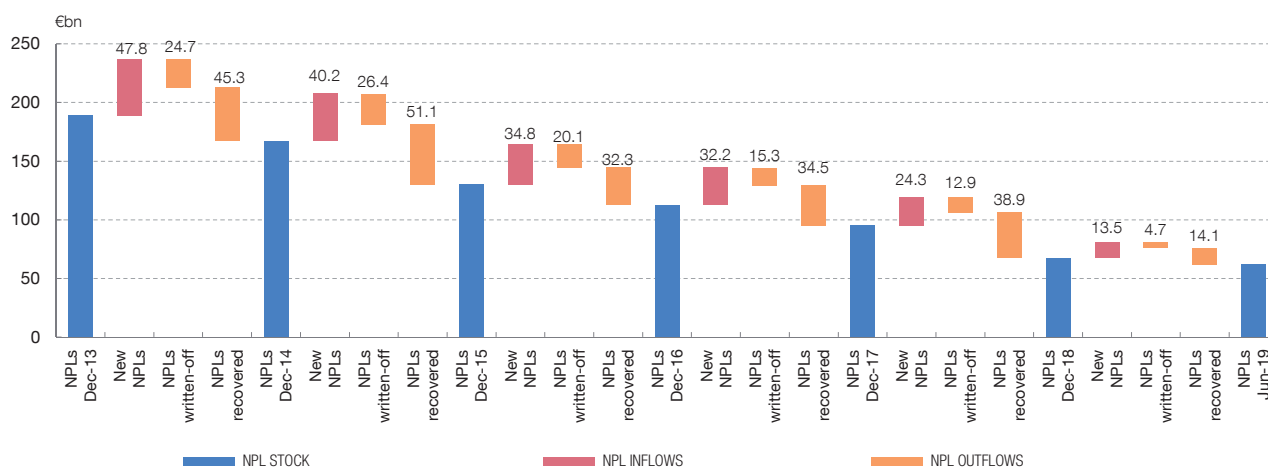
However, from the standpoint of flows of the resident private-sector portfolio, the inflows of new NPLs quickened in the first half of 2019. In the first six months of the year, inflows of NPLs reached €13.5 billion (see Chart 2.5). This behaviour represented an increase in NPL inflows with respect to the figure of €12.4 billion in the first half of 2018. However, the outflows of write-offs and recoveries were high enough to offset the behaviour of inflows, so the total volume of NPLs decreased in the first half of 2019.

Foreclosed assets decreased by €3.3 billion in the first six months of 2019. Thus the downward trend of recent years continued (see Chart 2.4). Foreclosed assets have fallen by 50% from the high of 2011. Looking at their composition, those from construction and real estate development loans continue to account for more than half, while the relative proportion of those from household loans for house purchase decreased to 26.2%.

Chart 2.5

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

In the first half of 2019, NPLs decreased to €61.9 billion. The rate of fall was more moderate than in previous periods. The rates of change of outflows to write-offs and of recoveries were similar to those in 2018 as a whole, while the rate of inflows to new NPLs was higher.



SOURCE: Banco de España.

a Shown beside each bar is the amount, in € billion, of each NPL inflow or outflow. NPLs recovered include non-performing loans that become performing again, and foreclosed assets and NPLs sold to third parties. The chart shows annual inflows and outflows to December 2018 and the flows in the first half of 2019.

The consolidated total assets of Spanish deposit institutions grew year-on-year by 3.4% in June 2019. This was mainly a result of their operations abroad, where their financial assets (particularly loans) increased by 10.5% year-on-year, while the financial assets of business in Spain decreased by 1.9%. This geographical diversification of Spanish banks took their financial assets abroad to above 50% of their total financial assets in June 2019.

Loans abroad from Spanish banks are concentrated in Europe and Latin America. In the last four years the relative weight of loans in the United Kingdom has decreased by nearly 5 pp, while that of loans in the rest of Europe has increased by more than 10 pp to 29.5%. The relative weight of loans in Latin America decreased to stand at 25.5% of total loans abroad in June 2019 (see Chart 2.6).

Consolidated non-performing assets, including loans and debt securities, decreased by 12.4% year-on-year (see Annex 1). Hence the total NPL ratio decreased to 3%, down 54 bp from June 2018. In the past four years, NPLs abroad have decreased in all jurisdictions except Turkey, where the NPL ratio was 5.9% in June 2019 (2.2% in June 2015). The highest decrease in the ratio was in Portugal, where it fell by 4.7 pp to 4% (see Chart 2.6).

Liquidity and financing conditions

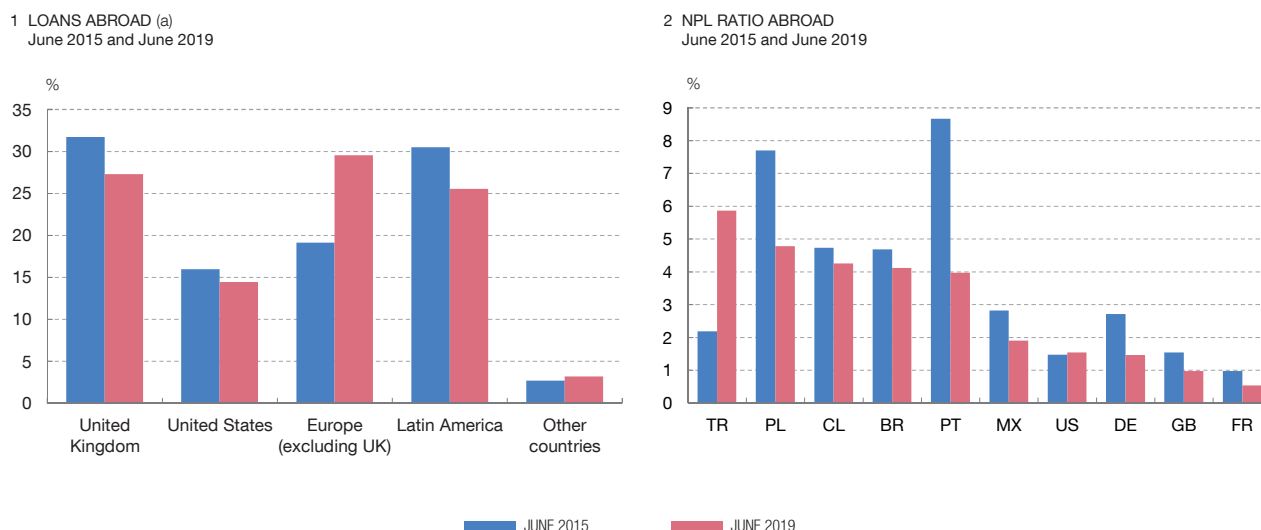
In June 2019, the liquidity coverage ratio (LCR) of Spanish banks stood at 162.2%. It thus amply exceeded the regulatory minimum requirement (100%)

Chart 2.6

LOANS ABROAD

Consolidated data

In the past four years, loans to Europe (excluding the United Kingdom) have increased to account for nearly 30% of loans abroad, while loans to the United Kingdom and Latin America have decreased by 5 pp. The NPL ratio abroad continues to be uneven across countries, with an across-the-board decline, except in Turkey where the ratio stood at 5.9% in June 2019.



SOURCE: Banco de España.

a The chart shows at each date the loans in each geographical area as a proportion of the total loans outside Spain.

and also the European average (149.2%). Specifically, the data of the European Banking Authority (EBA)¹ indicate that the ratio in Spain is higher than in the main EU countries. In the past 12 months the LCR has increased in Italy, Spain and France, while there has been a decrease in the liquidity of banks in Germany and, particularly, the United Kingdom (see Chart 2.7).

The liquidity provided by the Eurosystem to the banking system will probably increase as a result of the monetary easing measures recently approved by the ECB. In fact, the decision to reactivate net purchases from 1 November will entail a monthly increase in the Eurosystem balance sheet of €20 billion per month, following the stability prevailing since the beginning of this year. Meanwhile, the volume of refinancing operations has not varied significantly because the bulk of them relate to four long-term transactions known as TLTRO-II, which will not mature until June 2020² (see Chart 2.8). In March 2019 the Governing Council of the ECB decided to launch a new series of seven quarterly transactions between September 2019 and March 2021 (TLTRO-III), the initial conditions of which were improved

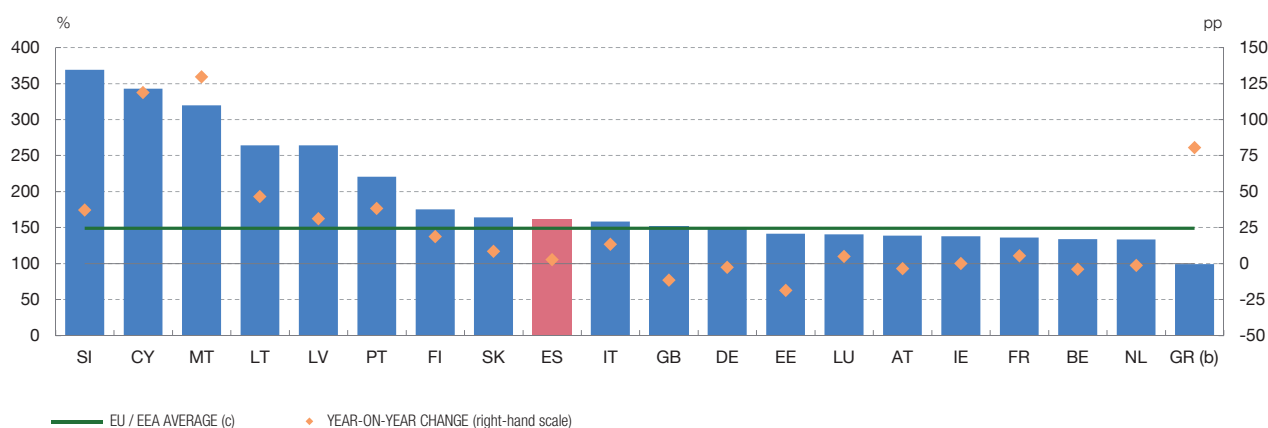
1 See <https://eba.europa.eu/risk-analysis-and-data/risk-dashboard>.

2 Banks have the option of early redemption two years after the settlement of each transaction, which explains the decrease in the outstanding balance of these transactions from the €723 billion cited in the previous FSR.

Chart 2.7

**LIQUIDITY COVERAGE RATIO. EUROPEAN COMPARISON
SSM COUNTRIES AND UNITED KINGDOM. June 2019 (a)**

The liquidity coverage ratio at European level was 149.2% in June 2019 (compared with 148.3% in June 2018). The EU countries as a whole had a ratio above the required minimum of 100%, except for Greece (where it has, however, increased significantly in the past year).



SOURCE: EBA.

- a The data refer to a sample of 150 institutions, and the LCR is calculated as the weighted average of the ratios of each country's institutions.
- b The sovereign debt crisis prompted Greek banks to use their LCR liquidity buffer, resulting in LCR levels below the required minimum of 100% (as from December 2017, when Greece reported for the first time on the LCR ratio, which has since stood below 100%). Article 4(3) of Commission Delegated Regulation (EU) 2015/61 of 10 October 2014 allows liquid assets to be monetised in periods of tension.
- c EBA data include Iceland.

at its meeting on 12 September. The first tender assigned a relatively small amount,³ possibly because the banks participating in this first tender were not aware of these new conditions. Box 1.2 sets out in detail the measures approved by the ECB's Governing Council last September and their implications for financial stability.

Activity on the unsecured money markets in the euro area continues to be very low. The trading volume on the purely interbank market is very small and continues to decrease for the reasons analysed in previous FSRs⁴ (see Chart 2.8). By contrast, deposits at banks placed by financial institutions without access to the ECB deposit facility are much larger, as reflected by the higher average volume of trading indexed to the €STR rate, which has grown to somewhat more than €37 billion in 2019, compared with €2.5 billion of interbank loans indexed to EONIA.⁵ These banks have ample liquidity, partly as a result of the Eurosystem asset purchase programmes. This explains why the €STR rate, which also includes these transactions, is below the EONIA, which is calculated solely from loans between banks, and below

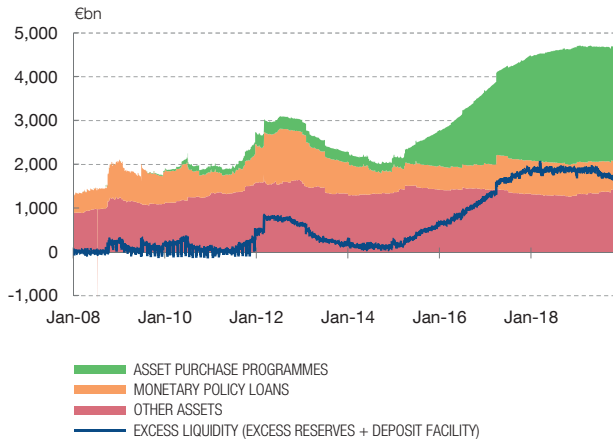
³ €3,396 million granted to 28 banks.
⁴ Specifically, the excess liquidity in the system, the new regulatory framework and the preference for repo transactions secured by high-quality collateral.
⁵ The reference market for setting the €STR rate includes all bank deposits placed by financial institutions (not necessarily banks). By contrast, the EONIA is set using as a reference only interbank transactions.

Chart 2.8

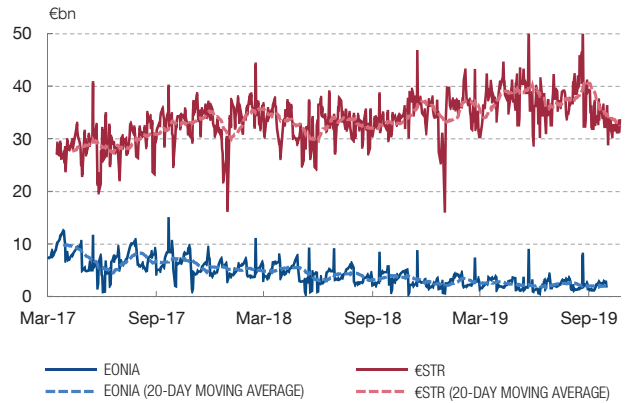
WHOLESALE FUNDING

Activity on the unsecured money markets in the euro area continues to be very low, while the secured money markets (repos) increasingly account for the bulk of the volume traded on the European markets. In the first three quarters of 2019, Spanish banks stepped up their aggregate issuance with respect to the same period of 2018.

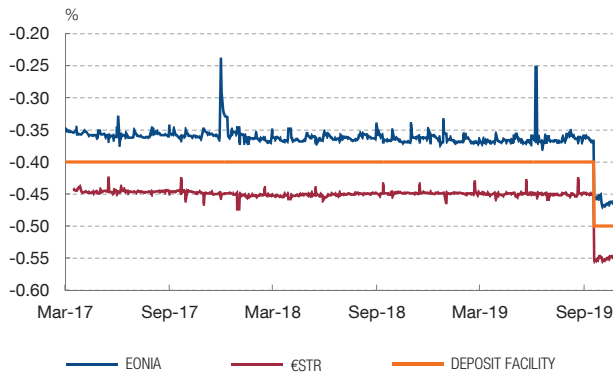
1 EUROSISTEM BALANCE SHEET AND EXCESS LIQUIDITY



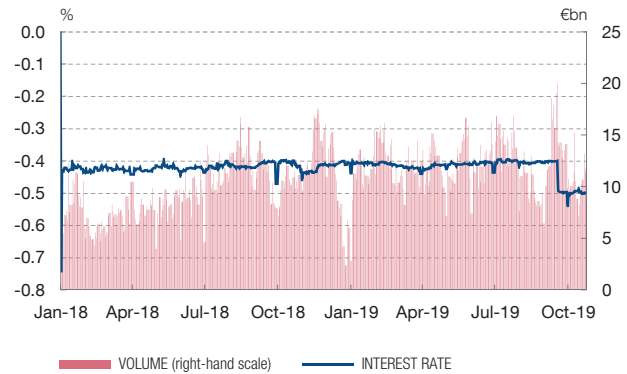
2 TURNOVER IN EU MONEY MARKETS



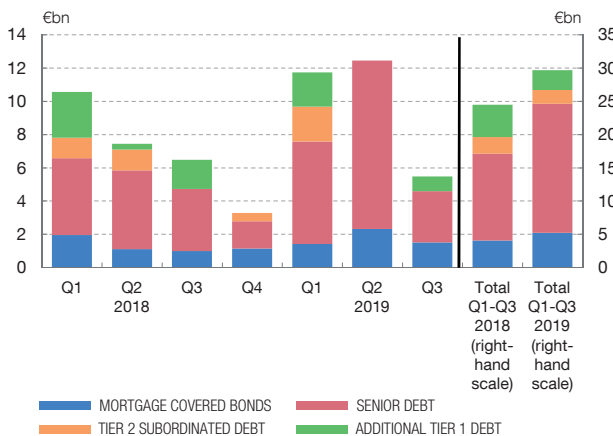
3 EU MONEY MARKET RATES



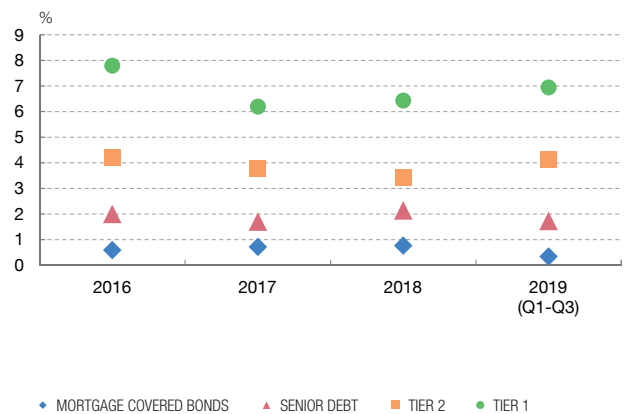
4 EUROPEAN REPO MARKET INTEREST RATES (GC POOLING EUR)



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



6 AVERAGE COST OF ISSUANCE FOR DEPOSIT INSTITUTIONS IN MAIN EUROPEAN COUNTRIES



SOURCES: Bloomberg, Dealogic, Eikon, Thomson Reuters and Banco de España.

a Includes covered bonds, senior debt, subordinated debt eligible as tier 2 capital and debt eligible as additional tier 1 capital. Retained issues are not included.

even the deposit facility rate (DFR). In any event, both the EONIA and the €STR reflect in full the ECB's decision to lower the DFR by 10 bp⁶ (see Chart 2.8).

The September Governing Council meeting also decided to apply a two-step remuneration system to the reserves deposited by deposit institutions at the central bank. This exempted them from paying the DFR (–0.5%) over an amount equal to six times the minimum reserve, which is remunerated at the rate on main refinancing operations (0.0%). Assuming that the reserves of Spanish banks in this deposit facility do not change, it is estimated that a moderate benefit will result from the introduction of this remuneration system. Meanwhile, for those banks with non-exempt surplus reserves, the positive effect will be partially mitigated by the decline in the deposit facility rate to –0.5%, which will somewhat reduce the net effect of the two measures announced.

The secured money markets (repos) increasingly account for the bulk of the volume traded on the European money markets. These markets are used by banks to manage their growing need for collateral derived largely from changes in banking regulation, against a background of low collateral availability due to scant security issuance and the ECB purchase programmes. In this respect, it should be noted that at mid-September tensions emerged in the US dollar repo market when a sharp rise in repo rates pushed the FED monetary policy reference rate to the high band of its target range (which it exceeded on some occasions). This event led the FED to intervene⁷ in order to reduce repo rates to their normal levels and keep its official interest rate within the target range. The euro area was not affected and the repo rate in fact decreased in line with the cut in the DFR (see Chart 2.8).

In the first three quarters of 2019, Spanish banks stepped up their issuance of debt instruments compared with the same period of 2018. However, there was a certain unevenness by type of debt instrument, as follows. The volume of covered bonds and, in particular, senior debt, increased (see Chart 2.8) and, contrariwise, the issuance of subordinated debt, particularly that eligible as additional Tier 1 capital, decreased with respect to the same period a year earlier. As to the cost of issuance by type of instrument, this showed the opposite behaviour. The cost of subordinated debt, whether eligible as Tier 1 or Tier 2, increased, and that of senior debt and covered bonds decreased (see Chart 2.8).

The outstanding balance of resident private-sector deposits continued to increase, driven by sight deposits. The negative interest rate environment

⁶ Decision of the ECB Governing Council of 12 September 2019.

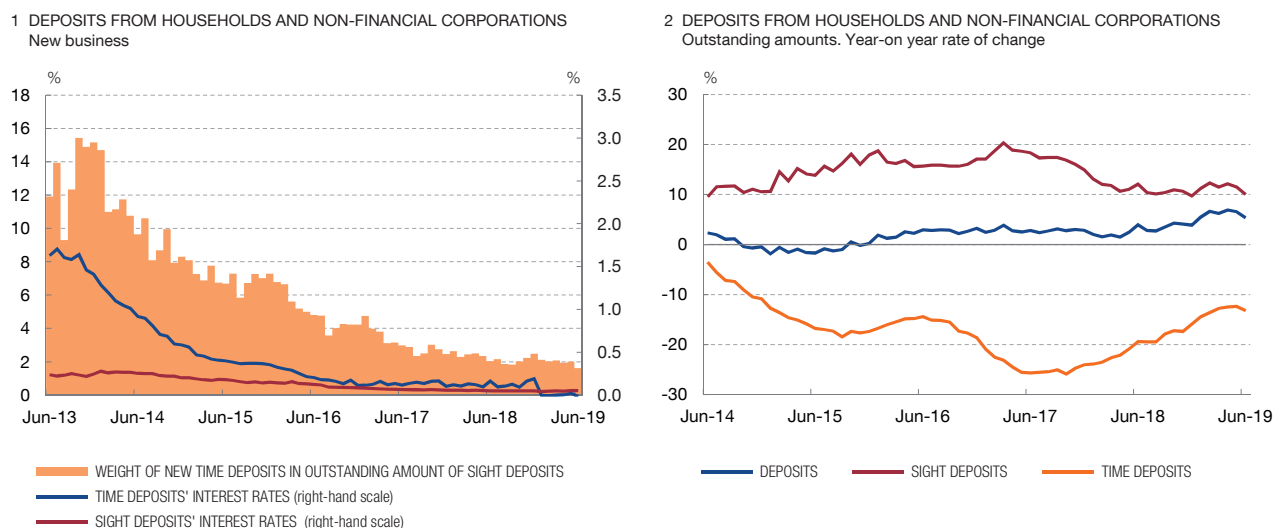
⁷ The interventions were made through a series of overnight repos and three transactions with a maturity of 14 days.

Chart 2.9

RETAIL FUNDING

Business in Spain, ID

Interest rates on new time deposits by the resident private sector have decreased significantly in recent years to levels near 0%. This trend in deposit yields has been accompanied by a lower volume of new time deposits, whose relative weight has fallen with respect to the outstanding balance of sight deposits. Furthermore, the outstanding balance of time deposits has also declined, albeit more slowly than in previous years, while sight deposits continue to grow.



SOURCE: Banco de España.

has caused the remuneration of new time deposits by the resident private sector to decrease significantly since 2015 and converge with the interest rates on sight deposits, at around 0%.⁸ It is therefore not surprising that the volume of new time deposits has also fallen and in June 2019 it stood below 2% of the outstanding balance of sight deposits, compared with relative weights above 15% in 2013 (see Chart 2.9). Thus the outstanding balance of time deposits was down to 16.3% of the total in June 2019, compared with 53.2% in June 2013, showing year-on-year rates of change below -10% since end-2014, as against growth rates above 10% for sight deposits (see Chart 2.9).

2.1.2 Profitability and solvency

Profitability

In the first half of 2019, the consolidated profit attributable to the parent entity of the Spanish banking system as a whole was down 11.5% year-on-year.

⁸ Rates have even turned negative in the case of non-financial corporations. However, the negative rates seem to be rather exceptional, since the volume of new time deposits is very low (less than €5,000 million per month) in comparison with new demand deposits (more than €200,000 million), and they relate to specialised operations.

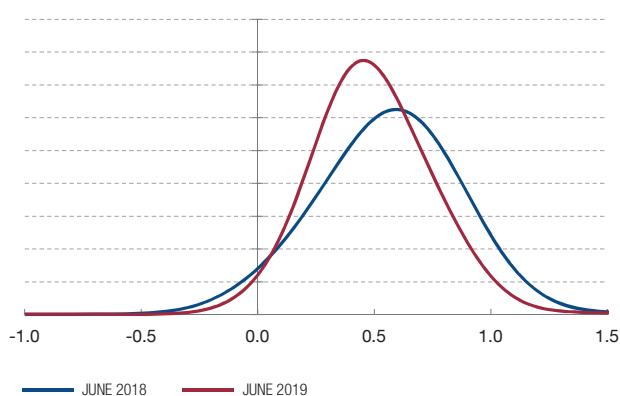
Chart 2.10

PROFITABILITY DISTRIBUTION

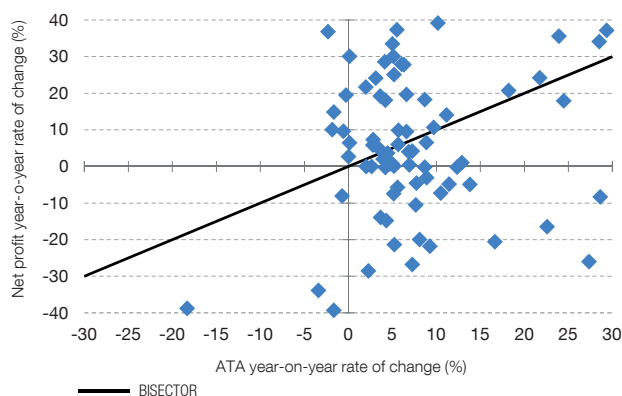
Consolidated data

The fall in ROA between June 2018 and June 2019 was broad-based across institutions. Most institutions posted year-on-year growth in ATA, although for a large number this did not translate into an increase in profit, or the increase was insufficient to maintain the return on assets.

1 ROA DISTRIBUTION (%) (a)



2 CHANGES IN ATA AND NET PROFIT. JUNE 2019



SOURCE: Banco de España.

a The chart shows the density function (or frequency distribution) of the return on assets for Spanish deposit institutions, weighted by average total assets. This density function is approximated using a kernel estimator, which makes possible a non-parametric estimation of the density function, providing a continuous, smoothed graphic representation of this function.

Consequently, the returns on assets (ROA) and on equity (ROE)⁹ fell by 8 bp and 1 pp, to 0.49% and 6.6%, respectively. As seen in Chart 2.10, the decrease in the ROA was broadly based across institutions, although it was larger in the case of the more profitable ones. Chart 2.10 also shows that in many institutions the decline in the ROA was a result of the fact that the increase in their assets in the period was not accompanied by a sufficient improvement in profit to sustain the rate of return.

The decline in profit is explained by a significant reduction in gains on financial assets and liabilities, while extraordinary operating expenses and, for the first time since 2012, impairment losses increased (see Chart 2.11). Gains on financial assets and liabilities were down 33% (6 bp in terms of ATA), which resulted in a slight decline (0.3%) in gross income. Operating expenses rose by almost 4%, leading to a fall in net operating income of 4.5%. The increase in operating expenses over the past year has been largely due to agreements to reduce staff at certain

⁹ To calculate the ROA and ROE ratios used in this section, the numerators are net profit attributable to the parent entity, while the denominators are four-quarter averages of total assets (ROA) and of own funds (ROE). The EBA's definition of the ROA and ROE uses net profit after tax in the numerators and, for the denominators, the average of the current and the preceding year's total assets (ROA) and total equity (ROE). As a result, there may be small differences between them. However, international comparisons use the EBA's definition (Chart 2.13), to ensure that the ratios are calculated in the same way across jurisdictions.

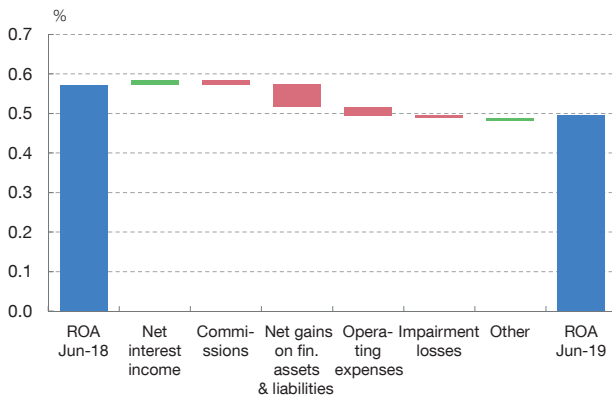
Chart 2.11

COMPONENTS OF PROFITABILITY

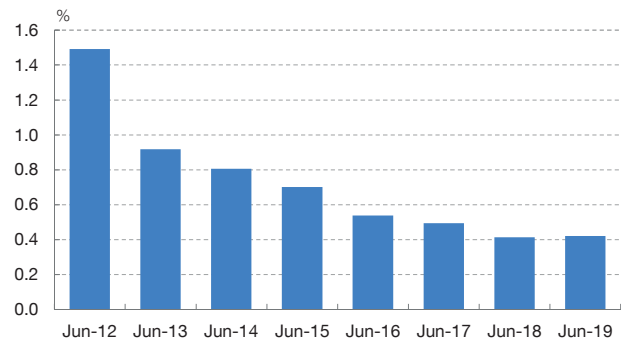
Consolidated data

The fall in net gains on financial assets and liabilities, the increase in operating expenses and the increase in impairment losses were the main determinants of the fall in profit in the first half of 2019. Impairment losses increased after six years of continuous decline.

1 BREAKDOWN OF THE CHANGE IN PROFIT (a)
Consolidated profit attributable to the controlling entity as a percentage of ATAs



2 FINANCIAL ASSET IMPAIRMENT LOSSES AS % 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 June 2019 with respect to June 2018.

institutions. In addition, impairment losses, which had been falling uninterruptedly since 2013, rose by 3.9%. Meanwhile, net interest income posted an increase of close to 3%, while net fees and commissions remained relatively steady.

In business in Spain, operating expenses have remained flat since late 2013.

As a result, the efficiency ratio and the ratio of operating expenses to total assets have deteriorated at most institutions. Specifically, Chart 2.12 shows that the efficiency ratio at the individual level, without taking into account compensation for dismissals, has increased (worsened) by around nine percentage points since 2014, to stand at 56.2%. The ratio of operating expenses to total assets has also increased at most institutions. As regards its composition, Chart 2.12 shows that the weight of personnel costs has fallen while that of IT and communications, outsourced services and depreciation has increased, reflecting to some extent the digitalisation and technological transformation being undertaken by institutions. Operating expenses are one of the most important levers that institutions can directly control in order to increase the profitability of their business.

In June 2019, Spanish institutions continue to post consolidated profitability above the European average. EBA data for June 2019 (the latest published),¹⁰ show that Spain is above major European jurisdictions (see Chart 2.13), with the exception

10 See <https://eba.europa.eu/risk-analysis-and-data/risk-dashboard>.

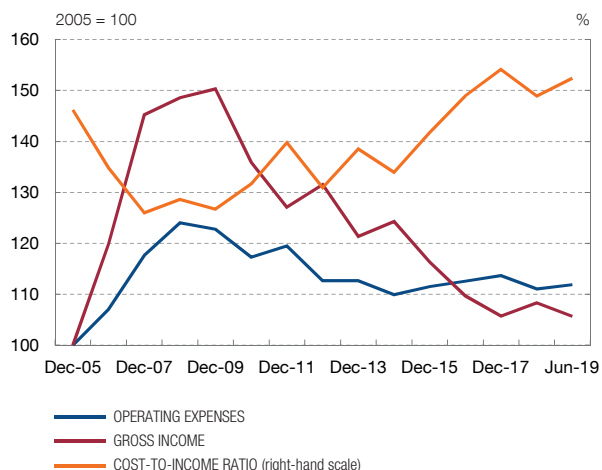
Chart 2.12

OPERATING EXPENSES AND COST-TO-INCOME RATIO

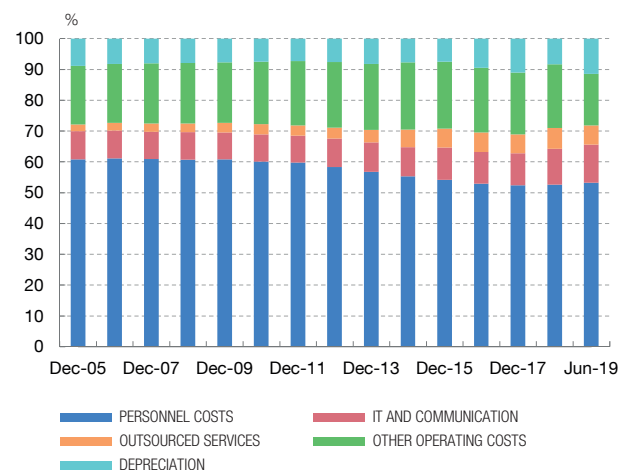
Business in Spain, ID

The cost-to-income ratio (excluding compensation for dismissal) at the individual deposit institution level for business in Spain has increased (deteriorated) since 2014. This increase has been accompanied by a higher ratio of operating expenses to total assets for deposit institutions. During these years the weights of IT and communication costs, outsourced services and depreciation in total operating expenses have increased, while the weight of personnel costs has fallen.

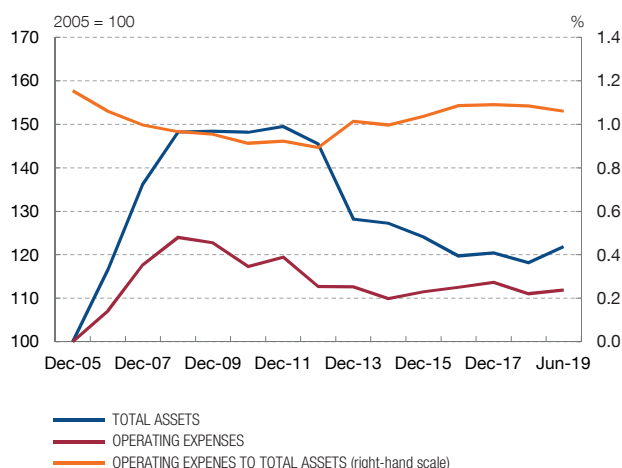
1 COST-TO-INCOME RATIO (a)



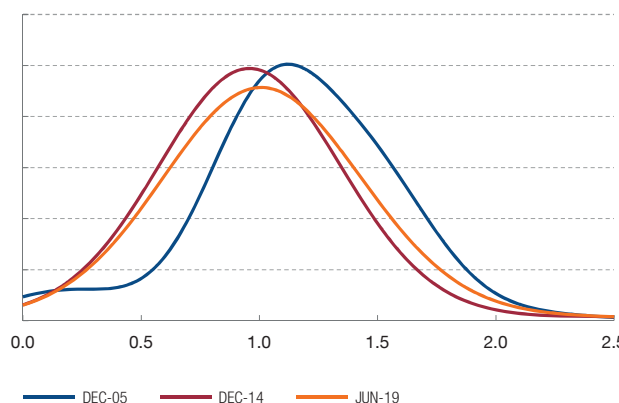
2 OPERATING EXPENSES



3 RATIO OF OPERATING EXPENSES TO TOTAL ASSETS



4 WEIGHT DISTRIBUTION OF OPERATING EXPENSES TO TOTAL ASSETS (b)



SOURCE: Banco de España.

- a The cost-to-income ratio is defined as the ratio of operating expenses to gross income. The June 2019 data have been annualised.
- b This panel shows the density function (or frequency distribution) of operating expenses as a percentage of total assets for deposit institutions. This density function is approximated using a kernel estimator, which makes possible a non-parametric estimation of the density function, providing a continuous, smoothed graphic representation of this function.

of Italy. The efficiency ratio at consolidated level of the Spanish institutions was among the lowest (best) in Europe. Box 1.2 analyses in detail the impact of the new monetary policy measures announced by the ECB in September 2019 on the net interest income of deposit institutions, beyond the moderate positive impact associated with the two tier system of ECB deposit facility rates. An analysis of the comparative profitability of European and US banks and how this is valued by the market can be found in Box 2.1.

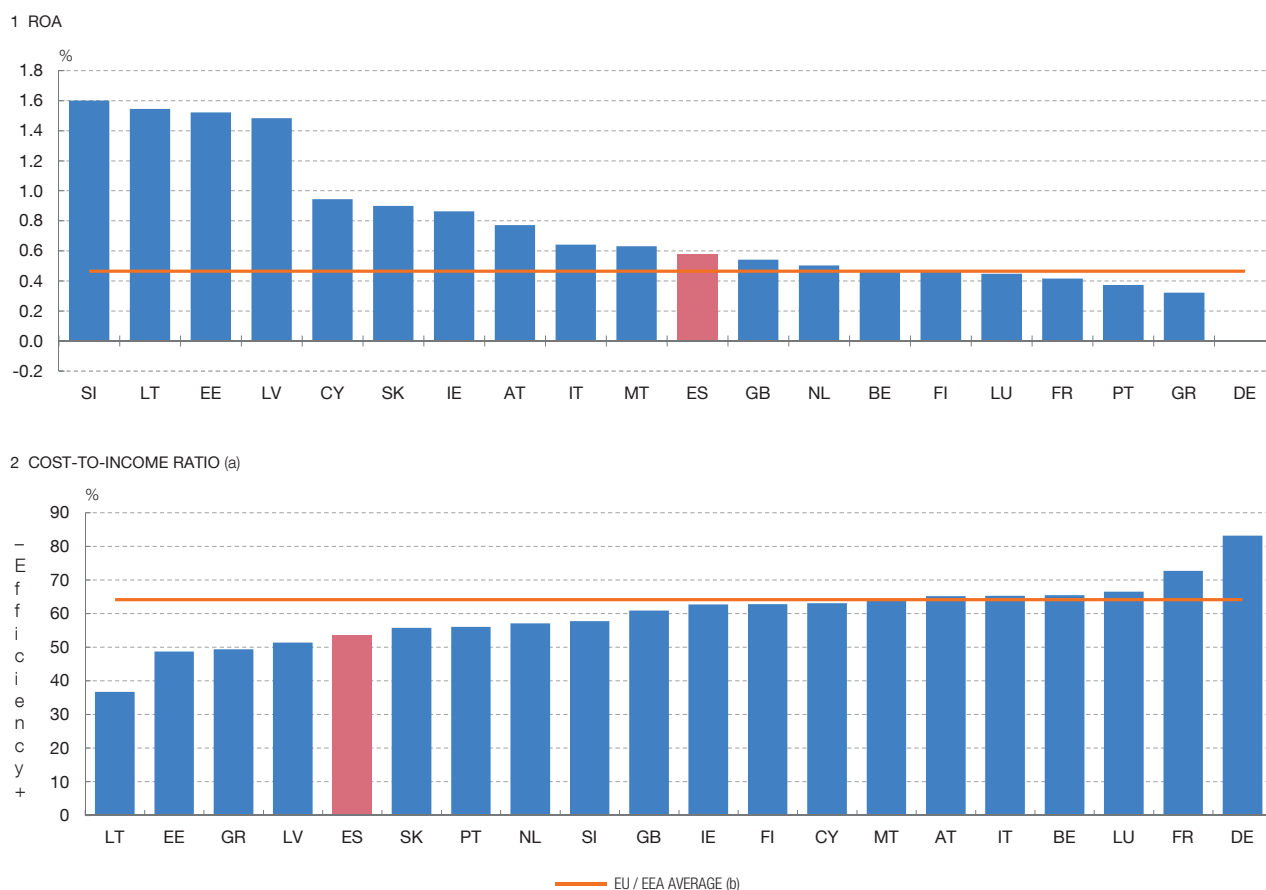
Chart 2.13

EUROPEAN COMPARISON OF PROFITABILITY AND EFFICIENCY MEASURES

SSM COUNTRIES AND UNITED KINGDOM. June 2019

Consolidated data

The return on assets of the main Spanish deposit institutions stands above the European average (0.47%) and is higher than in the main EU economies. Their cost-to-income ratio, meanwhile, is among the lowest (best) in the EU, standing slightly above 50%.



SOURCE: EBA.

- a The cost-to-income ratio is defined as the ratio of operating expenses and depreciation to net operating income.
- b EBA data include Iceland.

Solvency

The ratio that measures the highest quality capital, common equity Tier 1 (CET1), increased by 36 bp over the 12 months to June 2019, to stand at 12.2%. Similarly, the Tier-1 and total capital ratios rose by 37 and 32 bp,¹¹ to stand at 13.6% and 15.4%, respectively (see Chart 2.14). This improvement in institutions' solvency occurred in a context of rising risk-weighted assets (1.1% year-on-year), and despite the negative impact of the introduction of IFRS 16 on criteria for the recognition,

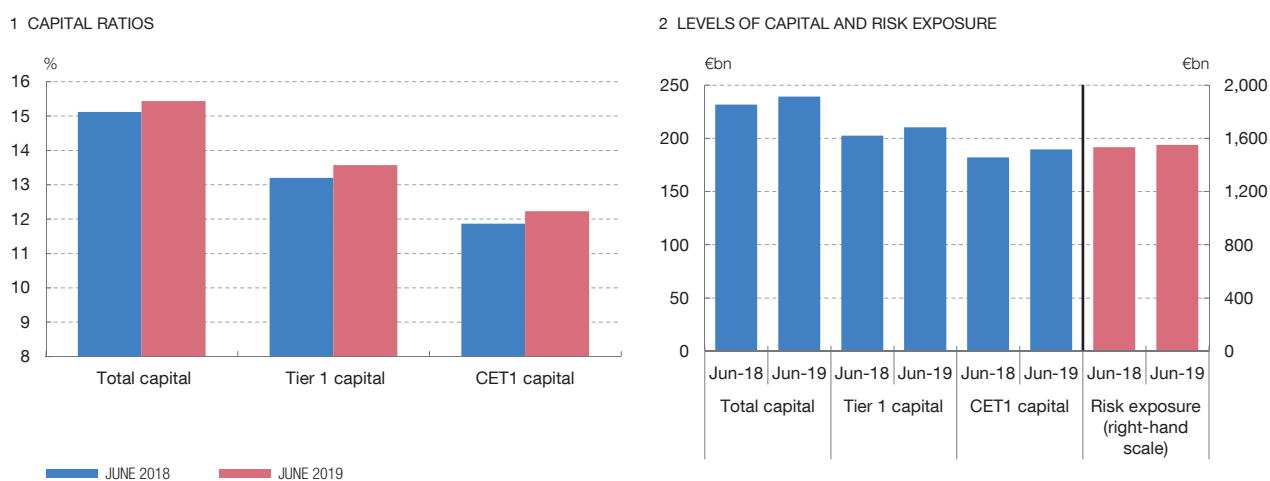
¹¹ The fully-loaded CET1 ratio stood at 11.9% in June 2019, having increased by 0.5 pp since June 2018. As the Basel III regime had been almost completely implemented by June 2019, the difference between the CET1 ratio (applying the phase-in schedule laid down by the regulation) and its fully loaded version (applying the rules in force at the end of the implementation period) is small.

Chart 2.14

CAPITAL AND RISK WEIGHTED ASSETS

Consolidated data

Between June 2018 and June 2019, the CET1 ratio increased by 36 bp to stand at 12.2%, while the Tier 1 and total capital ratios increased by similar magnitudes. Risk weighted assets grew by 1.1% over the same period.



SOURCE: Banco de España.

valuation and presentation of lease agreements which is estimated as –9 bp of CET1 on average in the sector.

The two largest institutions in the Spanish banking system were mainly responsible for the improvement in the CET1 ratio. It can be seen in Chart 2.15 how, over the past year, more institutions increased their CET1 ratio than reduced it, although the difference is not large. As regards the composition of the CET1, capital and reserves account for more than 90% of the eligible items. Indeed, the increase in reserves, explains most of the recorded increase in solvency. Minority interests represent 6%, while transitional adjustments, as a consequence of the practically complete implementation of the CRR/CRD IV, have a weight of only 2%. Most of the deductions correspond to goodwill and other intangible assets (see Chart 2.15).

Notwithstanding these developments, in June 2019 Spanish institutions had, on average, lower levels of solvency relative to other European countries. Chart 2.16 presents a Europe-wide comparison of two solvency measures, the CET1 ratio (panel 1) and the leverage ratio (panel 2), based on the latest data published by the EBA.¹² Spanish institutions have a CET1 ratio almost 3 pp below the European average, although above the regulatory minimum requirement. As regards the leverage ratio, Spain was above the largest European jurisdictions, but still in the lower half of the ranking.

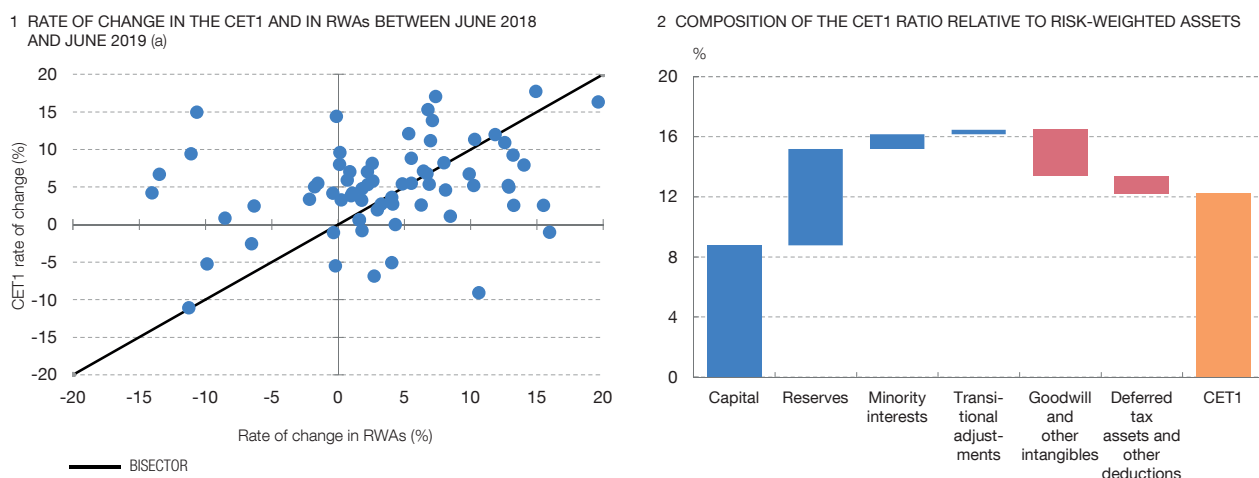
¹² See <https://eba.europa.eu/risk-analysis-and-data/risk-dashboard>.

Chart 2.15

CHANGE AND COMPOSITION OF THE CET1 CAPITAL RATIO

Consolidated data

In terms of institutions, although there is no great difference, the number of those whose CET1 ratio increased over the past year is greater than the number of those whose ratio declined. The main components of the CET1 are capital instruments and reserves, which represent more than 90% of their eligible items.



SOURCE: Banco de España.

a The points above the bisector show growth (declines) in the volume of CET1 over the past year higher (lower) than the growth (decline) in the volume of RWAs; accordingly, they would correspond to increases in the CET1 ratio between June 2018 and June 2019. The opposite occurs for points below the bisector.

One reason why the CET1 ratio of Spanish institutions is lower than that of their European peers is the greater use by Spanish banks of the standardised approach (SA) to calculate their capital requirements. Under the SA, institutions that do not apply their own internal models (IRB) all use the same risk weights for the different portfolios which are generally higher than those in IRB models. Previous editions of the FSR have explained in detail how, in comparison with the use of internal models, use of the SA is associated with a higher risk-weighted assets (RWAs) density.^{13, 14}

On the other hand, there do not appear to be significant differences between Spanish banks and those of other European countries as regards the densities obtained using IRB models. The average RWA density in IRB portfolios can be compared for the institutions of the main European banking sectors that participated in the transparency exercise published by the EBA in 2018 using the data obtained in that exercise (to June 2018). The Spanish institutions that use internal IRB models to manage credit risk are distributed relatively homogeneously among the European institutions in terms of RWA density (see Chart 2.17). In short, the analysis of densities

13 See FSR of May 2018 and FSR of May 2017.

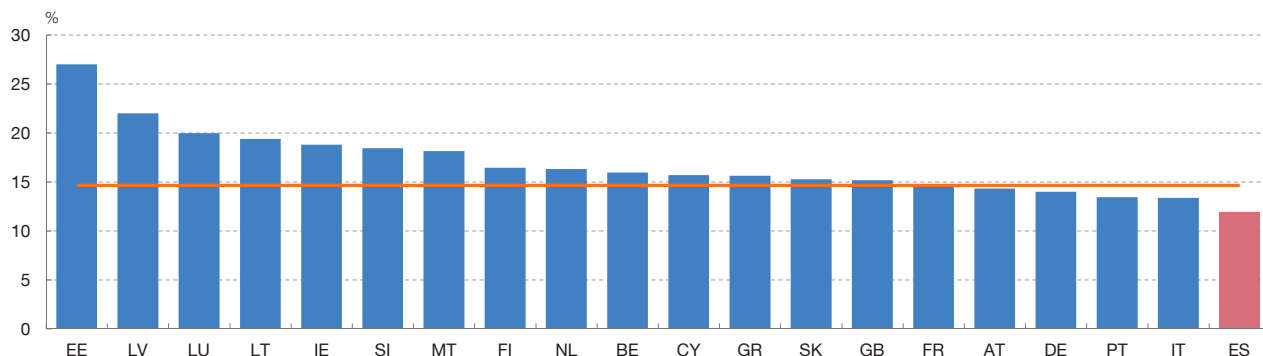
14 The RWA density of a portfolio is defined as the ratio of the volume of risk-weighted assets to the gross volume of such assets (without applying risk weights).

Chart 2.16

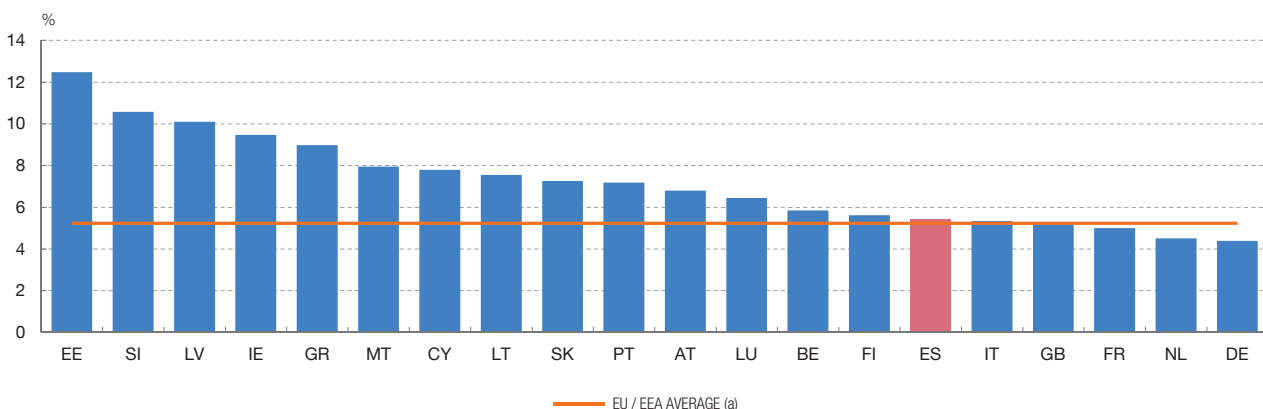
EUROPEAN COMPARISON OF SOLVENCY MEASURES
SSM COUNTRIES AND UNITED KINGDOM. June 2019
Consolidated data

The CET1 ratio for the main Spanish deposit institutions is in last place, while their leverage ratio stands slightly above the European average, and above the main EU countries.

1 CET 1 RATIO



2 LEVERAGE RATIO



— EU / EEA AVERAGE (a)

SOURCE: EBA.

a EBA data include Iceland.

in the private sector credit portfolio of institutions that use IRB models does not help to explain the relative position of Spanish institutions in the European solvency ranking.

The Basel III framework reform agreed in 2017 introduces restrictions on IRB models, in particular an output floor to capital requirements. Among other important measures, the Basel III reform introduces restrictions on the models used by institutions to value the risks they incur (limits on their use and on the parameters estimated in the method based on internal credit risk ratings), improvements to the risk sensitivity of the standardised approach for credit risk and, in particular, an output floor. This quantification of risk is a key element in determining RWAs, which are the basis for calculating institutions' capital requirements.

The aim of the output floor is to place a limit on the benefits a bank can obtain by using IRB models, so that its impact is greater in jurisdictions where this

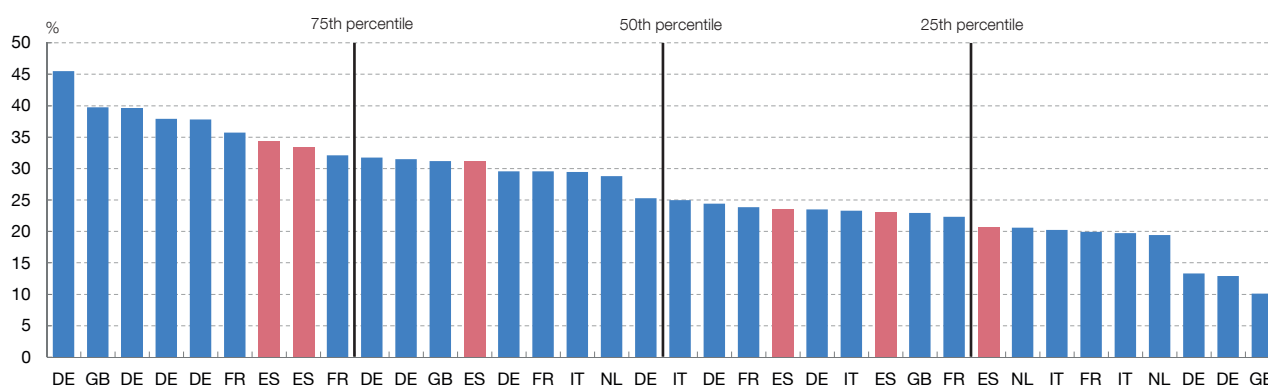
Chart 2.17

EUROPEAN COMPARISON OF RWA DENSITY IN THE IRB PORTFOLIO (a)

MAIN SSM COUNTRIES AND UNITED KINGDOM. June 2018

Consolidated data

The density of the RWAs in IRB portfolios is highly heterogeneous, both among the main banking sectors of the EU and at the level of the institutions that use internal models for credit risk management. Spanish institutions that use IRB models are distributed relatively uniformly across the various RWA density ranges.



SOURCE: EBA.

a Weighted density of the main credit portfolios (businesses, retail and secured by real estate) of the institutions participating in the EBA's transparency exercise that use advanced IRB models for credit risk management.

type of model is used more intensively. It should be noted that the new output floor replaces the existing Basel II floor with a more robust, risk-sensitive floor, based on the revised Basel III standardised approaches. Thus, the output floor attempts to place a limit on the benefit a bank can obtain by using internal models to calculate its minimum capital requirements, helping to improve the comparability, credibility and transparency of the capital ratios and in short, to help ensure a level playing field for banks, in terms of the calculation of capital requirements.

Analysis of the reforms shows that the greater impact in Europe stems from the output floor to capital requirements (see Chart 2.18). In order to assess the impact of these measures on banks' capital requirements, the Basel Committee on Banking Supervision (BCBS) and the EBA have both performed quantitative impact studies (QISs) of the new prudential regulations. The latest regular monitoring report of the BCBS presents these aggregate impacts for internationally active banks in three geographical areas: Europe, the Americas and the rest of the world.

The largest impacts of the floor to capital requirements for the sample of countries and banks used, are concentrated in Sweden, Denmark and Germany, according to the July 2019 EBA report.¹⁵ Other countries in which the

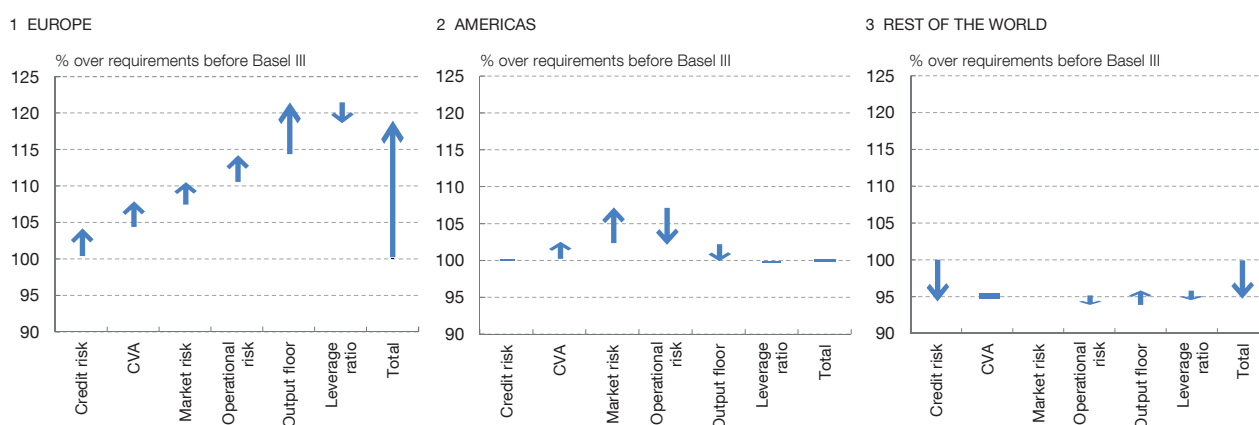
¹⁵ Report in response to the request for advice issued by the European Commission in which the impact of the Basel III reforms is studied.

Chart 2.18

IMPACTS ON MINIMUM REQUIREMENTS OF THE APPLICATION OF BASEL III

Change to current requirements (a)

Analysis of the impact of the Basel III framework reform shows that the greatest impact in Europe arises from the output floor, which is designed to limit the benefits that a bank can obtain by using IRB models, to ensure a level playing field for all banks.



SOURCE: Basel Committee on Banking Supervision.

a The length and direction of each arrow indicate the size and sign of the relative change in the capital requirements as a consequence of the impact of Basel III on the corresponding items indicated on the horizontal axis. The point of each arrow indicates the relative change resulting from accumulation of the impacts of Basel III on the corresponding item on the horizontal axis, and on all the items to the left of the latter.

floor to requirements accounts for a significant proportion of the impact of the Basel III reform are Finland, Ireland, the Netherlands, France and Belgium. Such impacts tend to be concentrated among a relatively small set of banks where the difference between the capital calculations under internal models and those resulting from the application of the standardised approach is greatest. These estimated impacts may be smaller, since they assume that institutions keep other capital buffers that they currently have unchanged, e.g. Pillar 2 capital requirements (P2R and P2G), combined requirements and voluntary buffers.

2.1.3 Forward-looking assessment of the Spanish banking system's resilience

The methodology used for the Banco de España's stress tests, known by the acronym FLESB (Forward Looking Exercise on Spanish Banks), was applied to the 2019-2021 horizon to measure Spanish banks' resilience in terms of solvency and liquidity. The Banco de España designed FLESB using a top-down approach, under which a set of models developed internally are applied to the information available from regulatory and supervisory reports.¹⁶

¹⁶ The bottom-up methodology is an alternative approach to banking sector stress tests in which the banks themselves make the estimates applying their own models and databases. The EBA's biennial stress test uses a constrained bottom-up approach, under which banks apply a bottom-up approach that is partially restricted by the methodological guidelines set by the EBA.

Among other developments, a more comprehensive analysis of sovereign exposures has been incorporated this year.

The baseline scenario for the solvency exercise consists of the Banco de España's macroeconomic projections published in 2019 H1. Under the adverse scenario there is a downturn in economic activity and a correction of the value of financial assets in line with the identification of risks in this FSR. It should be borne in mind that the adverse scenario does not reflect Spanish authorities' economic expectations. Rather, it is based on hypothetical assumptions for assessing the banking sector's resilience. In other words, it is a highly unlikely scenario. Likewise, it is important to note that the Banco de España's latest projection exercise revised growth forecasts downwards and, therefore, the baseline scenario used in the exercise is slightly optimistic. Lastly, these scenarios are global in scope, as they include projections not only for the Spanish economy, but also for the countries that are relevant for Spanish banks.

The baseline scenario assumes a moderate slowdown in GDP in the period 2019-2021 and the adverse scenario considers a recession in 2019-2020. Specifically, under the baseline scenario GDP would accumulate growth of 5.9% in three years, against a 1.7% decline under the adverse scenario (see Chart 2.19). This is a difference of 7.6 pp, which is stricter in terms of severity than the 7.4 pp difference in the 2018 FLESB exercise, whose scenarios were the same as those applied in the EU-wide stress test conducted by the EBA. The changes in the unemployment rate and in house prices under the scenarios are consistent with this behaviour of GDP. Thus, the unemployment rate drops to 12.3% under the baseline scenario, but rises to 16.5% under the adverse scenario. House prices decrease by 15.5% under the adverse scenario, against cumulative growth of 14.4% under the baseline scenario. Finally, the 3-month interbank interest rate exhibits a 70 bp difference between the baseline and adverse scenarios for 2021, reflecting the widespread increase in interest rates¹⁷ which would result from materialisation of the risk of a rise in risk premia, and also entailing a decline in the value of fixed-income and equity instruments.

For the liquidity analysis, the scenarios are defined in terms of fund outflow coefficients applied to the liquidity coverage ratio (LCR). Specifically, the baseline scenario uses the regulatory coefficients for 30-day fund outflows set by the BCBS and the EBA. The Banco de España defines the adverse scenario by introducing additional stress in these coefficients, based on past experience in Spain.¹⁸ The reference date is December 2018.

¹⁷ In these types of exercises, it is assumed that economic policies, particularly monetary policy, do not react.

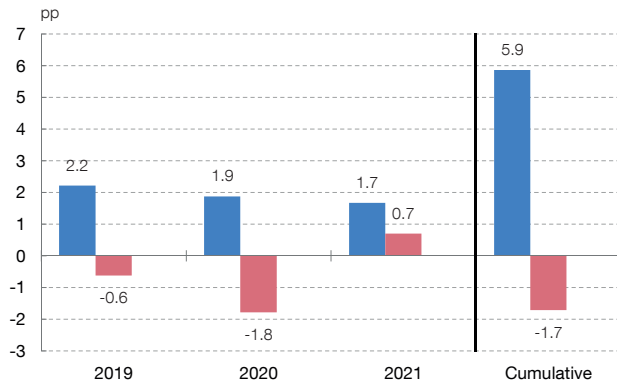
¹⁸ The same fund outflow coefficients that were considered last year were used for the adverse scenario. See *FSR, Banco de España, November 2018, page 74*.

Chart 2.19

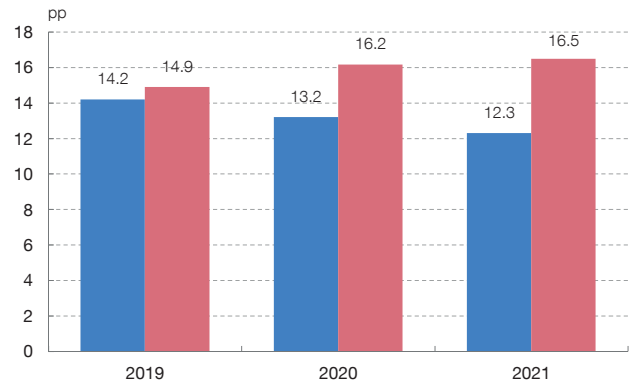
MACROECONOMIC SCENARIOS

The difference in the nature of the scenarios is reflected in the changes in the macro variables that define them. The baseline scenario assumes a growth path with a slight slowdown and a small rise in the interest rate. By contrast, under the adverse scenario there is a pronounced contraction of activity accompanied by a significant increase in the interest rate.

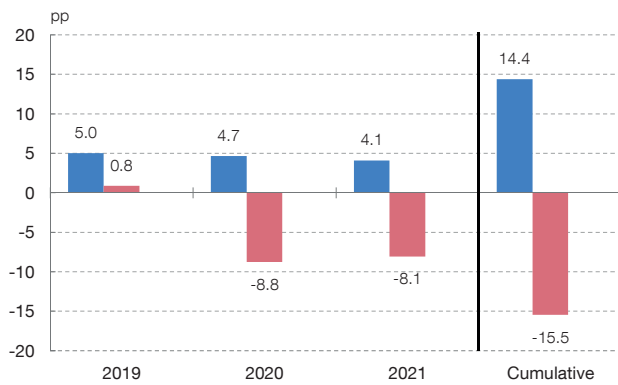
1 FORECASTED YEAR-ON-YEAR RATE OF CHANGE IN GDP UNDER BASELINE AND ADVERSE SCENARIOS



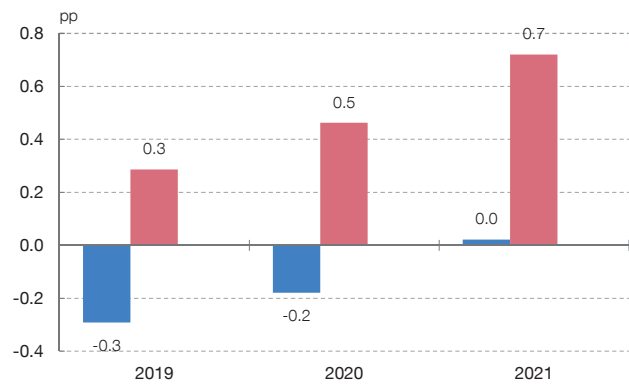
2 FORECASTED UNEMPLOYMENT RATE UNDER BASELINE AND ADVERSE SCENARIOS



3 FORECASTED YEAR-ON-YEAR RATE OF CHANGE IN HOUSE PRICES UNDER BASELINE AND ADVERSE SCENARIOS



4 FORECASTED 3-MONTH INTERBANK RATE UNDER BASELINE AND ADVERSE SCENARIOS



■ BASELINE ■ ADVERSE

SOURCE: Banco de España.

Results yielded by the FLESB methodology. Solvency

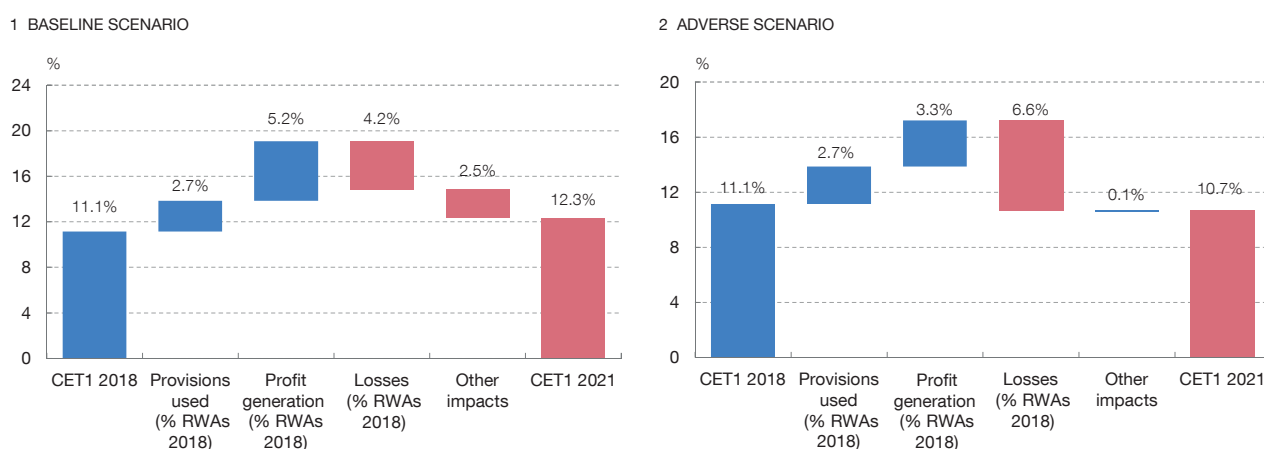
The 57 banks taking part in the exercise are divided into three groups based on supervisory scope and international activity. The first group consists of the Spanish banks under the direct supervision of the Single Supervisory Mechanism (SSM) with significant international activity, the second group consists of the other significant Spanish banks under direct SSM supervision and the third group comprises other banks. The banks in the third group are smaller, less complex, supervised directly by the Banco de España and do not engage in significant international activity.¹⁹ This segmentation, which reflects the differences in banks'

19 For further information see FSR, Banco de España, November 2018, page 76.

Chart 2.20

**IMPACT ON CET1 FL RATIO
INSTITUTIONS WITH SIGNIFICANT INTERNATIONAL ACTIVITY**

Banks with significant international exposure maintain a solid level of solvency even at the end of the adverse scenario. To this contributes a contained volume of losses and robust profit generation, both of which are favoured by geographical diversification.



SOURCE: Banco de España.

business models and sources of risk, coincides with that used in the FLESB exercises of previous years.

The group of banks supervised by the SSM with significant international activity²⁰ shows a 1.2 pp improvement in their CET1 ratio under the baseline scenario and a 0.4 pp fall under the adverse scenario. Chart 2.20 shows the results for the first group of banks. In this case, estimates of the performance of business outside Spain are also incorporated in the impact on solvency. As can be seen, the gross losses in Spain under the baseline scenario (4.2% of RWAs) are absorbed by the use of existing provisions (2.7% of RWAs) and by profit generation (5.2% of RWAs). The other impacts have a negative effect on the solvency ratio (2.5%), due to loan growth, which flows through to higher RWAs, and to the effect of taxes and profit distributions. The severity of the macroeconomic conditions under the adverse scenario prompts greater losses (6.6%), which cannot be fully absorbed by use of existing provisions (2.7%) or by profit generation (3.3%), so solvency decreases. Note that, under this scenario, the other impacts have a slightly positive contribution (0.1%), since loans diminish and the tax burden and distributions decrease largely owing to the absence of profits.

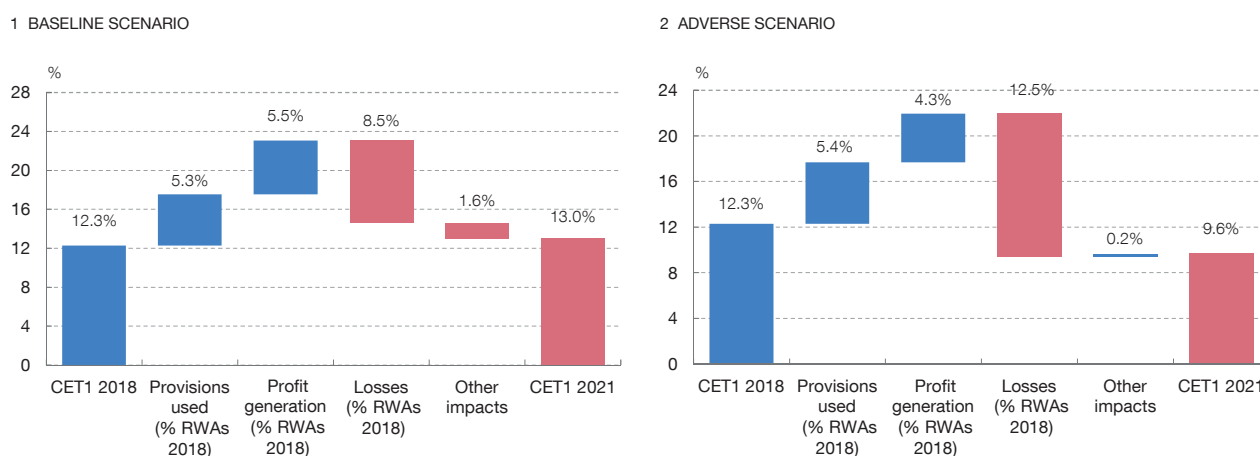
For the other banks supervised by the SSM, the baseline scenario produces an improvement of 0.7 pp in the CET1 ratio and the adverse scenario prompts a fall of 2.7 pp. Chart 2.21 shows that this group starts from a more favourable

²⁰ See FSR, Banco de España, November 2017, footnote 7 of Chapter 2.

Chart 2.21

IMPACT ON CET1 FL RATIO OTHER SSM INSTITUTIONS

Despite a significant increase in losses under the adverse scenario, mainly owing to greater exposure to real estate risk, other SSM institutions adequately contend with this scenario and maintain at the end of the year a CET1 ratio above the minimum thresholds required.



SOURCE: Banco de España.

solvency position than banks with significant international activity, since its initial CET1 ratio is 12.3%. However, it evolves less favourably during the year both under the baseline scenario, where the CET1 ratio rises by 0.7 pp in 2020 (compared with 1.2 pp for the first group), and under the adverse scenario, where it falls by 2.7 pp (compared with 0.4 pp). Under the adverse scenario, there is a highly significant increase in the volume of losses (12.5% of RWAs), such that the available loss absorbing elements are clearly insufficient to cover them by the use of provisions (5.4% of RWAs) and by profit generation (4.3% of RWAs). This weaker relative performance is because these banks do not benefit from the international diversification of the first group, which proved to be a robust source of profit generation during the past crisis. The concentration of their business in Spain, where the adverse scenario envisages a notable fall in economic activity and in real estate prices, has a significant impact on them through their exposures to credit risk and to foreclosed assets.

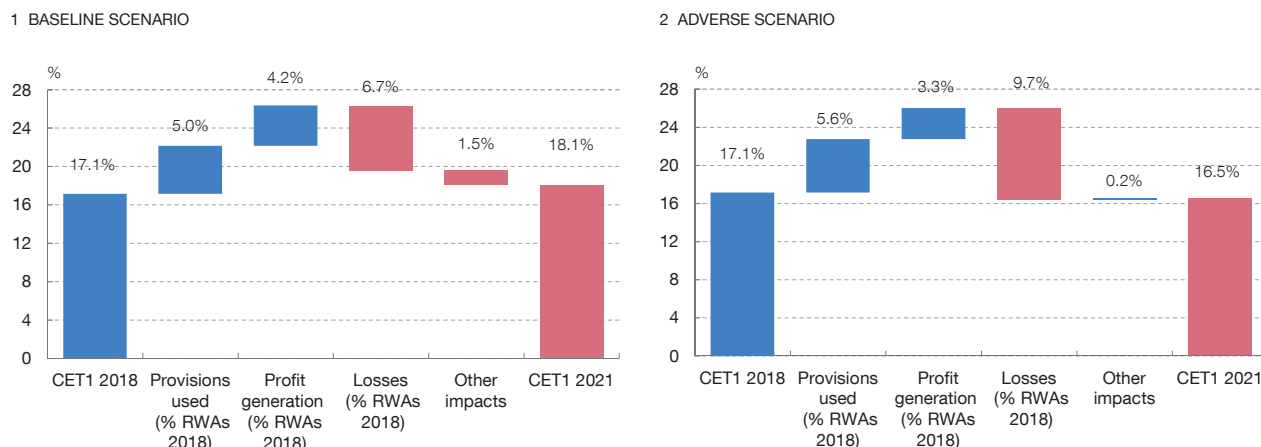
The banks under direct national supervision²¹ increase their CET1 ratio by 1 pp under the baseline scenario, while under the adverse scenario it falls by 0.6 pp. These banks perform more strongly than those of the previous group despite the fact that their operations are also concentrated in Spain, because are less exposed to credit risk and to the real estate sector. Chart 2.22 shows that under

²¹ This FSR considers a sample of 45 LSIs (less significant institutions, according to the SSM's supervisory classification), which includes the savings banks and credit cooperatives along with other less significant institutions (OLSI).

Chart 2.22

**IMPACT ON CET1 FL RATIO
LESS SIGNIFICANT INSTITUTIONS**

The group of banks under direct national supervision maintains a very high level of solvency under the adverse scenario. A more conservative profile contributes to this, translating into a less significant volume of losses than that observed for the other SSM banks, albeit with comparatively lower profit generation.



SOURCE: Banco de España.

the adverse scenario the volume of losses (9.7% of RWAs) exceeds that of the instruments which can absorb them, namely provisions (5.6%) and profit generation (3.3%), with a positive contribution (0.2%) from other impacts. The final CET1 ratio at the end of the exercise is 16.5%, the highest of the three groups, influenced by an initial CET1 ratio of 17.1%.

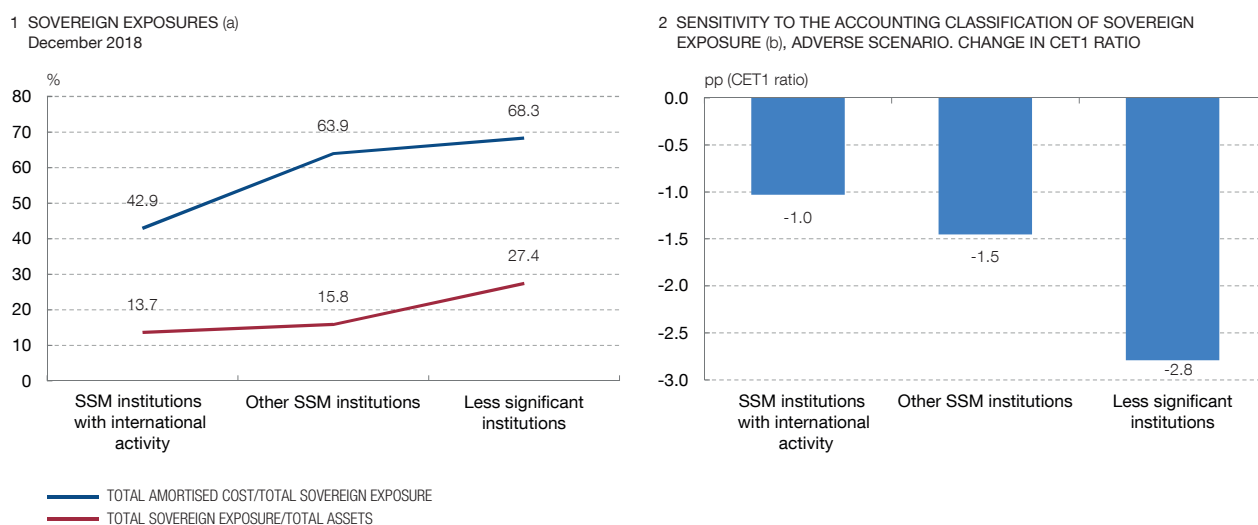
Consequently, at aggregate level the Spanish deposit institutions in the aforementioned three groups have an adequate solvency position in the event of materialisation of the risks identified under the adverse scenario. Compared with the previous year's exercise, there is a lower impact under the adverse scenario, despite it being slightly more severe. This is mainly due to the lower losses, made possible by the improved credit quality of the assets and the lower exposure to real estate risk. It should, however, be noted that the aggregate profit generation of all the groups is slightly lower than a year earlier, evidencing the tight profit environment in which Spanish banks are currently operating.

Despite these results, banks must not relax in their efforts to raise their solvency level. It should be taken into account that there is a certain degree of heterogeneity among the banks comprising each group. Also, there is a possibility that a bank may undergo an idiosyncratic shock additional to the systemic shock envisaged under the adverse scenario, and a chance that the risk may materialise in an economic downturn even more severe than that considered here. Indeed, the current macroeconomic projections of the Banco de España are somewhat more pessimistic than the baseline scenario used for the FLESB exercise. Stress tests

Chart 2.23

ANALYSIS OF SENSITIVITY TO THE ACCOUNTING CLASSIFICATION OF SOVEREIGN EXPOSURES

Banks under direct national supervision are, by far, the ones most sensitive to the accounting classification of sovereign exposure. They are followed by the other SSM banks and, lastly, by banks with significant international activity. This greater sensitivity is the result of the greater weight of sovereign exposures in total assets, as well as the greater weight of exposures recognised at amortised cost.



SOURCE: Banco de España.

- a The percentage of sovereign exposure that is recognised at amortised cost (i.e. not recognised at fair value) and the ratio of sovereign exposure to total assets are shown for each group of banks as at December 2018.
- b The additional consumption in pp of the CET1 ratio that would result under the adverse scenario if the sovereign exposure recognised at amortised cost were re-classified at fair value is shown for each group of banks for the period 2019-2021.

supplement, but cannot replace, other risk analysis tools of the Banco de España, including most notably the microprudential supervision of deposit institutions. All this advises that banks pursue a prudent, responsible policy of strengthening their capital insofar as the profits generated in a favourable macroeconomic setting so allow.

Sensitivity analyses. Sovereign exposures

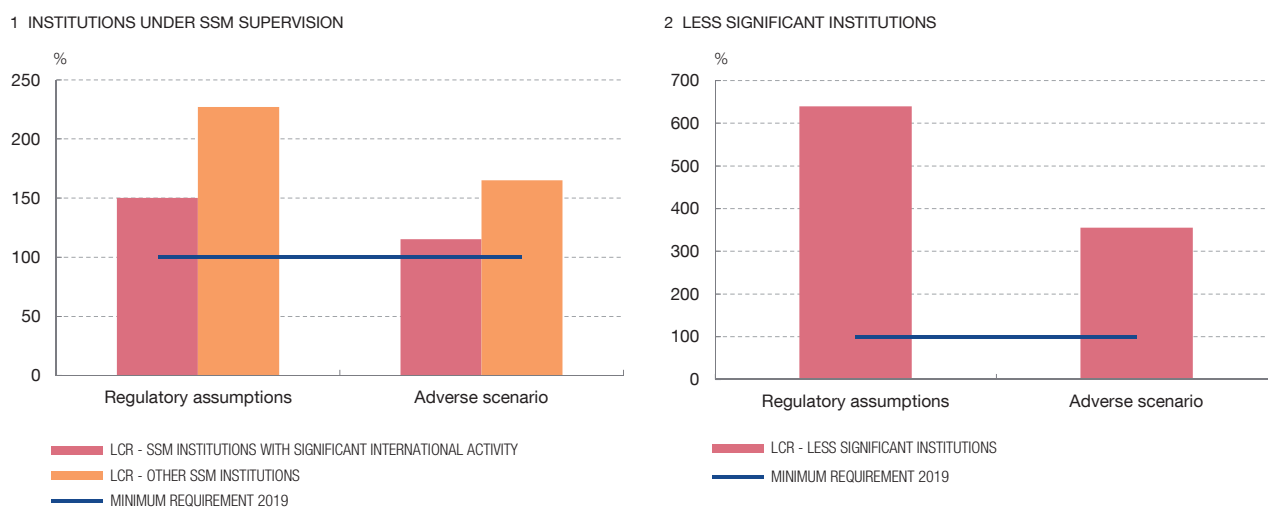
Based on this stress test, a complementary sensitivity analysis was conducted. Its purpose was to assess how the solvency test results are affected by the accounting classification of the sovereign debt portfolio, i.e. by their treatment as exposures at amortised cost or at fair value.

The sovereign debt held by banks may be accounted for at fair value or at amortised cost. In the first case, the changes in its market value are taken immediately to the bank's P/L or equity. By contrast, in the second case the valuation of the securities on the balance sheet is not subject to continual review, since the bank intends to hold them to maturity. This is extremely important for stress tests when one of the risks crystallising under the adverse scenario is a decrease in the value of these assets. Hence, this sensitivity test reproduces the results of the exercise under the assumption that all the sovereign exposure is classified at fair value.

Chart 2.24

IMPACT ON THE LCR

The ample liquidity starting point of all the groups of banks allows them to maintain a LCR above the minimum threshold of 100% under the adverse scenario, for which fund outflow coefficients that are even more stringent than those defined in the original rules are applied.



SOURCE: Banco de España.

If all the sovereign exposure were measured at fair value, there would be a general decrease in the CET1 ratio under the adverse scenario. Specifically, Chart 2.23 shows an additional decrease of 1 pp in the CET1 ratio of the banks with international operations, of 1.5 pp in the other SSM banks and of 2.8 pp in those under direct national supervision. The extent of the additional impacts depends on two factors. First, the relative weight of the sovereign exposure in total assets (13.7%, 15.8% and 27.4%, respectively). Second, the relative weight of the portfolios measured at amortised cost in the total sovereign exposure (42.9%, 63.9% and 68.3%, respectively). It is these exposures measured at amortised cost which are affected by the sensitivity analysis when they are reclassified to the fair value portfolio.

Results yielded by the FLESB methodology. Liquidity

The aggregate LCR for each group of banks stands above the minimum requirement (100%) under the adverse scenario. As also occurred last year, the liquidity position of the less significant institutions was particularly notable, since, even under the adverse scenario, they had a ratio of 355% (see Chart 2.24). In general, this was due to the substantial portfolio of low-return but high-liquidity assets held by them.

2.1.4 Changes in operational risks

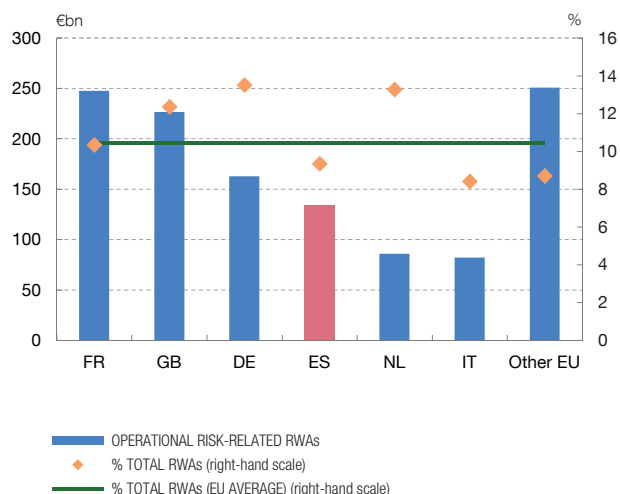
Operational risk represents 9.3% of the volume of RWAs of Spanish deposit institutions. In June 2018, the Spanish banking sector was ranked fourth by volume

Chart 2.25

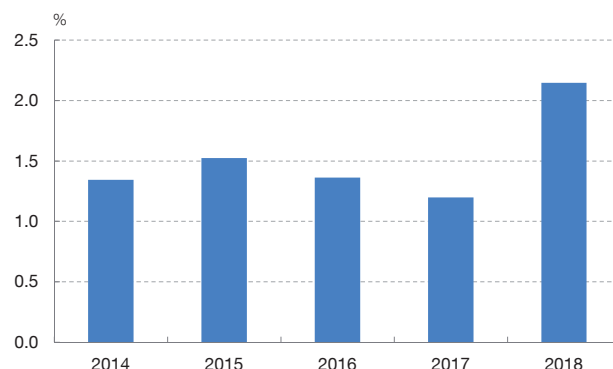
OPERATIONAL RISK
MAIN SSM COUNTRIES AND UNITED KINGDOM
Consolidated data

Operational risk-related RWAs at European level stood below 15% of total RWAs in June 2018. Spain was ranked fourth by volume of RWAs, although operational risk-related RWAs as a proportion of total RWAs stood at 9.3 %, which is lower than the European average (10.5%), and that of the largest European countries. The five highest operational risk losses recorded in Europe, as a percentage of CET1, remained relatively stable between 2014 and 2017 (between 1.2% and 1.5%), albeit rising substantially in 2018 (2.1%).

1 OPERATIONAL RISK-RELATED RWAs
 June 2018



2 FIVE HIGHEST OPERATIONAL RISK LOSSES AS A PERCENTAGE OF CET1



SOURCE: EBA.

of RWAs linked to operational risk (€134 billion) according to the data of the EBA’s latest transparency exercise (Chart 2.25). The operational risk of Spanish banks stands at 9.3%, relative to total RWAs, which is lower than the European average (10.5%) and that of the largest countries. The deterioration of solvency associated with an operational risk event may be high according to historical experience. Indeed, for European banks affected by the largest operational events, it has held at above 1.25 pp of CET1 over the last five years and rose to 2.1 pp in 2018.

The potential materialisation of costs associated with legal risks continues to contribute to the operational risk of Spanish deposit institutions. Proceedings linked to past lawsuits such as those on floor clauses, with an estimated cost of more than €2.2 billion for the sector until June 2019, have already taken place, but there is a possibility of further litigation. For instance, in 2018 credit card-related claims filed with the Banco de España increased considerably, as did litigation on the terms and conditions of revolving credit agreements, in particular, regarding deferred payment cards. This suggests a potential increase in litigation in this segment of the banking business.

The CJEU has still not issued a ruling on the question of the use of the mortgage loan reference index (IRPH by its Spanish abbreviation) as a benchmark in variable-rate mortgage loan agreements. As a prior step to the ruling, the Advocate General's conclusions on this matter were published on 10 September, however, they do not determine the CJEU's final ruling.

Other operational risks indicated in the previous FSR in relation to Brexit and to the changeover in European settlement systems and benchmark indices are still present. The Brexit process continues to raise issues about the operations of Central Counterparties (CCPs) which were considered in Box 1.1. The consolidation of TARGET2 and TARGET2-Securities planned for 2021 continues to pose a technological challenge and the transition from EONIA to €STR should be completed in 2020.

The reform of the Euribor introduces methodological improvements to make it more robust and to have it properly reflect financing conditions in the interbank market. Under the European Union Benchmarks Regulation, compulsory conditions affecting the Euribor are imposed so that it can be used in financial instruments and contracts after 31 December 2021. In this respect, the reform of the Euribor towards a hybrid methodology²² developed by EMMI, its administrator, was authorised last July by the Belgian authority, FSMA; accordingly, it may be used from 1 January 2020 in new and existing contracts and instruments. As a result, the gradual implementation of the new methodology will have to be concluded in the course of 2019 Q4.

Euribor indices are based on the voluntary contribution of a panel of banks. In this respect, one potential risk would be if a significant number of institutions decided to refrain from participating. To cover for that eventuality, Article 28 of the Regulation requires banks that use any benchmark index to have detailed plans on the measures to be taken if the benchmark index should cease to be provided, indicating one or several alternative indices. For this reason, a working group comprising representatives of large European banks is addressing the transition from EONIA, which is scheduled to be phased out by January 2022, to the €STR and for the introduction of reserve indices for all the indices used.²³

Lastly, the growing importance of risks related to cybersecurity for the financial sector needs to be underlined in this area. Technological innovation and the changes in the expectations of customers who expect tailored products

22 According to this methodology, the 18 banks which contribute to the panel will supply information in the following order: i) use of data on transactions, ii) performance of estimations if sufficient data are not available, iii) use of other market data.

23 On 14 March 2019 the WG-RFR published its recommendation for a methodology based on OIS quotes to set up an €STR-based rate structure as an alternative to Euribor-linked contracts.

and continuous multi-channel availability of new services have compelled financial institutions to develop their technological systems. This has frequently compelled them to adopt technologies which have not been tested sufficiently and to become increasingly reliant on services provided by third parties, which blurs the perimeter of the organisation that needs to be protected. Furthermore, the concentration of cloud-based services in the hands of a small number of unregulated, unsupervised suppliers is increasing and they are becoming critical points in financial infrastructure.

The costs associated with the materialisation of cyber risks include both the direct economic impact and indirect damage associated with a loss of confidence and the interconnections between institutions. Direct economic loss, as a result of the materialisation of these cyber risks, would be associated with institutions' incapacity to provide services to their customers or failure to meet their contractual and legal obligations with the subsequent impact on reputation and increase in litigation. Preventing these incidents also entails increased spending on infrastructure and the need to have skilled employees. If the high level of interconnectedness between the various industry participants is considered, cyber risks may ultimately affect the stability of the system as a whole.

A set of European rules geared towards preventing and mitigating cyber risks already exists, although it is somewhat fragmented and, thus, potentially less effective when applied. The set of rules includes the Directive on the Protection of Critical Infrastructures, the General Data Protection Regulation (GDPR), the Network Information Security Directive (NISD) and the Revised Payment Service Directive (PSD2).

As a result of the multiple rules on cyber risks, financial institutions have to notify numerous authorities about cybersecurity incidents. Specifically, if an incident of this type were to affect a Spanish institution deemed to be a critical infrastructure and were to have an impact on the payment users' personal data, the institution would have to notify the following national and European authorities: i) by virtue of the NISD, the National Institute of Cybersecurity Response Centre (INCIBE-CERT by its Spanish abbreviation) (Ministry of the Economy and Enterprise) must be notified and since it is a critical infrastructure, the National Centre for the Protection of Critical Infrastructures (CNPIC by its Spanish abbreviation) (Ministry of the Interior) would take control; ii) under the PSD2 and GDPR rules, respectively, the institution would have to inform the Banco de España and the Spanish Data Protection Agency; iii) according to banking supervision regulations the SSM would have to be notified, if the institution is significant. These notification obligations have different time frames and involve sending different forms, which increases the risk of a lack of coordination and the administrative workload related to the incident.

2.2 Non-banking financial sector and systemic interconnections

2.2.1 Non-banking financial sector

The non-banking financial sector analysed in this section has shown a more expansionary profile in recent years. In the low-interest rate setting prevailing in recent years, the performance of the specialised lending institutions, insurance companies, investment funds and pensions funds analysed in this subsection, generally shows an increase in activity with broadly positive profitability levels.

Specialised lending institutions

Specialised lending institutions (SLIs) concentrate specifically on granting credit and cannot take deposits from the general public. They are particularly significant in the consumer credit segment which accounts for around 50% of their total portfolio. Many SLIs, representing 80% of these institutions' total lending, are part of national banking groups. At aggregate level they represent 4% of lending to the private sector and 23% of consumer credit.

Over recent years, in contrast with the decline observed in deposit institutions, the credit granted by SLIs has grown steadily at year-on-year rates that have held at around 10%. For instance, in June 2019 total lending to the resident private sector grew by 11% compared with June 2018 and quickened slightly with respect to previous quarters (Chart 2.26).

Having posted significant declines, these institutions' non-performing loans are now showing positive year-on-year changes. This is the result of SLIs specialising in riskier business segments such as consumer loans. However, the non-performing loans ratio remains contained for the moment, owing to the robust increases in the ratio's denominator (credit).

These institutions' profitability is substantially higher than that of deposit-taking institutions' business in Spain. The income statements of SLIs have remained stable in recent years, of note are the weight of net interest income and the growth of fee and commission income, which have offset the considerable rise in impairment losses in recent quarters.

Insurance companies

The main insurance companies in Spain have increased their assets in recent years, whereas their return on investment has held relatively stable.

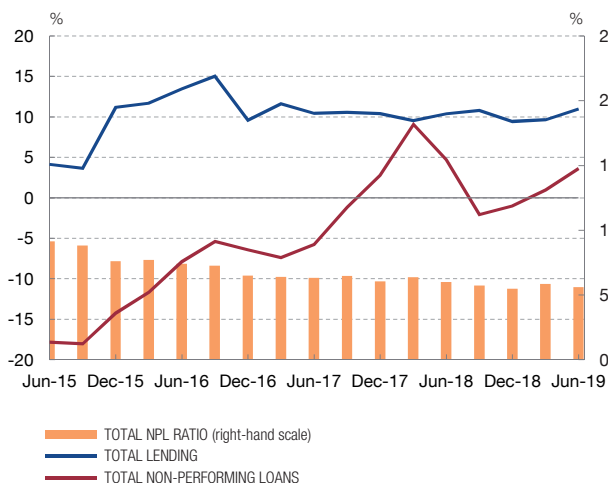
Chart 2.26

SPECIALISED LENDING INSTITUTIONS

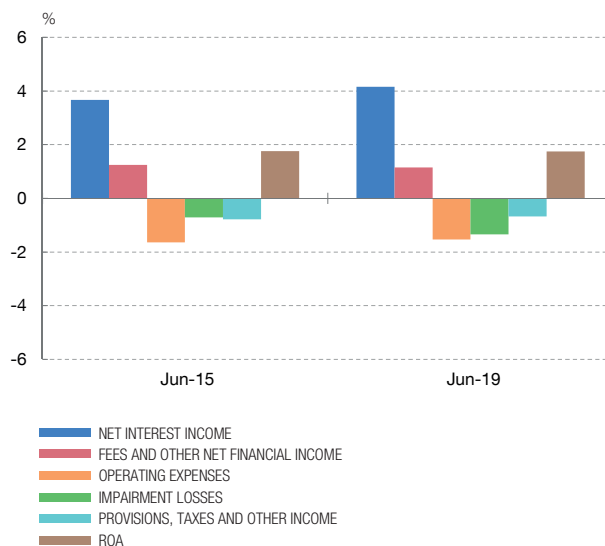
Business in Spain. ID

Over recent years, in contrast with deposit institutions, the credit granted by SLIs has grown steadily at year-on-year rates that have held at around 10%. Non-performing loans declined considerably and then posted positive year-on-year changes.

1 LENDING AND NON-PERFORMING LOANS OF RESIDENT PRIVATE SECTOR
Rate of change and NPL ratio



2 INCOME STATEMENT
% of total assets



SOURCE: Banco de España.

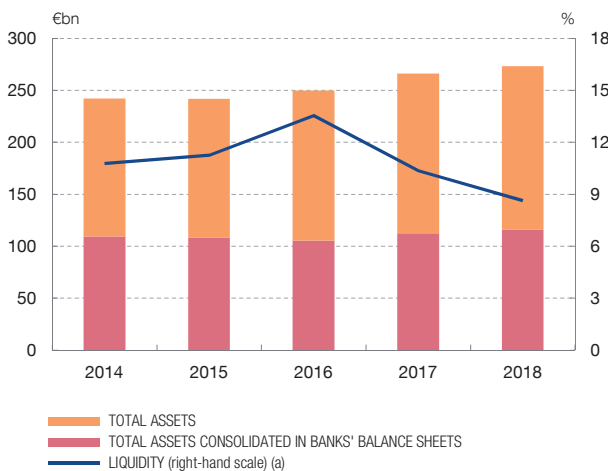
Chart 2.27

INSURANCE COMPANIES

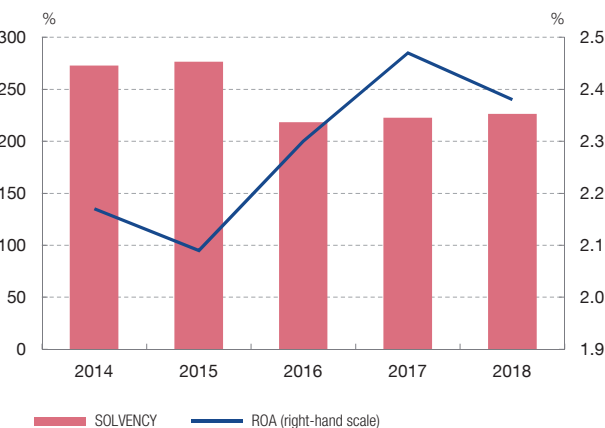
Consolidated data

In Spain, the insurance sector's volume of assets has increased in recent years. The sector's solvency has remained relatively stable, whereas the return on assets held at above 2%.

1 ASSETS AND LIQUIDITY



2 SOLVENCY AND PROFITABILITY



SOURCE: SNL Financial and information published by entities.

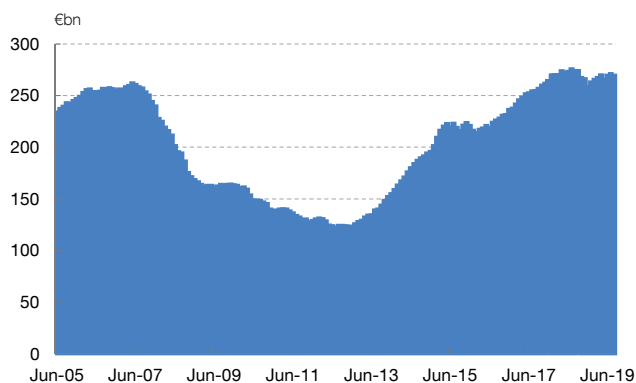
a Liquidity is defined as the ratio of cash and liquid deposits to total liabilities.

Chart 2.28

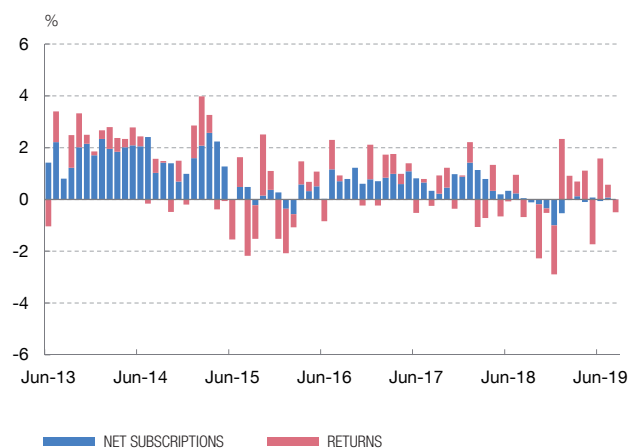
INVESTMENT FUNDS

In the year to date, investment funds' net asset values have increased slightly as a result of positive returns, since net subscriptions have remained flat.

1 NET ASSET VALUE OF INVESTMENT FUNDS



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



SOURCES: Inverco and CNMV.

Since 2015, the insurance sector's²⁴ volume of assets has grown constantly and to a greater extent than the assets consolidated in the balance sheets of banks and, consequently, the latter's significance in this sector has declined (Chart 2.27). This greater size was not accompanied by an improvement in the sector's liquidity, which has fallen. Solvency levels have remained stable.²⁵ Finally, the sector's return on assets (ROA), which dipped somewhat last year, remains above 2%, whereas ROE slightly exceeded 15% last year, which is considerably higher than the banking sector's profitability ratios.

Investment funds

In the year to date, investment funds' assets have increased slightly as a result of positive returns. Since the second half of 2018, net subscriptions of investment funds, which had grown since 2013, have remained flat or declined slightly. In 2019, as a result of the positive returns in six of the first eight months of the year, investment funds' net assets have increased by 4.3% (Chart 2.28).

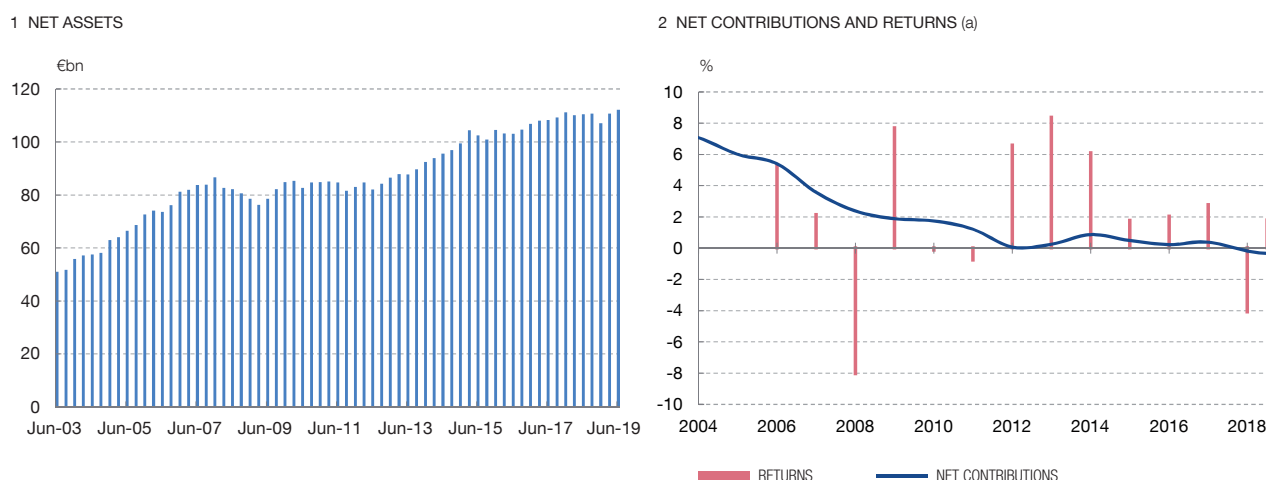
²⁴ The information analysed here, which is drawn from SNL Financial's database, relates to Spain's main insurance companies, which represent approximately 84% of the insurance sector's assets.

²⁵ The decrease in the solvency ratio in 2016 is due to the change in regulation associated to the implementation of the Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009.

Chart 2.29

PENSION FUNDS

Pension funds' net assets grew in 2019 compared with the slowdown experienced in 2018. Net contributions remained negative which extended their decreasing trend, while returns started to pick up after posting negative values in 2018.



SOURCES: Inverco and CNMV.

a The data available on net contributions do not relate to total pension plans. The series is based on a sample which varies between 85.2% and 99.18% of total pension funds (95.16% on average in the period).

Pension funds

Also in this case, it is the pick-up in returns which explains the increase in pension funds' assets in 2019. Pension funds' assets stood at historical highs (Chart 2.29). Net contributions to pension funds (adjusted for the value of benefits) have shown negative values since end-2018 (-0.2% of net assets at end-2018), and a clearly decreasing pattern over time. However, these funds' assets climbed steadily during 2019 (1.6% in year-on-year terms) due to a higher contribution from profitability.

2.2.2 Systemic interconnections

This FSR analyses the direct interconnections of the resident financial system with non-resident financial institutions and examines indirect interconnections through exposures to marketable securities.²⁶ Direct interconnections between resident financial sectors and changes in them in recent years, shown in the 2019 Spring FSR, have remained stable. Their analysis is not updated in this issue.

²⁶ Direct interconnections refer to financial instruments issued by a financial institution and held by another financial institution belonging to the same or another financial sector. Indirect interconnections arise where different financial institutions hold exposures to the same sectors, markets or instruments.

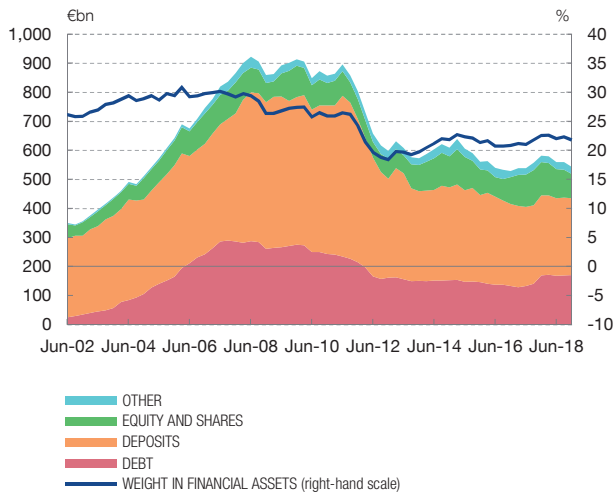
Chart 2.30

OMFI INTERCONNECTIONS WITH NON-RESIDENT AGENTS

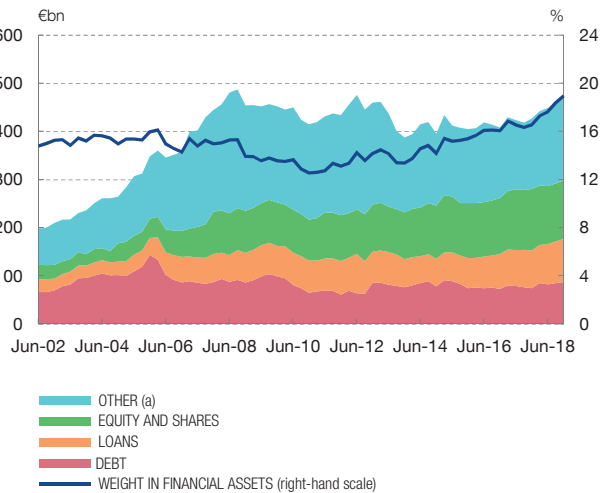
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OMFI's liabilities vis-à-vis the rest of the world fell considerably in absolute terms after the crisis and their relative weight in financial assets has also decreased by 4.6 pp since June 2011. The level of assets vis-à-vis the rest of the world has remained more stable but its weight in total financial assets has increased by 6.2 pp since the same date.

1 OMFI's LIABILITIES VIS-À-VIS THE REST OF THE WORLD



2 OMFI's ASSETS VIS-À-VIS THE REST OF THE WORLD



SOURCE: Banco de España.

a Includes interbank loans, among others.

Direct interconnections with non-resident financial agents

The liabilities of resident financial institutions vis-à-vis the rest of the world fell considerably after the crisis and stabilised as from 2013. Chart 2.30 shows the assets and liabilities of other monetary financial institutions²⁷ (OMFI) vis-à-vis the rest of the world. At present, liabilities vis-à-vis the rest of the world represent 22% of the total financial assets of OMFI, which is 8 pp lower than before the global financial crisis. In June 2019, assets vis-à-vis the rest of the world represented 19% of total financial assets, their highest value in the series, after the upward trend which began in 2013.

The cross-border interconnections of banks and investment funds take the form of holdings in marketable securities issued by non-resident institutions of identical financial sectors. Non-residents also own a significant portion of marketable securities issued by resident banks. Chart 2.31 shows, using the ECB's

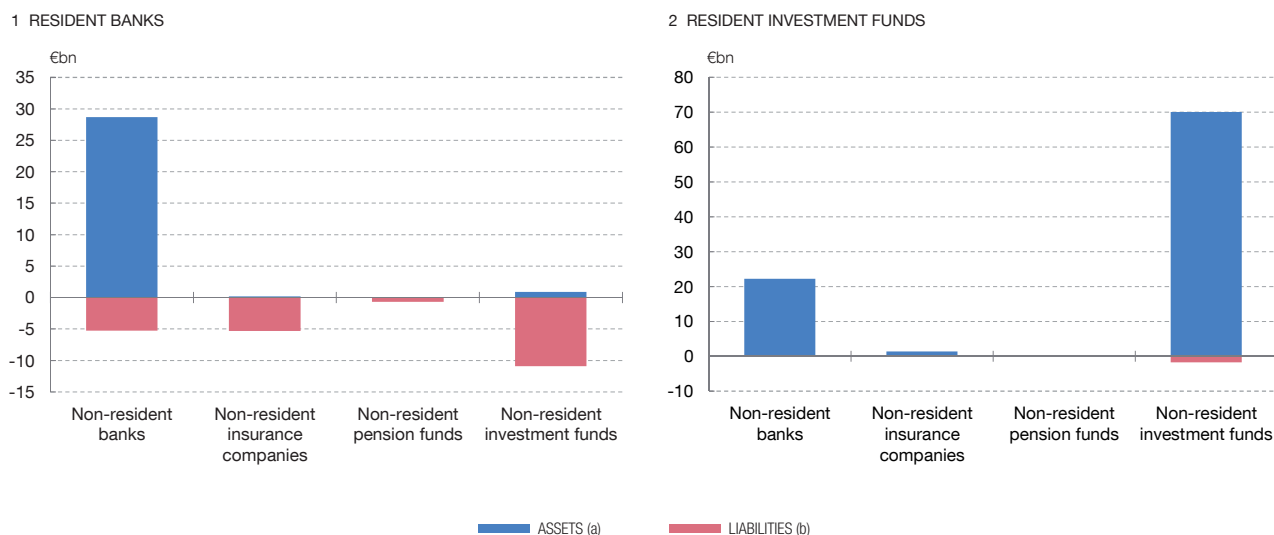
²⁷ OMFI's include banks, specialised lending institutions (SLIs), the ICO and money market investment funds. This information is from the Financial Accounts of the Spanish Economy which gathers data from the the individual balance sheets of institutions in this sector which are resident in Spain. Consequently, it does not include exposures through subsidiaries which are not resident in Spain.

Chart 2.31

DIRECT CROSS-BORDER INTERCONNECTIONS DUE TO HOLDING OF MARKETABLE SECURITIES

December 2018

The most significant direct cross-border interconnections by volume are due to resident investment funds' holdings of marketable securities issued by non-resident investment funds (€70 billion), followed by resident banks' holdings of marketable securities issued by non-resident banks (€29 billion). Resident investment funds scarcely have cross-border interconnections through their liabilities, whereas the latter are significant for resident banks.



SOURCE: ECB (Securities Holding Statistics by Sector).

- a It shows resident institutions' asset holdings of marketable securities issued by non-resident sectors.
- b It shows marketable securities issued by resident institutions which are held by non-resident sectors.

database on the marketable securities holdings²⁸ of different financial sectors in the euro area, the total volume of direct interconnections with non-resident financial sectors of banks and investment funds resident in Spain in December 2018. The main direct cross-border connections are established through the holdings of resident banks (€29 billion) and resident investment funds (€70 billion) in instruments issued by non-resident institutions. However, certain significant interconnections in the opposite direction are observed, such as instruments issued by banks domiciled in Spain which are held by non-resident investment funds (€11 billion).

Indirect interconnections

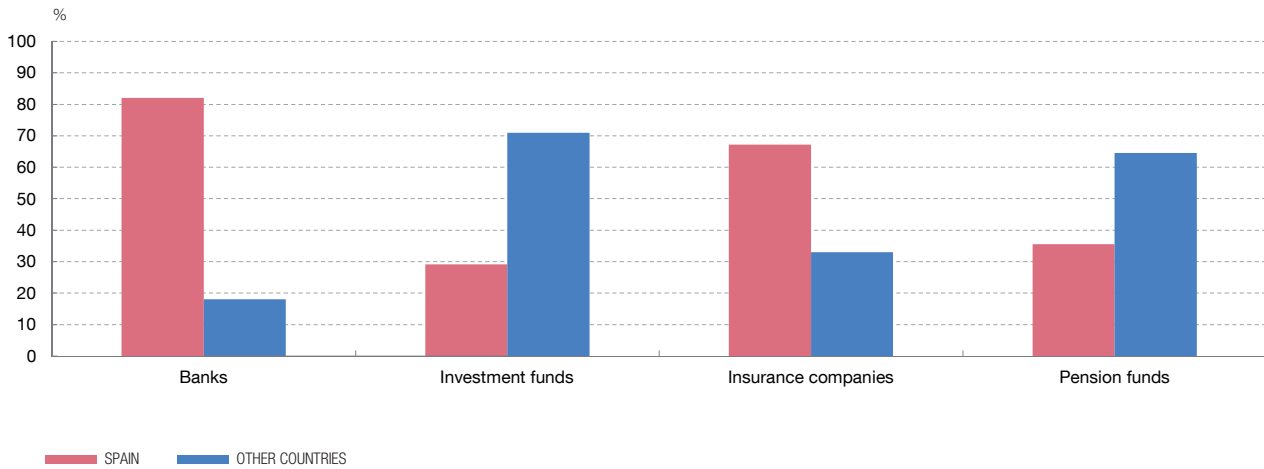
More than 70% of the marketable securities holdings of banks and insurance companies resident in Spain are concentrated in Spanish issuers. Using once again the data compiled by the ECB, Chart 2.32 shows the weight that the most

²⁸ This database excludes data on loans and deposits. Furthermore, it only includes the marketable securities holdings of financial institutions resident in Europe. Consequently, the holdings of these institutions' subsidiaries outside Europe are not included either.

Chart 2.32

MAIN MARKETABLE SECURITIES ISSUERS IN DOMESTIC FINANCIAL SECTORS HOLDINGS
December 2018

The relevance of the Spanish issuers in the resident financial sectors portfolios is larger in banks and insurance companies.



SOURCE: ECB (Securities Holding Statistics by Sector).

exposed issuers from Spain and other geographical areas represent as a percentage of the total holdings of resident financial sectors. The importance of Spanish issuers is particularly significant for banks (accounting for more than 80% of their holdings) and insurance companies (around 70%). The most geographically diversified sectors are investment funds and pension funds.

The various financial sectors resident in Spain hold a significant volume of common exposures which may be considered a contagion mechanism.²⁹ As a result of these common positions, all the sectors would be affected simultaneously by the same shock arising at one securities issuer. More importantly, a potential problem in one financial sector could push it into forced selling of assets which are also present in one or more other sectors. This could trigger substantial falls in the prices of these assets and, therefore, valuation losses for the other holding sectors, with the related implications for financial stability.

More than 45% of the positions held in the marketable securities portfolios of banks, funds and insurance companies overlap with other financial sectors. Chart 2.33 shows that the most significant common positions by marketable securities volume are those held by the banking sector with other financial sectors (approximately €285 billion). However, in order to assess this result properly, it should

²⁹ The metrics used in this section are similar to those shown in the ECB's "Financial Stability Report" of November 2018 (section 3.2, particularly Chart 3.24 and the related sections).

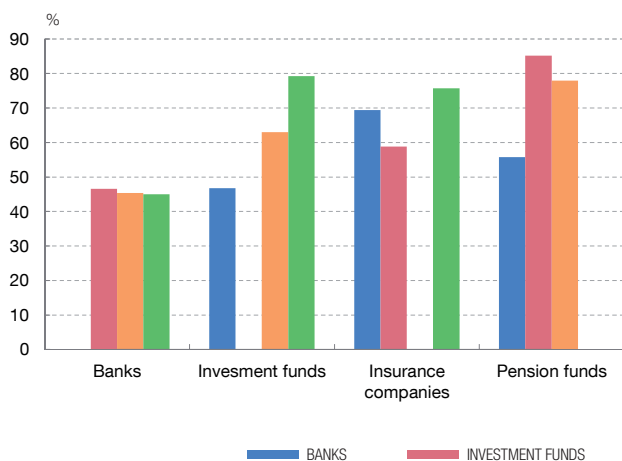
Chart 2.33

PORTFOLIO OVERLAP IN MARKETABLE SECURITIES (a)

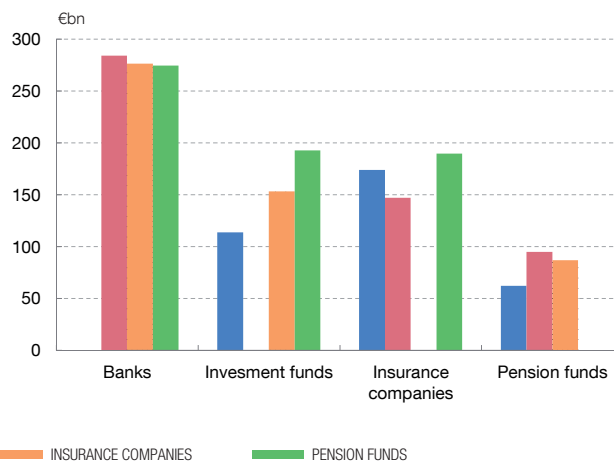
December 2018

The banking sector has the highest overlap of exposures with other sectors, by volume of exposures. The degree of overlap, in relative terms, in the non-banking sector is greater than that in the banking sector but of a lower volume. Similarly, the investment fund and insurance company sectors have similar levels of overlap both in terms of volume and as a percentage of their total portfolios.

1 COMMON HOLDINGS AS A PERCENTAGE OF TOTAL PORTFOLIO



2 VOLUME OF COMMON HOLDINGS



SOURCE: ECB (Securities Holding Statistics by Sector).

a The chart shows common holdings of marketable securities, which means ownership of identical securities issued by the same issuer. For example, of the common holdings between banks and investment funds, banks hold €284 billion, which represents 47% of their total portfolio; for their part, investment funds hold €114 billion, which represent 47% of their total portfolio. The market value of the holdings reported by the entities is considered (or, if appropriate, fair value).

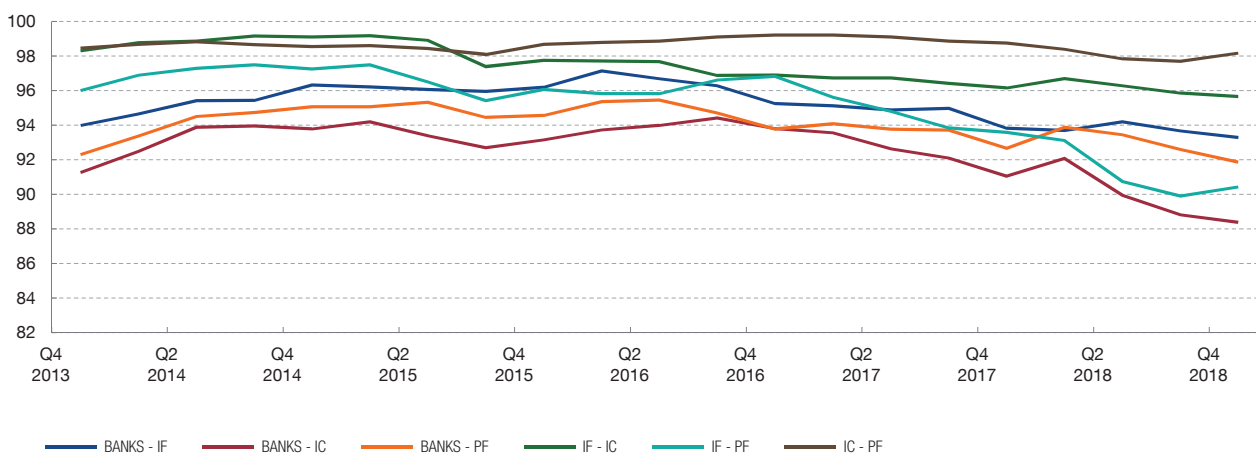
be considered that banks' assets mainly comprise loans, which are not included in this analysis. The common marketable securities holdings among non-bank financial sectors are of a smaller volume, but they are more significant relative to each sector's total securities portfolio. In particular, the proportion of common positions in the securities portfolio of pension funds which overlaps with insurance companies and investment funds exceeds 75%.

The correlation of the holdings by issuer of the various financial sectors makes it possible to estimate the degree to which there is a similar distribution of securities in the portfolios. As at each date, the weights represented by the different individual issuers (e.g. a specific sovereign or non-financial corporation) in each financial sector's investment portfolio were measured. These data were used to calculate the correlation coefficient of these weights between each pair of financial sectors (e.g. banks and investment funds). An advantage of this measure is that it does not depend on the size of the portfolios and, therefore, is not affected by the differences in each sector's total volume of holdings. A positive correlation between the portfolios of two sectors would indicate that the holdings whose volume is higher than the average of the total portfolio in one of the sectors are also above average in the portfolio of the other sector.

Chart 2.34

CORRELATION OF PORTFOLIOS OF MARKETABLE SECURITIES

The correlation between financial sectors' portfolios at the level of individual securities has followed a declining trend. At the level of the issuer, the correlation is greater and the declining trend is much more contained.



SOURCE: ECB (Securities Holding Statistics by Sector).

This correlation is generally very high, above 85%, in all the sector pairs. Chart 2.34 shows changes in the correlation between 2014 Q1 and 2018 Q4. There are two significant points to be underlined. On one hand, the correlation holds at high values and is relatively stable between banks and pension funds and, to a certain degree, also between insurance companies and pension funds. On the other, correlations of other sectors (e.g. banks and insurance companies, and investment funds and pension funds) show a slightly declining trend in recent years.

EUROPEAN AND US BANKS: DIFFERENCES IN STOCK MARKET VALUATIONS AND PROFITABILITY

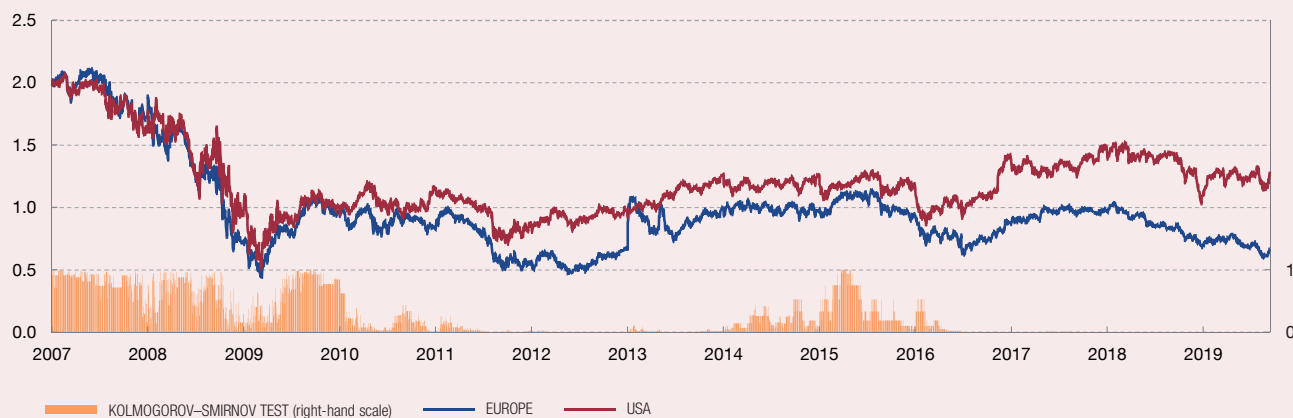
At the beginning of September, the main listed European banks had an average price-to-book (P/B) ratio of 0.7, compared with a P/B ratio of 1.3 for the main listed US banks.¹ These valuation differences are not a reflection of the present situation as they have been persistent since the global financial crisis. Indeed, at the start of the crisis, both the European and the US banks posted a P/B ratio of 2. From then (2007-08) until March 2009, the P/B ratio fell sharply to 0.5, tracking a similar path in both samples, before subsequently embarking on a recovery that was much more pronounced in the United States. Thus, since 2010 and more clearly since 2011, average P/B ratios in the United States have been higher. They converged somewhat in 2014-15, but the gap has then widened again since 2016. The differences in P/B ratios are not confined to the average of the two samples; the distributions are statistically different in the periods 2011-14 and 2016-19 (see Chart 1).

The numerator of the P/B ratio reflects the valuation made by banks' investors. This will depend on their expectations as to banks' future profitability, the level of risk-free interest rates and the risk premium demanded by them.

By contrast, the denominator of the P/B ratio reflects banks' book value, providing investors with useful information according to criteria that may be different from market value, including other principles (accounting prudence, stable valuation, etc.) that are not strictly based on market expectations. The fact that the P/B ratio of European banks has been persistently below 1 since 2009 implies that investors' expectations of their value have been systematically lower than their value reflected by the accounting standards. By contrast, since the second half of 2009, the P/B ratio of US banks has been above 1, indicating that expectations as to the value of bank shares are higher than the values reflected in the accounting records.

It is to be expected that investors formulate their expectations based, among other elements, on the financial information available at the time. This has given rise to a number of studies that establish a relationship between the P/B ratio and various financial ratios based on banks' accounting statements.² This box focuses on analysis of the relationship between banks' P/B ratio, which reflects expected profitability, and their current profitability. Chart 2 shows, for 2018 which is the last full year for which

Chart 1
P/B RATIO OF MAIN LISTED EUROPEAN AND US BANKS, 2007-2019 (a)



SOURCES: Datastream and Banco de España.

a For each date, the chart shows the simple average of the P/B ratio for the samples of the main listed European and US banks (27 in each case), and the p-value of a non-parametric Kolmogorov-Smirnov test on the equality of the distributions of the P/B ratio in both samples. A p-value below 0.1 denotes rejection of the null hypothesis of equality of distributions.

- 1 Based on two samples – one for the United States and one for Europe – of the 27 banks with the highest market cap in each area.
- 2 Some recent examples include: C. W. Calomiris and D. Nissim (2014), *Journal of Financial Intermediation*, 23, pp. 400-435; B. Bogdanova, I. Fender and E. Takáts (2018), *BIS Quarterly Review*; and M. Grodzicki, C. Rodriguez d'Acri and D. Viotto (2019), *ECB Financial Stability Review*, May 2019.

EUROPEAN AND US BANKS: DIFFERENCES IN STOCK MARKET VALUATIONS AND PROFITABILITY (cont'd)

data are available, that there is a positive relationship between return on equity (ROE) and the P/B ratio. It also shows, in almost all cases, that both ROE and the P/B ratio are higher at US banks than at their European counterparts. Accordingly, the banks with the highest current profitability in 2018 seem to be associated with higher expectations of discounted future profitability with respect to present book value.

Chart 3 shows the regression coefficients of the ROE ratio, as an explanatory factor of the P/B value ratio, in a series of cross-sectional regressions from 2007 to 2018, separating the European and US samples. The positive relationship between ROE and the P/B ratio observed in Chart 2 for 2018 is not confined to that year, as the coefficients are generally positive and significant for the different years, albeit not stable over time. With the onset of the crisis, the ROE coefficient for the European sample decreases significantly compared with that estimated for 2007 (0.04), up to 2017 and 2018 when it rises to 0.05 and 0.08, respectively. The coefficient is almost zero both in 2008 and 2012, when the financial crisis in Europe was at its peak and support measures were approved for the banking and the sovereign sector.³ The coefficient is generally higher for US banks (0.06 on average) than for European banks (0.03 on average) and also varies over time. After dropping to a zero non-significant level in 2009, the year in which the Troubled Asset Relief Program (TARP) was implemented, it has held above its pre-crisis levels and above the levels of European banks.

In accordance with these findings, the relationship between actual profitability and the P/B ratio is stronger for the United States in the geographical dimension, and for recent periods in the time dimension. This may be because investors perceive that current ROE has greater predictive power over future profitability, or because there is greater emphasis on short-term profitability. Correlation analysis does not permit distinction between the two explanations. In any event, it is important to note that in the years when critical support measures were approved for the banking sector, a disconnection between the two variables is observed.

Given the existence of this relationship, the next step is to analyse how this profitability measure for the main European and US banks has evolved in the period. Chart 4 depicts the change in the ROE ratio in the two samples and shows how the initial stage of the crisis prompted a sharp slump in profitability in 2008. This was followed by a subsequent recovery up to 2010, as support measures for the banking sector were implemented in both areas, financial stress eased and activity recovered somewhat. From 2010 the paths began to diverge, with US banks recording a steady ROE ratio around 8%, compared with the much lower and more volatile level recorded by European banks. Indeed, their ROE fell significantly in 2016 and especially in 2012, against the backdrop of the sovereign crisis and the renewed economic downturn. As was observed in Chart 1, there is a clear time parallel in the paths of the P/B ratio in the United States and Europe.

The differences in profitability between the European and US banks in terms of ROE are greater if measured by return on total assets (ROA), owing to the differences in their leverage ratios (equity to total assets): the banks in the European sample had a leverage ratio of 6% in 2018, compared with 10.6% for the US banks (see Chart 5). ROA, which may be decomposed as the product of ROE and the leverage ratio, is higher for the US banks, as both ROE and the leverage ratio are lower in Europe. In terms of ROA, not only is there a positive difference in favour of the US banks in net income in the numerator, but the total assets of the European banks in the sample are considerably higher than those of their US counterparts,⁴ thus driving down this ratio for the European sample.

In an attempt to investigate the causes of these differences in profitability aside of the level of leverage, Chart 5 also shows the income statement breakdown (in terms of total assets) of the banks in the US and the European samples for 2018. As the chart shows, the key factors for US banks' higher profitability are their greater capacity to generate net income, through net interest income (2.1% in the United States compared with 1.2% in Europe) and through service fees and gains/losses on financial transactions that make up gross income (2% compared with 1%).

³ See, for example, *ECB Financial Stability Review*, December 2008, Special Feature, "Recent Policy Initiatives to Strengthen the Resilience of the Financial System", pp. 129-134; and *ECB Financial Stability Review*, December 2012, Chapter 3 on Financial Markets.

⁴ There are various reasons for this difference, including the different treatment of the scope of consolidation, especially as regards securitisations.

Box 2.1

EUROPEAN AND US BANKS: DIFFERENCES IN STOCK MARKET VALUATIONS AND PROFITABILITY (cont'd)

Chart 2
RELATIONSHIP IN 2018 BETWEEN P/B RATIO (VERTICAL AXIS) AND ROE (HORIZONTAL AXIS) OF MAIN LISTED EUROPEAN AND US BANKS (a)

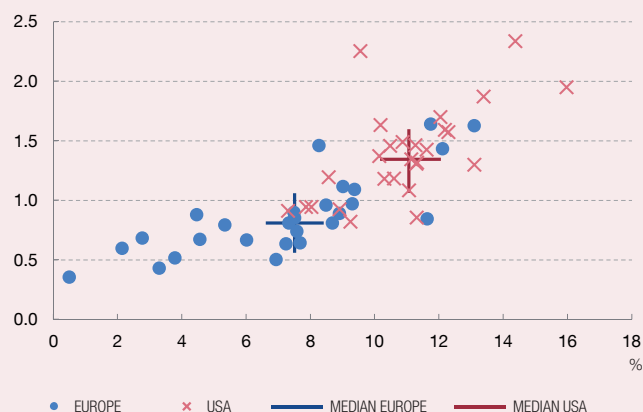


Chart 3
EFFECT OF ROE ON P/B OF MAIN LISTED EUROPEAN AND US BANKS (b)

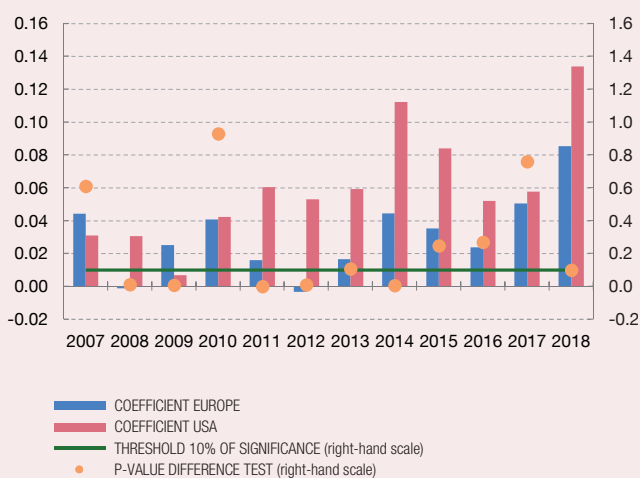


Chart 4
PROFITABILITY (ROE) OF MAIN LISTED EUROPEAN AND US BANKS

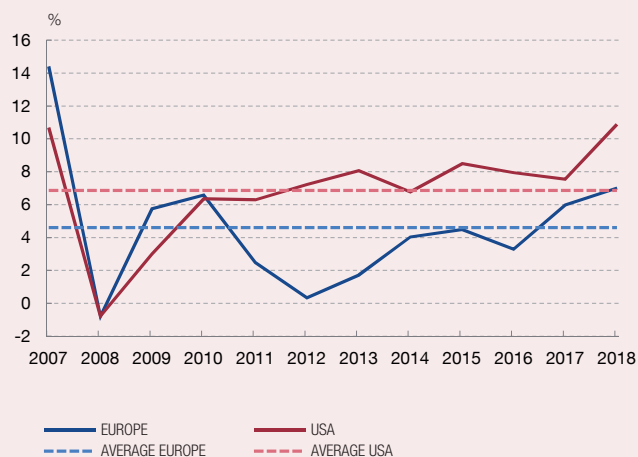
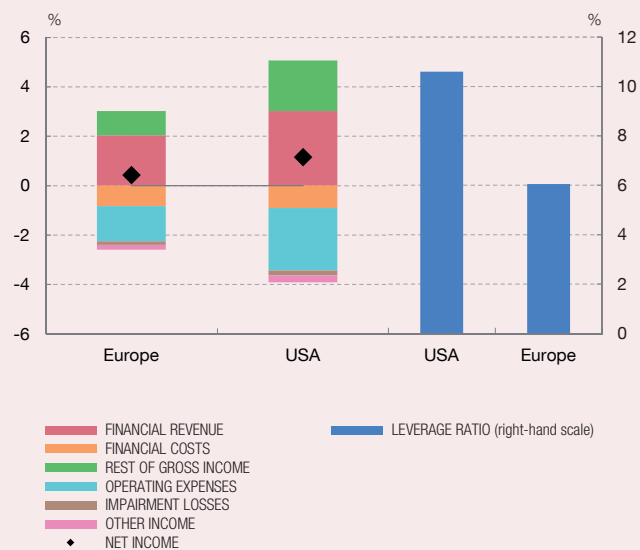


Chart 5
STRUCTURE OF 2018 INCOME STATEMENT AND LEVERAGE RATIO OF MAIN LISTED EUROPEAN AND US BANKS (c)



SOURCES: Datastream, SNL and Banco de España.

- a The chart depicts the average P/B ratio in 2018 (vertical axis) and ROE in 2018 (horizontal axis) of the 54 banks making up the two samples. The crosses denote the median values of P/B and ROE of the European and US banks.
- b For each year of the period 2007-2018, a cross-sectional regression is made: $P/B_i = \alpha_{USA} \times I_{USA} + \alpha_{EUR} \times I_{EUR} + \beta_{USA} \times ROE_i \times I_{USA} + \beta_{EUR} \times ROE_i \times I_{EUR} + \varepsilon_i$, where P/B_i and ROE_i are the price-to-book and ROE ratios of bank i , I_{USA} and I_{EUR} denote that they belong to either the US or the European sample, α_{USA} and α_{EUR} are constants corresponding to the samples of European and US banks, and β_{USA} and β_{EUR} are the coefficients of the ROE effect corresponding to the samples of European and US banks. The identity of the coefficients is examined by means of a null hypothesis test ($H_0: \beta_{USA} = \beta_{EUR}$) based on the F statistic. The orange markers in the chart denote the p-values. The standard errors used are robust to heteroskedasticity. The coefficients β_{USA} and β_{EUR} are individually significant in all the regressions, except in 2008 for Europe and in 2009 for the United States.
- c The left-hand side of the chart depicts the income statement breakdown in terms of total assets of the main European and US banks. The righthand side presents the leverage ratio, defined as equity to total assets.

EUROPEAN AND US BANKS: DIFFERENCES IN STOCK MARKET VALUATIONS AND PROFITABILITY (cont'd)

This capacity to generate income more than offsets their higher operating expenses (2.5% compared with 1.4%) and the absence of significant differences in impairment losses and other income. Adverse factors that have marred European banks' profitability since the start of the crisis, such as the declining volume of productive assets, falling net interest income and business models with a low share of net income other than net interest income, would appear to be still contributing in 2018 to the lower profitability of the main listed European banks in comparison with their US counterparts.

The analysis presented here shows that the differences in stock market valuations between US and European banks that emerged after the financial crisis of 2008 are still in place. It also identifies signs that additional recovery in European banks' profitability would help close the valuation gap. However, this improved profitability should not be achieved at the expense of sacrificing a prudent funding structure (for instance, by taking on excess leverage), as this would drive up the risk premia demanded by investors and thus limit improvements in P/B ratios.

3

MACROPRUDENTIAL POLICY

3 MACROPRUDENTIAL POLICY

This chapter presents the systemic vulnerability and risk analysis performed regularly by the Banco de España as a basis for its macroprudential policy actions. Specifically, the first section uses two tools, the heat map and the systemic risk indicator, that provide a first approximation to recent risk developments. The second part presents a study in greater depth of the time/cyclical dimension of systemic risk and presents an ex-ante impact analysis of setting a positive countercyclical capital buffer rate. This analysis suggests that, according to the forecasts currently available, various reference indicators will exceed the thresholds for activation of this buffer in the first half of 2021. If this macroprudential instrument is activated, the credit institutions affected will have a period of 12 months to comply with the requirement. However, this diagnosis is dependent upon materialisation of the central forecast scenario, which is currently subject to numerous downside risks. Should these risks materialise the above analysis would have to be adjusted accordingly.

3.1 Analysis of systemic vulnerabilities

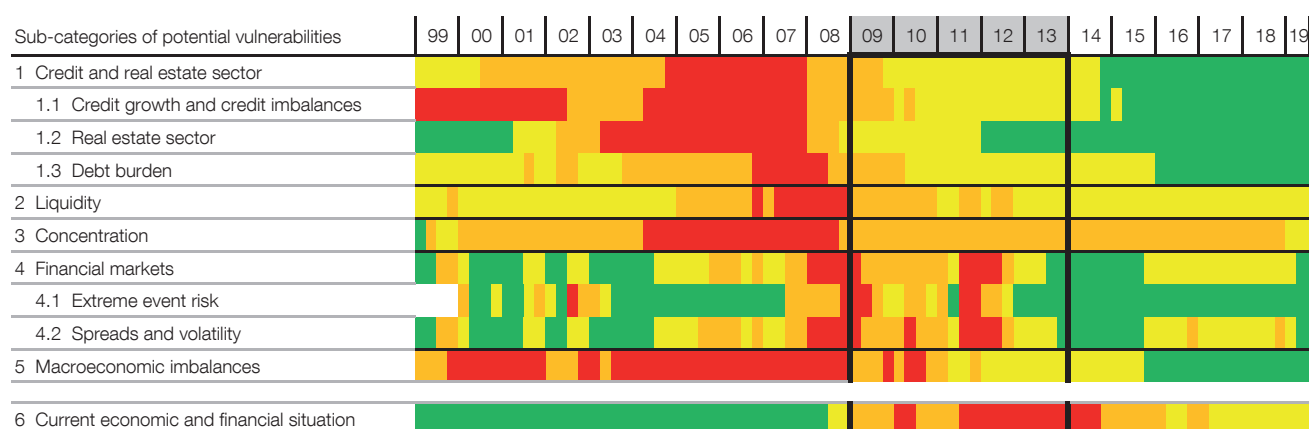
The map of systemic vulnerability indicators shows no signs of build-up of systemic risk¹ (see Chart 3.1). The heat map categories that group together credit, liquidity and macroeconomic imbalance indicators have remained stable at absence-of-alert levels since the last edition of the FSR. In the case of indicators related to *credit growth*, it should be noted that during the first two quarters of 2019 total credit to the non-financial private sector (referring to total financing to this sector, not only banking credit) posted slightly positive growth rates, for the first time since 2010. For the time being, the *real estate market* indicators show no signs of risk either, since the sustained increase in house prices has still not translated into widespread overvaluation. In fact, in both cases, the absence of alerts is due to the fact that the starting levels were well below the thresholds that trigger alerts in the heat map. Accordingly, for a change in the degree of risk to occur, the trends observed in recent periods would have to be sustained.

¹ The map of systemic vulnerability indicators aggregates data from a broad set of indicators, according to their ability to predict systemic banking crises. The definitions of the main categories correspond to those established by the European Systemic Risk Board in its Recommendation ESRB/2013/1 on intermediate objectives and instruments of macro prudential policy. For the chart to be interpreted correctly it needs to be taken into account that the intensity of the alerts in each category represents a weighted average of the indicators included. Intensity increases as the tone draws closer to red, while green depicts a normal situation. Details of the specific indicators included in each category, and of how their weights are calculated, are to be found in Mencía, J. and Saurina, J. (2016) “*Macprudential policy: objectives, instruments and indicators*”, Occasional Paper No. 1601, Banco de España.

Chart 3.1

HEAT MAP BY SUB-CATEGORY (a) (b)

The map of systemic vulnerabilities, designed to provide early warning of systemic banking crises, remains stable without any risk or low-risk warnings, while the imbalances and the economic and financial situation have not seen any changes in grading.



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 band denotes the last systemic crisis. Some indicators as at December 2018 are based on provisional information.
- b The 2019 indicators are available up to June 2019.

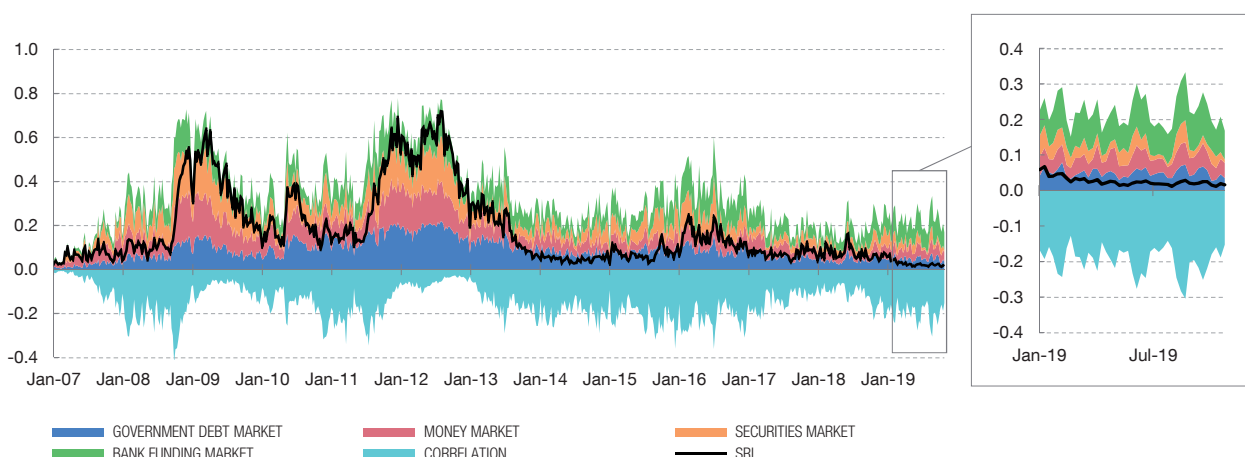
The liquidity indicators reflect a situation of low risk,² partly as a consequence of the ECB’s accommodative monetary policy, and improvements are observed in the concentration indicators. The *liquidity* indicator is made up, on the one hand, of information on market liquidity and, on the other, of indicators of liquidity on bank balance sheets. The indicators relating to the liquidity on bank balance sheets have shown no signs that would give rise to concern, while the market indicators have shown somewhat more volatility, although also improvements in the case of government debt liquidity in the first half of 2019. In general, market liquidity is expected to continue to improve following the ECB’s decision to implement further medium-term refinancing operations. The risk level of the *concentration* indicators has fallen to medium-low. This is because the concentration of credit among large firms has declined, while exposure to the construction and real estate development sectors continues to fall, as part of the process of improvement in the quality of bank balance sheets mentioned in Chapter 2. Financial market turbulence, meanwhile, decreased slightly in the first half of 2019 from the levels recorded at the end of last year, partly as a result of the measures implemented by many central banks. Finally, the *macroeconomic imbalance* indicators and the indicators of the *current economic and financial situation* remained unchanged.

² One of the indicators that made up this subgroup in previous editions of the FSR has had to be replaced by another as it has ceased to be available. It is for this reason that its level has been revised retrospectively.

Chart 3.2

SYSTEMIC RISK (a)

In 2019 to date, the systemic risk indicator (SRI) has remained at historically very low levels.



SOURCES: Datastream and Banco de España.

a For a detailed explanation of this indicator, see Box 1.1 in the May 2013 FSR.

The systemic risk indicator (SRI) has declined during 2019 (see Chart 3.2). That said, the volatility measures in this indicator have increased in recent months. These episodes of market volatility stem from the downward skew of global growth prospects and from new geopolitical tensions, the trade war between the United States and China, and the possibility of a no-deal Brexit. The recent developments in these episodes have not been reflected by the aggregate SRI as they have been confined to specific markets, showing a low correlation with other components of the indicator. This also indicates that the episodes have not been systemic in scope. In any event, it should be taken into account that the SRI indicator is a coincident indicator of the financial situation and, therefore, is not designed to anticipate future risks. In fact, this indicator currently stands at extraordinarily low levels, not seen since the years prior to the last financial crisis. It is not possible to rule out that the markets are, as then, underestimating the significant risks that exist, so that sudden changes in their perception may lead to significant rises in this indicator.

The Banco de España is starting to analyse other risks to medium and long-term financial stability, including those deriving from the energy transition and climate change, and from potential changes in market structure as a result of technological change, which is conducive to the entry of new competitors. The role of the financial system in the management of these risks is also being analysed. Box 3.1 provides a general outline of the economic risks associated with climate change, and of the various initiatives existing in the financial sector to address them, while Box 3.2 describes the risks to financial stability associated with the project to create Libra.

3.2 Macprudential policy instruments and actions

In 2019 Q3 and Q4, the Banco de España has held the countercyclical capital buffer rate (CCyB) at 0%. This decision is based on a technical analysis of quantitative indicators combined with qualitative information. The quantitative indicators that guide the CCyB decisions include indicators intended to reflect the stage of the credit cycle of the non-financial private sector and its excessive growth, the potential overvaluation of house prices, the burden of interest and principal payments on loans to households and firms (debt service), the external imbalance and the macroeconomic environment.³ The technical analysis assesses the recent developments in the indicators, their current situation and also their expected behaviour over the next few quarters, in line with the macroeconomic forecasts prepared on a quarterly basis by the Banco de España.⁴ This latter element is very important, because, in the event that the CCyB is activated, institutions have 12 months to comply with the requirement.

The credit cycle indicator continues to show values below the activation thresholds (in terms of the credit-to-GDP ratio, which remains below its long-term trend value), although it is progressively approaching equilibrium. Specifically, the adjusted credit-to-GDP gap which assumes a credit cycle duration in line with the empirical evidence for Spain, is still showing a negative value (–8 pp on data to June 2019), although it is progressively approaching the activation threshold of 2 pp.⁵ The upward trend of this indicator has been evident since the end of the last crisis (see Chart 3.3). The projections for this indicator over the next few years suggest that it will become positive in around 2021 Q1 and could exceed the activation threshold in Q2 of that year. The available econometric models – which estimate the equilibrium level of the credit-to-GDP ratio on the basis of its relationship with other fundamental macro-financial variables according to economic theory – also currently show negative gaps with respect to this equilibrium level, which are rapidly shrinking.⁶

The output gap, meanwhile, has been positive since the beginning of the year, and is projected to expand in future. This suggests that the level of GDP is now

3 A technical analysis of the selection of indicators used can be consulted in Castro, C., Estrada, A. and Martínez, J. (2016), “The Countercyclical Capital Buffer in Spain: An Analysis of Key Guiding Indicators”, Working Paper No. 1601, Banco de España.

4 See, for example, Banco de España (2019): “Quarterly report on the Spanish economy”, *Economic Bulletin, Banco de España*, 3/2019, pp. 5-67.

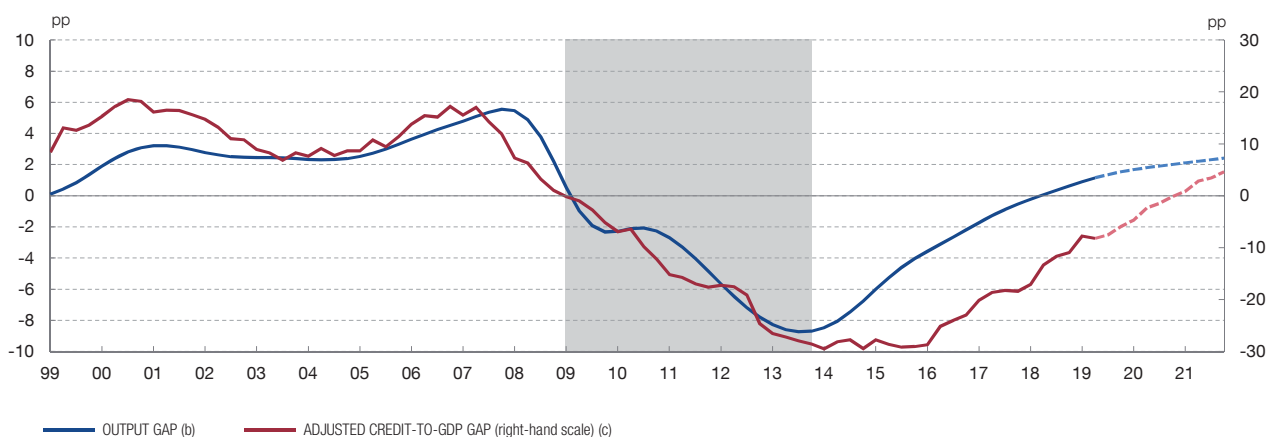
5 A description of the adjusted gap and its performance can be found in Box 3.2 of the Spring 2019 FSR. For details of the calculation of the adjusted gap and a comparison with the Basel gap and other alternatives, see Galán, J.E. (2019), “Measuring credit-to-GDP gaps. The Hodrick-Prescott filter revisited”, Occasional paper No. 1906, Banco de España.

6 For further information on these models, see Galán, J.E. and J. Mencía (2018), “Empirical Assessment of Alternative Structural Methods for Identifying Cyclical Systemic Risk in Europe”, Working Paper No. 1825, Banco de España.

Chart 3.3

OUTPUT GAP AND CREDIT-TO-GDP GAP (a)

The output gap has continued to show positive values and is expected to do so for the next two years. The adjusted credit-to-GDP gap, meanwhile, continues to narrow and this process has accelerated in the first two quarters of 2019. This gap is expected to turn positive at the beginning of 2021.



SOURCE: Banco de España.

- a The shaded area shows the last period of systemic banking crisis (2009 Q1-2013 Q4). The dotted lines represent forecasts.
- b The output gap is the percentage difference between the observed GDP and potential GDP. Values calculated at constant 2010 prices. See Cuadrado, P. and Moral-Benito, E. (2016), "Potential growth of the Spanish economy", Occasional Paper 1603, Banco de España.
- c The credit-to-GDP gap is calculated as the difference, in percentage points, between the observed ratio and the long-term trend calculated using a one-sided Hodrick-Prescott filter with a smoothing parameter equal to 25,000. This value is more in line with the financial cycles historically observed in Spain.

above its long-term equilibrium value, following several years of above-potential growth. It appears that this growth will continue over the next two years, even following the downward revision to the economic outlook.

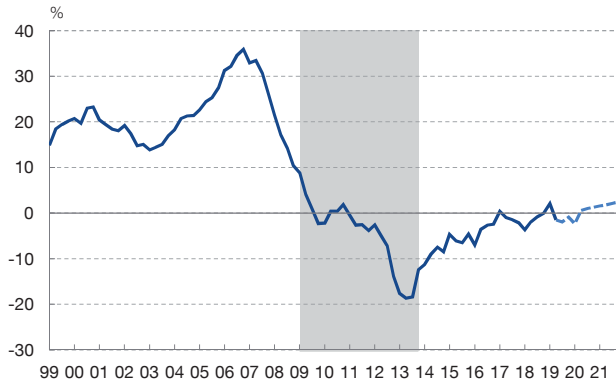
Some complementary quantitative indicators also point to a growing trend over the next two years. In particular, *credit intensity*, which measures the change in credit as a percentage of GDP, and house prices (see Chart 3.4) currently display values close to equilibrium, with an upward trend that is projected to continue over the next two years. Thus, *credit intensity* posted a positive value in 2019 Q1. Although this value is still low and, on June 2019 data, it will return to negative territory, this is the first time that it has been positive since the start of the crisis. The case of the indicators of house price imbalances is similar, insofar as narrowly positive values were observed for some of its basic components during the first two quarters of 2019, with the average remaining very close to equilibrium. If the expected trend in house prices continues, all the indicators in this category can be expected to show positive values towards the end of next year. As regards the *debt service of the non-financial private sector*, the decline that began at the beginning of the global financial crisis has continued. Currently, the adjustment of this indicator has been a consequence of the deleveraging in this sector, although, subsequently, the reduction in interest rates has also made a significant contribution. In consequence, this reduction can be expected to continue, albeit at a more moderate pace over the next

Chart 3.4

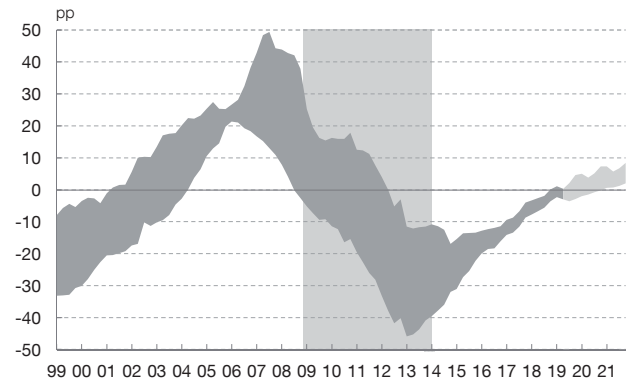
COMPLEMENTARY INDICATORS TO GUIDE THE SETTING OF THE CCyB (a)

The complementary indicators for calibration of the CCyB show no signs of cyclical systemic risk build-up, although, if current trends continue, those relating to credit and prices in the real-estate sector will show some signs of alert over the next two years.

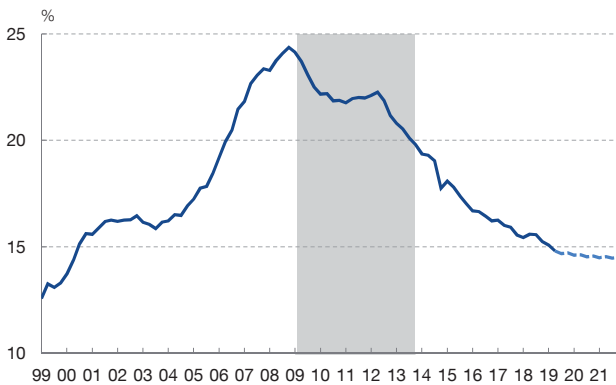
1 CREDIT INTENSITY (b)



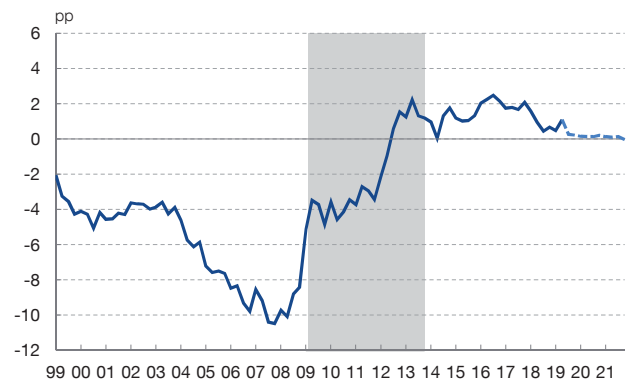
2 INDICATORS OF HOUSE PRICE IMBALANCES (c)



3 PRIVATE SECTOR DEBT BURDEN (d)



4 CURRENT ACCOUNT BALANCE (% OF GDP) (e)



SOURCE: Banco de España.

- a The shaded area shows the last period of systemic banking crisis (2009 Q1-2013 Q4). The dotted lines and lightly shaded area represent forecasts.
- b The credit intensity indicator is calculated as the annual change in credit to the non-financial private sector divided by cumulative GDP of the last four quarters.
- c The shaded area represents the range between the minimum and maximum values of the set of four indicators of imbalances in the real estate sector.
- d Ratio of debt service in the non-financial private sector calculated as specified in Drehmann M. and M. Juselius (2012) "Do debt service costs affect macroeconomic and financial stability?", BIS Quarterly Review, September.
- e The current account balance series is expressed as a percentage of GDP and seasonally adjusted.

two years, given that the debt reduction process has slowed significantly and interest rates have little room to fall further. Finally, the *current account balance* continues to show a small surplus (see Chart 3.4) and is expected to remain relatively stable over the next few years.

Although the macroeconomic environment may appear potentially favourable for activation of the CCyB, this diagnosis depends upon materialisation

of the central projection scenario, which is currently subject to numerous downside risk factors. Since legislation specifies that institutions must, in normal circumstances, have a one-year margin between activation of the CCyB and when they are required to comply with it, the expected behaviour of the relevant indicators should be given significant weight in the decision-making process. This diagnosis must be conditional upon materialisation of the central macro-financial projection scenario. If any of the risks mentioned before were to materialise (geopolitical uncertainty, the risk of a no-deal Brexit, intensification of the trade war, delay in the recovery of economic growth in the euro area), this diagnosis would be subject to change. In short, the current setting warrants keeping the CCyB at 0% for the time being. That said, both the short-term risks and the behaviour and projections of the indicators, mainly those relating to credit, house prices and economic growth, need to be closely monitored.

The CCyB is an instrument designed to be released in recessions. It is important that all financial system agents internalise the fact that, due to its countercyclical nature, the CCyB is designed to be built up during the expansionary phase of the cycle and released during recessions or sharp economic slowdowns, when banks may begin to record losses on their lending and to consume capital. If, in these circumstances, institutions are not permitted to reduce their levels of total capital by the amount of the previously accumulated buffer, the result may be a notably restricted supply of credit that further deepens the recession. Note that, when the economy is at the bottom of the cycle, banks' profits fall and investors' risk perception may be very pessimistic, seriously limiting the ability of banks to obtain funds internally (by retaining earnings) or externally. In these circumstances, the most likely solution is that they will reduce the size of their balance sheets and the supply of credit. Naturally, the intensification of the recession will tend to further worsen the situation of the banks.

Decisions regarding the timing of the release will be taken on the basis of a set of quantitative and qualitative indicators of the situation of the financial cycle. As Recommendation 2014/1 of the ESRB indicates, the same indicators that are used to calculate the CCyB may also contain useful information for its release. However, these indicators may provide imprecise information, as they were not designed specifically for this purpose. For this reason, the ESRB also recommends using information on bank funding markets, as well as indicators of general systemic stress in the financial markets. For example, the SRI presented in Chart 3.2 would come under this second category. Thus a significant and sustained increase in the SRI would be a possible signal that would help to identify the optimum moment for release. Obviously, this decision should also be based on leading indicators of economic activity.

In the event of release of the CCyB, the effect on the requirements for institutions should be immediate. Recommendation 2014/1 of the ESRB

advocates release of the CCyB without delay when systemic risk materialises, so as to moderate institutions' procyclical behaviour and facilitate the absorption of losses. However, the recommendation itself indicates that a gradual release would be preferable when risks are not observed to materialise but are judged to recede.

The Banco de España is carrying out various studies on the impact that a potential activation of the CCyB would have on credit to the non-financial private sector and on other macroeconomic variables. First, it is possible to estimate the cost of activating the CCyB in terms of credit using a structural vector autoregressive model. In principle, a standardised 1 pp increase in the CCyB during an upswing may lead to reductions in credit of up to 1.4 pp. The maximum effects would occur between one and two years after activation. However, the empirical evidence shows that release of the buffer during systemic crises has a much greater positive impact, mitigating the contraction in credit.

In this respect, the experience of use of dynamic provisions in Spain provides useful lessons regarding the potential impact of the CCyB. In particular, the available studies indicate that the introduction of countercyclical provisions in an expansionary setting, which is similar to the activation of the CCyB, had no effect on aggregate lending, although it may have caused some changes in portfolio composition at the most affected banks. However, the most notable effect is that stemming from the release of these countercyclical provisions in recessions. On the basis of this evidence, it is estimated that an increase of 1 pp in the CCyB during an upswing would provide, in the event of release during a systemic crisis, additional lending to businesses of up to 5.5 pp and would have a positive effect on the probability of their survival and on employment.⁷

The evolution of bank capital in Spain over the last 150 years has also been analysed, providing very rich information on the behaviour of capital over varied financial cycles and in very different banking activity environments.⁸ This analysis also indicates that the activation of the CCyB during upswings generates relatively limited costs: a CCyB requirement of 1 pp moderates credit growth by around 0.8 pp. However, the benefits arising from the release of the CCyB during systemic crises clearly exceed these costs, and can even mitigate the fall in lending by 6 pp during a recession. This suggests that the adverse impact of their activation on credit growth during upswings is more than offset by the positive effect of their release during systemic crises.

7 Jiménez, G. Ongena, S., Peydró, J.L. and J. Saurina (2017): "Macprudential Policy, Countercyclical Bank Capital Buffers and Credit Supply: Evidence from the Spanish Dynamic Provisioning Experiments", *Journal of Political Economy*, Vol. 125, No 6.

8 Bedayo, M. Estrada, A. and J. Saurina (2018), "Bank capital, lending booms and busts. Evidence from Spain in the last 150 years", Working Paper No. 1847, Banco de España, also find that an increase of 1 pp in the CCyB in anticipation of a global systemic crisis reduces the decline in credit in recessions by 6 pp.

Accordingly, the empirical evidence available for the case of Spain shows the existence of significant asymmetry between the (relatively) low costs of activating the CCyB and the (relatively) large benefits of their release during downturns. That in turn indicates the importance of the release process being supported by clear and transparent communication, generating adequate expectations and incentives for economic agents and the general public.

THE FINANCIAL SYSTEM AND CLIMATE CHANGE

Climate change associated with global warming has become a major social concern in recent years. In consequence, the authorities of various countries have assumed multilateral commitments to try to mitigate this phenomenon. Specifically, the 2015 Paris Agreement¹ established a plan of action with the aim of holding the increase in the global average temperature below 2°C above pre-industrial levels² and pursuing efforts to limit the temperature increase to 1.5°C. According to the estimates of the Intergovernmental Panel on Climate Change (IPCC), human activities have already caused approximately 1°C of global warming over pre-industrial levels. At the current pace, warming of 1.5°C would be reached between 2030 and 2052.³ Considerable reductions in greenhouse gas emissions would have to be achieved in coming decades to keep global warming below 2°C.

Climate change could have a highly negative impact at the macroeconomic level,⁴ and in the financial sector, particularly in the long term. The potential mitigating measures will have a short-term but smaller impact, especially if they are implemented on a step-by-step basis, allowing agents to adapt to the changes gradually. It seems logical that the later the measures are adopted, the more aggressive they will have to be, and this will heighten their negative impact as they will be concentrated in a shorter period of time.⁵

Given these considerations, the climate change-related risks facing the financial system may be divided into two categories: physical risks and transition risks. Physical risks are those associated either with global warming or with the increased frequency and intensity of climate

events such as droughts, floods or storms. Such events can, for instance, cause property damage and business disruption that may lead to financial losses. If these losses are insured they will be covered by the insurance sector,⁶ but if that is not the case they will have to be met by the households or firms concerned, which could drive up customer NPLs. Additionally, gradual physical risks, which can deteriorate relatively extensive economic areas, could lead to increases in NPLs and lower the valuation of some assets.

Transition risks are associated with the process of adjustment towards a low-carbon economy, for which purpose greenhouse gas emissions must be reduced. This transition is also relevant for the financial system, given that the introduction of certain policies, such as CO₂ emission limits or carbon taxes, technological innovation or changes in agents' preferences or in market sentiment, could affect an economy's demand and production patterns and could prompt valuation losses for certain financial assets, with an adverse effect on some branches of activity and a favourable effect on others, similarly to the effects on the firms themselves.⁷

The banking sector is subject both to physical and transition risks, which may manifest as credit, market and operational risks [see Bank of England (2018)].⁸ In its risk map for 2019, the ECB banking supervision again included climate change-related risks among the risks to be monitored from a supervisory standpoint.⁹ The ECB, drawing on an analysis of the exposure of the euro area banking sector, notes that, despite the limited data availability, climate change-related risks have the potential to become

1 See Paris Agreement (2015).

2 Likely ranging between 0.8°C and 1.2°C. See IPCC (2018), "Summary for Policymakers. In: Global Warming of 1.5 °C".

3 IPCC (2018). "Summary for Policymakers. In: Global Warming of 1.5 °C".

4 For a compilation of studies on the macroeconomic impact, see NGFS (2019), "Macroeconomic and financial stability. Implications of climate change". July 2019.

5 European Systemic Risk Board (2016), "Too late, too sudden: Transition to a low-carbon economy and systemic risk". ESRB. Reports of the Advisory Scientific Committee No 6 / February.

6 In Spain, the functions of the Consorcio de Compensación de Seguros (Insurance Compensation Consortium), a public body attached to the Ministry of Economy and Enterprise with legal personality, include coverage of extraordinary risks, providing compensation for damage caused by natural phenomena.

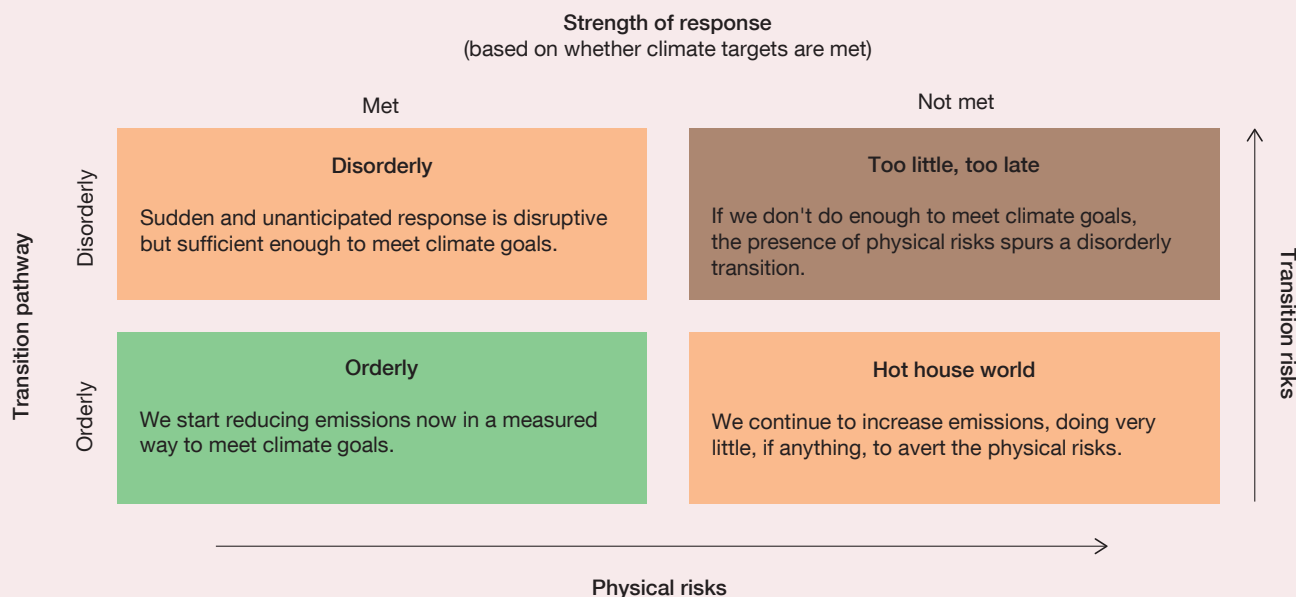
7 See NGFS (2019), "Macroeconomic and financial stability. Implications of climate change". July 2019.

8 See Bank of England (2018), "Transition in thinking: The impact of climate change on the UK banking sector". Bank of England. Prudential Regulation Authority. September 2018.

9 See ECB (2019), "ECB Banking Supervision: Risk Assessment for 2019".

THE FINANCIAL SYSTEM AND CLIMATE CHANGE (cont'd)

Table 1
PHYSICAL AND TRANSITION RISKS



SOURCE: NGFS (2019).

systemic for the euro area, in particular if markets are not pricing the risks correctly.¹⁰ Figure 1 shows the disruptive potential of the possible combinations of physical and transition risks.¹¹

The financial system also has a role to play in this transition. One of the Paris Agreement’s goals was that financial flows be made consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. The changes needed to comply with the Paris Agreement’s goals entail increasing investment and shifting resources. The estimates depend on the scenarios assumed, but according to the European Commission’s Action Plan on Financing Sustainable Growth, an annual investment gap of almost €180 billion would have to be met to achieve the energy and climate goals in the period 2021-2030.

In the institutional sphere, several initiatives have been launched related to the role of the financial system in climate change, notably the G20’s work,¹² the FSB’s Task Force on Climate-Related Financial Disclosures (TCFD), the European Commission’s Action Plan on Financing Sustainable Growth and the EBA’s work on sustainable finance.

Central banks are also working to include the possible implications of climate change in their analysis and their supervisory and macroprudential policy. At the end of 2017 the Network for Greening the Financial System (NGFS)¹³ was launched and now comprises (at September 2019) 42 central banks and supervisors and eight observers. Its purpose is to define and promote best practice both within and outside of its membership, conduct analytical work on green finance, contribute

10 See ECB (2019), “Climate change and financial stability”, Financial Stability Review, May 2019.
 11 European Commission (2018), “Action Plan: Financing Sustainable Growth”, COM(2018) 97 final.
 12 G20 GFSG (Green Finance Study Group) (2016), “G-20 Green Finance Synthesis Report”, September.
 13 At the initiative of the Banque de France at the Paris One Planet Summit, initially comprising eight central banks and supervisors. The Banco de España joined the network in April 2018; the Deputy Governor is a member of the Plenary Meeting.

THE FINANCIAL SYSTEM AND CLIMATE CHANGE (cont'd)

to the development of environment and climate risk management in the financial sector, and mobilise the necessary finance to make the transition toward a sustainable economy.¹⁴

As indicated in the ECB's Financial Stability Review (2019), a deeper understanding of the relevance of climate change-related risks for the euro area financial system is needed. For that purpose, better data availability and the development of a forward-looking framework for assessment of these risks are important.¹⁵ The TCFD's work to develop climate-related financial disclosures (albeit not compulsory but only voluntary for firms and institutions) is helping to achieve progress in the field of information disclosure. Likewise, development of the European Commission's Action Plan on Financing Sustainable Growth, which includes development of a taxonomy of sustainable activities and standards, will help to move towards a better assessment of these risks. There is, however, still more work to be done to understand all the possible implications for the financial system.

The Banco de España is aware of the importance of this and is also beginning to develop its own strategy to analyse the possible implications of climate change for the stability of the Spanish financial system and determine the responses it may adopt in its supervisory role. In addition, several activities and initiatives are under way to help raise awareness of the importance of this issue.

Specifically, a number of high-level meetings have been held with representatives of credit institutions, audit firms and portfolio managers, to convey to them the institutional and regulatory developments in this field, verify how prepared they are in respect of climate change-related risks and establish a dialogue with them. At the same time, the necessary analytical tools are being developed for assessing and modelling transition risk and its potential impact on credit institutions.¹⁶

Data availability is one of the main challenges in this area, and one of the Banco de España's first goals is to correct the data shortfalls in this field, for example relating to firms' individual CO₂ emissions and to environmental certificates of real assets such as housing.

The Banco de España has also begun to include environmental sustainability goals in its reserves management, participating, for example, in the open-ended green bond investment fund launched by the BIS.¹⁷

Lastly, it should be noted that the Banco de España actively participates in several international groups such as the NGFS, and in the remit of the ECB, ESRB, SSM and EBA, helping to make headway in the analysis of the implications of climate change for the financial system and the regulatory discussions this may entail.

14 The NGFS's initial work focused on six recommendations: i) including climate-related risks in financial stability monitoring and microsupervision; ii) including sustainability factors in own portfolio management; iii) remedying data gaps; iv) raising awareness and fomenting knowledge exchange; v) obtaining sound and coherent climate and environmental data at the international level; and vi) supporting the development of a taxonomy of economic activities.

15 See ECB (2019), "Climate change and financial stability", Financial Stability Review, May 2019.

16 The forthcoming Financial Stability Review of Banco de España will present a study on Spanish banks' exposure to the sectors most susceptible to transition risk, together with an analysis of their credit quality.

17 See [press release of 26 September 2019](#).

THE LIBRA PROJECT: KEY CHARACTERISTICS AND RISKS

The Libra White Paper, published on 18 June, formalised the project to create a new cryptocurrency sponsored and promoted by Facebook. The initiative is still at the definition stage, with 28 strategic partners from various origins – tech companies, some key financial industry players, representatives of non-profit organisations and academics, among others – having expressed interest so far.

According to its promoters, Libra's fundamental goal is to help raise global financial inclusion levels. Specifically, it seeks to combine the characteristics of virtual currencies (global reach and low volatility) with those of an infrastructure that will allow transactions to be completed quickly and efficiently, using blockchain technology, digital wallets and smart contracts.

Compared with other cryptocurrencies,¹ Libra presents a series of notable differences. First, the idea is that it will be backed by a basket of deposits and other low-risk high-liquidity assets. The Libra Reserve, as it is called, will be denominated in the main global currencies and administered by a network of custodians worldwide. The returns obtained on these investments will be used to cover the costs of the system and to pay dividends to the partners. Naturally, any change in price in the underlying assets will affect the price of each unit of Libra in any national currency at any given time.

Second, the initial governance model of Libra will not be decentralised. Rather, a non-profit foundation has been set up – the Libra Association – based in Switzerland, which will be responsible for coordinating the founding members when it comes to making the necessary technical, business and management decisions. The aim is to ensure the orderly development and correct functioning of Libra. The Association will also have the exclusive right to create and destroy the cryptocurrency monetary units and to determine the Libra Reserve's management policy.

Lastly, turning to the more technical aspects, Libra is based on open-code software. A new programming language has been developed to simplify the writing of the code and safeguard the integrity of the blockchain. In addition, the network will be administered by a small

number of validator nodes, to be confined initially to the founding members.

From the regulatory standpoint, discussions are still ongoing as to the regulations – current or new – that will govern the new cryptocurrency. If it were considered a deposit, it would have to be subject to banking regulation, as this is a regulated activity. However, in the Libra proposal there appears to be no explicit obligation to refund the amount deposited in full. It is also unclear if it can be considered electronic money; if it were, it would be subject to the Electronic Money Directive, but for that to be the case, any holder of Libras would be entitled to be reimbursed by the issuer at any time and for the nominal amount. If it were considered a financial product it would come under the investor protection umbrella, but that does not square with the fact that the main intention is for it to be used as a means of payment. In any event, there must be assurance that Libra customers will receive all the necessary information on the product and that they understand how it works.

Turning to the data protection aspect, the lack of international harmonisation may be an impediment for a proposal with such a global reach. What does seem much clearer, according to the published information, is that Libra would come under the scope both of the anti-money laundering regulations, in its capacity as a platform for exchange of a fiat currency for a virtual currency, and the counter terrorist financing regulations, as a provider of custodial services for electronic wallets.

Given that Libra has the three functions of money – a means of payment, a unit of account and a store of value – it is essential that it be correctly regulated, considering the possible implications for macroeconomic and financial stability if it were to fully evolve as a cross-border retail means of payment. And more so, if it were to cross over from retail payments and gain acceptance in the world of wholesale payments.

Firstly, it may have a significant impact on the effectiveness of monetary policy and the role of central banks. Given its multilateral nature, it could reduce monetary authorities' ability to influence domestic

¹ The analysis in this box is confined to privately issued cryptocurrencies. For a detailed analysis of the advantages and disadvantages of central bank-issued digital currency, see "Central bank digital currencies", BIS, the Committee on Payments and Market Infrastructures (CPMI) and the Markets Committee, March 2018.

THE LIBRA PROJECT: KEY CHARACTERISTICS AND RISKS (cont'd)

interest rates if it tries to hold the exchange rate steady, as it would encourage capital flows. Moreover, to the extent that a crypto-asset of this kind may become a generally accepted means of payment, in its capacity as a private money issuer it could affect the money creation process. This could also have fiscal implications as it would reduce seigniorage income.

Regarding financial stability risks, Libra may make the aggregate money supply procyclical, as it will allow assets that are not easily convertible (emerging market domestic currencies) to be transformed into much more liquid assets (Libra). It is important to remember that when a unit

of Libra is created, the money used does not disappear, but is invested in other financial assets. Besides, it may have a significant impact on the business of financial institutions, becoming a strong competitor and weakening both their income (fees) and their source of funding (deposits and other financial instruments).

Lastly, as it is a global currency, with access to the data of more than 2.4 billion potential users and with scarcely no transaction costs, it may contribute significantly to the international transmission of local shocks as it encourages capital inflows and outflows, with major implications for exchange rate shifts and volatility.

Annex 1

**CONSOLIDATED BALANCE SHEET
DEPOSIT INSTITUTIONS**

Assets	Jun-19	Change	Relative weight	Relative weight
	€m	Jun-19/Jun-18	Jun-18	Jun-19
		%	%	%
Cash and balances with central banks	227,584	0.8	6.4	6.2
Loans and advances to credit institutions	236,418	24.1	5.4	6.4
General government	102,616	-1.1	2.9	2.8
Other private sectors	2,128,128	3.9	57.8	58.0
Debt securities	511,169	1.9	14.1	13.9
Other equity instruments	36,244	-15.2	1.2	1.0
Investments	25,966	-8.5	0.8	0.7
Derivatives	140,890	1.3	3.9	3.8
Tangible assets	64,290	35.5	1.3	1.8
Other	192,757	-11.7	6.2	5.3
TOTAL ASSETS	3,666,062	3.4	100.0	100.0
<i>MEMORANDUM ITEMS</i>				
Financing to private sector	2,211,714	3.6	60.2	60.3
Financing to general government	500,208	1.9	13.8	13.6
Total NPLs	94,729	-12.4	3.0	2.6
Total NPL ratio	3.0	-54 (b)		
Liabilities and equity	Jun-19	Change	Relative weight	Relative weight
	m€	Jun-19/Jun-18	Jun-18	Jun-19
		%	%	%
Balances from central banks	208,272	-7.9	6.4	5.7
Deposits from credit institutions	294,521	1.3	8.2	8.0
General government	113,607	9.4	2.9	3.1
Other private sectors	2,039,226	3.4	55.6	55.6
Marketable debt securities	421,443	8.9	10.9	11.5
Derivatives	138,562	3.8	3.8	3.8
Provisions for pensions, tax and other	32,449	1.6	0.9	0.9
Other	149,169	3.4	4.1	4.1
TOTAL LIABILITIES	3,397,249	3.3	92.8	92.7
<i>MEMORANDUM ITEMS</i>				
Eurosystem net lending (a)	164,342	-3.0	4.8	4.5
Own funds	273,876	2.1	7.6	7.5
Minority interests	22,886	2.3	0.6	0.6
Valuation adjustments relating to total equity	-27,949	-16.9	-0.9	-0.8
TOTAL EQUITY	268,813	4.6	7.2	7.3
TOTAL LIABILITIES AND EQUITY	3,666,062	3.4	100.0	100.0

SOURCE: Banco de España.

a Difference between funds received in liquidity-providing operations and funds delivered in absorbing operations. June 2019 data.

b Difference calculated in basis points.

**CONSOLIDATED INCOME STATEMENT
DEPOSIT INSTITUTIONS**

	Jun-19	Jun-18	Jun-19	
	€m	% Change Jun-19/Jun-18	% ATA	
Financial revenue	56,836	5.7	3.14	
Financial costs	20,544	11.1	1.14	
Net interest income	36,292	2.9	2.01	
Return from capital instruments	835	23.0	0.05	
Net financial income	37,128	3.3	2.05	
Share of profit or loss of entities accounted for using the equity method	1,754	-12.5	0.11	
Net commissions	13,405	0.9	0.75	
Gains and losses on financial assets and liabilities	1,880	-33.3	0.16	
Other operating income (net)	-1,339	—	-0.06	
Gross income	52,828	-0.3	3.00	
Operating expenses	27,764	3.9	1.51	
Net operating income	25,065	-4.5	1.48	
Asset impairment losses (specific and general provisions)	7,583	3.9	0.41	
Provisioning expense (net)	2,590	28.4	0.11	
Income from disposals (net)	18	—	-0.03	
Profit before tax (including discontinued operations)	14,911	-9.0	0.93	
Net income	10,454	-10.8	0.66	
<i>MEMORANDUM ITEM</i>				
Income attributable to the controlling entity	8,952	-11.5	0.57	

SOURCE: Banco de España.

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SYMBOLS AND ABBREVIATIONS

€	Euro	IGBM	Índice General de la Bolsa de Madrid (Madrid Stock Exchange General Index)
ATA	Average total assets	IFRSs	International Financial Reporting Standards
BCBS	Basel Committee on Banking Supervision	IIP	International investment position
BIS	Bank for International Settlements	INCIBE-CERT	Instituto Nacional de Ciberseguridad - Centro de Respuesta (National Institute of Cybersecurity Response Centre)
BLS	Bank Lending Survey	INE	Instituto Nacional de Estadística (National Statistics Institute)
bn	Billion	INVERCO	Asociación de Instituciones de Inversión Colectiva y Fondos de Pensiones (Spanish Association of Investment and Pension Funds)
bp	Basis points	IPCC	Intergovernmental Panel on Climate Change
CBS	Consolidated banking statistics	IRB	Internal-Ratings Based approach
CCPs	Central counterparties	IRPH	Índice de referencia de préstamos hipotecarios (mortgage loan reference index)
CCyB	Countercyclical capital buffer	IRS	Interest rate swap
CDO	Collateralised debt obligation	JPY	Japanese yen
CDS	Credit default swap	LCR	Liquidity coverage ratio
CEBS	Committee of European Banking Supervisors	LSI	Less significant institutions
CET1	Common Equity Tier 1 capital	LSTI	Loan service to income
CJEU	Court of Justice of the European Union	LTI	Loan to income
CLOs	Collateralised loan obligations	LTP	Loan to price
CNMV	Comisión Nacional del Mercado de Valores (National Securities Market Commission)	LTV	Loan-to-value ratio (amount lent divided by the appraised value of the real estate used as collateral)
CNPIC	Centro Nacional de Protección de Infraestructuras Críticas (National Centre for the Protection of Critical Infrastructures)	m	Million
CPMI	Committee on Payments and Market Infrastructures	MREL	Minimum Requirement for own funds and Eligible Liabilities
COCOs	Contingent convertibles	NDER	Narrowly defined effective rate
COE	Cost of equity	NFCs	Non-financial corporations
CPB	CPB Netherlands Bureau for Economic Policy Analysis	NGFS	Network for Greening the Financial System
CRDIV	Capital Requirements Directive	NISD	Directive on security of network and information systems
CRR	Capital requirements regulation	NPISHs	Non-profit institutions serving households
CSDs	Central securities depositories	NPLs	Non-performing loans
CVA	Credit valuation adjustment	OECD	Organisation for Economic Co-operation and Development
DFR	Deposit facility rate	OMFIs	Other monetary financial institutions
EBA	European Banking Authority	OIS	Overnight indexed swap
ECB	European Central Bank	OLS	Ordinary least squares
ECM	Error correction model	OLSIs	Other less significant institutions
EDW	European Data Warehouse	ONS	Office for National Statistics (United Kingdom)
EMBI	Emerging Markets Bond Index	P2G	Pillar 2 guidance
EMCI	Emerging Markets Currency Index	P2R	Pillar 2 requirement
EMEs	Emerging Markets	PEMEX	Petróleos Mexicanos (Mexican Petroleum)
EMMI	European Money Market Institute	PER	Price Earnings Ratio
EEA	European Economic Area	pp	Percentage points
EMU	Economic and Monetary Union	PSD2	Payment Services Directive
EONIA	Euro overnight index average	P/B	Price to book value
EPA	Encuesta de Población Activa (Spanish Labour Force Survey)	Q	Quarter
EPU	Economic Policy Uncertainty Index	QIS	Quantitative impact study
ESRB	European Systemic Risk Board	ROA	Return on assets
EU	European Union	ROE	Return on equity
€STR	Euro short-term rate	RWAs	Risk-weighted assets
FDI	Foreign direct investment	SA	Standardised approach
FED	US Federal Reserve	SI	Significant institutions
FL	Fully loaded	SLIs	Specialised lending institutions
FLESB	Forward-Looking Exercise on Spanish Banks	SRI	Systemic risk indicator
FSB	Financial Stability Board	SSM	Single Supervisory Mechanism
FSMA	Financial Services and Markets Authority (of Belgium)	TA	Total assets
FSR	Financial Stability Report	TARP	Troubled Asset Relief Program
GBP	British pound sterling	TLTROs	Targeted Longer-term Refinancing Operations
GDP	Gross domestic product	T2	TARGET2
GDPR	General Data Protection Regulation	T2S	TARGET2-Securities
GFSG	Green Finance Study Group	USD	United States dollar
G-SIIs	Global Systemically Important Institutions	WG-RFR	Working group on euro risk-free rates
ID	Data obtained from individual financial statements		
ICO	Instituto Oficial de Crédito (Official Credit Institute)		

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DE	Germany	IE	Ireland	NO	Norway		