Financial Stability Report

June 2019

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Content

Overview

In 2018, the Portuguese economy continued to adjust across a range of dimensions relevant to financial stability, although, in general, this adjustment continues slowing down.

The current and capital account again posted a surplus, albeit lower than in 2017, and the international investment position (IIP, assessed as a percentage of GDP) improved slightly. Meanwhile there was a recomposition in the resident sectors' net lending, with progress achieved at general government level contrasting with the decrease in net lending of non-financial corporations (NFCs) and households, in a context of recovering corporate investment.

The NFC savings rate decreased in 2018, in contrast to the significant increase observed in recent years, which was instrumental to the financing of investment without significant debt accumulation. In the case of households, the savings rate remained at a very low level, making the sector vulnerable to adverse developments in economic activity and/or financing conditions.

The indebtedness ratios of households and NFCs, measured as a percentage of disposable income and GDP respectively, continued to decline in 2018. This was further accompanied by an increase in NFCs' capitalisation and liquidity, which is consistent with a decrease in the level of risk associated with the sector. However, both for households and NFCs, the reduction in the indebtedness ratios arose mainly from the denominator effect. Moreover, when assessed in the context of the euro area, the indebtedness ratios of these two sectors remain high, despite the significant progress made in recent years.

Similarly, the public debt ratio (as a percentage of GDP) continued to decline in 2018, despite the debt increasing in nominal terms. These developments reflected the significant primary surplus and the favourable dynamic effect, resulting from a nominal GDP growth rate higher than the interest rate implicit in the debt stock. On the basis of a central scenario, the Portuguese public debt ratio is expected to decline further in the coming years.

Favourable developments in the public accounts have resulted in an improvement in investors' risk perception, which was reflected in turn in a compression in government debt spreads, as well as an improvement in ratings. The three main rating agencies rank Portuguese sovereign debt as 'investment grade'. In line with the past few years, it is essential to pursue policies that promote the sustainability of the public finances, in particular taking into account that this is a decisive factor in international investors' risk perception of domestic economic agents.

In turn, in 2018 the Portuguese banking system recorded positive developments in relevant dimensions, in particular the significant recovery of profitability and the continuation of a sharp reduction in non-performing loans (NPLs). In 2018 the profitability recovery was based, in particular, on the fall of the loan loss charge, but also benefited from a further decrease in operating costs. The recovery occurred despite the very significant decrease in income from financial operations, largely associated with lower gains from financial assets, as well as recognition of losses on non-performing loan sales carried out by some institutions and also registration of losses on financial derivatives. In turn, the reduction in stock and NPL ratio continued at a marked pace, both in gross terms and net of credit impairments. At the end of 2018 the ratio reached 9.4% in gross terms and 4.5% in net terms. The liquidity position remained at comfortable levels. The total capital ratio stabilised and there were some issues of debt instruments eligible for own funds.

The banking system is benefiting from the stabilisation effort made in the previous years. In 2017 the increase in the capitalisation of some of the major Portuguese banks is noteworthy, boosting their ability to reduce the stock of NPLs and improving at the same time the international

investors' perception of Portuguese banks and, as a result, of the sovereign. In addition, the strategy of reducing operating costs carried out by several banks, which tends to lead to a rise in non-recurring costs in the short term, begins to deliver positive results.

Thus, the reduction in some vulnerabilities of the Portuguese economy and banking system continued, in particular when compared to the situation that immediately preceded the international economic and financial crisis. However, these developments in recent years have taken place in a particularly favourable economic and market context. The Portuguese economy has maintained growth rates that are estimated to be higher than potential output, the financing conditions of Portuguese issuers, in particular sovereign debt, have been favourable, and the real estate market has been markedly recovering, significantly reflecting non-residents' behaviour.

It is essential to maintain the adjustment paths in a context of an economic slowdown. In fact, most economic growth projections have recently been revised downwards. However, there is uncertainty about the pace at which the slowdown will take place.

The main risk to financial stability in the Portuguese economy is still the possible significant and abrupt reassessment of risk premia, either triggered by a global or European reassessment movement or by an event of a more idiosyncratic nature occurring nationally. This risk materialisation may result from a higher slowdown in economic activity than anticipated by market investors, including through the materialisation of risks arising from trade tensions, the worsening of political uncertainty or a credit event at the international level in a framework of NFCs' record leverage.

After the sell-off movement observed at the end of 2018, the risk premia returned to levels below the historical average and episodes of volatility have been relatively contained. However, the sell-off movement also revealed significant vulnerabilities in the financial market, particularly the fact that, in the next reversal of the cycle, market volatility may be higher than in previous episodes.

Following the elections in Italy in March 2018, the government bond yields in this economy increased, reflecting debt sustainability concerns. To date, contagion to yields on other euro area economies has been relatively limited. However, in an extreme situation where uncertainty builds up (e.g. in relation to trade tensions), a risk premia reassessment may occur, as well as the resurgence of redenomination risks and financial and economic fragmentation in the euro area, resulting in a deterioration in the market sentiment towards other Member States, especially those with higher indebtedness levels.

A possible upward reassessment of sovereign debt risk premia is particularly important for the Portuguese financial sector, taking into account the increasing exposure of institutions to government bonds, namely domestic sovereign debt, and the relatively long maturity of this exposure. In the case of the banking sector, such exposure and its residual maturity have been increasing over this decade, thus the bank's capital position has become more sensitive to the materialisation of this risk. These developments may not, however, be decoupled from the low interest rate environment and the sector's high liquidity.

At international level, the abrupt reassessment of risk premia and its propagation is becoming more likely due to the global prolonged low interest rate environment, which has contributed to the development of new market financing instruments (e.g. leveraged loans), leading in turn to excessive growth in credit to highly indebted enterprises and to a potential deterioration in the credit quality. Although it is not a direct vulnerability for Portugal, a credit event of a large enterprise could trigger a global reassessment of risk premia.

The reassessment of risk premia at international level may have other adverse effects on financial stability, as it may abruptly affect external demand directed for the Portuguese economy, both exports of tourism services and direct investment in real estate assets. In fact, non-residents' behaviour has made an important contribution to the highly buoyant Portuguese real estate market, which has shown some signs of overvaluation in the residential segment since the second half of 2017. Portuguese banks remain materially exposed to developments in the real estate market and have benefited from its recent momentum. However, unlike other European countries, the rise in real estate asset prices in Portugal has co-existed with a continuous reduction in the stock of loans to households for house purchase. In addition, Banco de Portugal's macroprudential recommendation on new consumer credit agreements and credit agreements relating to residential immovable property may help mitigate the risk of interaction between domestic credit and real estate prices.

Finally, a significant and long-lasting risk premia reassessment would necessarily result in a worsening in the financing costs of resident sectors, similarly to what occurred in the most severe period of the sovereign debt crisis that affected the Portuguese economy at the beginning of the decade. This will be more relevant the greater the need to access the international capital markets, either to refinance existing debt or, in the case of the banking sector, to comply with new regulatory requirements (notably, associated with the MREL requirements).

The prolongation of the very low interest rate environment creates risks to financial sector profitability. The maintenance of low interest rates tends to impact favourably on enterprises' and households' debt service, helping reduce default levels and mitigating the impact of the economic slowdown. However, the prolonged low interest rate environment also fosters more intense search-for-yield behaviour, risking the mispricing of various asset classes (e.g. real estate assets and shares) and creating incentives in the debt market for a compression in spreads through competitive pressure. More specifically, in financial intermediation, it creates additional pressure on the sustainability of bank's net interest income, enhancing incentives to expand the credit portfolio and a potential mismatch between the credit spread and underlying risk. The attempt to gain market share through inadequate risk pricing will tend to result in a future increase in credit default, particularly in a context of deterioration of the economic situation.

It is crucial that credit institutions maintain the necessary prudence in pricing their operations, taking into account not only short-term incentives for income generation, but also weighing potential losses over the whole time horizon expected for operations, which tends to largely exceed what is contractually agreed, given the typically persistent behaviour of this type of relationship.

Direct or indirect exposure to some developing countries particularly dependent on commodity exports remains significant for some Portuguese banks. Despite the heterogeneous investment profile, most direct exposures to these economies take the form of loans and investments in government bonds, with associated credit risk and market risk (exchange rate changes and commodity prices), and the two types of risks tend to interact. These exposures show NPL ratios substantially higher than those recorded in domestic activity.

Digitalisation of the financial sector and cybercrime may be a source of systemic risk, such that financial institutions must be adapted to a new framework in terms of business model, as well as the associated risks and challenges, including cyber-risk and potential competition from technology companies known as 'bigtechs'. After a period of significant challenges linked to the recent economic and financial crisis, the Portuguese banking system is in the process of digital transformation and adjustment to the new technological environment, either by

investing in digital technology or by establishing partnerships with new players, or by internalising technological development. In this context, cybersecurity takes on a leading role. Cyber incidents have the potential to undermine the provision of financial services, either through direct financial or operational impacts, or by the inherent reputational impact. Financial institutions in Portugal have intensified efforts and investments in this area, as well as cooperating among themselves and with the supervisor. The supervisor has taken several measures to tackle these risks, and the Single Supervisory Mechanism has identified cybercrime and IT disruptions as one of the main risk factors in the banking sector. From the competent authorities' point of view, it is also essential to continue to monitor and foster an in-depth knowledge of the new market players. Among these, the entry into the market of bigtechs is noteworthy: they use their own platforms to offer financial services, generally starting with the area of payment services, but extending their activity to other types of financial products in other jurisdictions.

A potential source of risk to financial stability that has emerged in the most recent period is related to climate change, both in the short term, due to its growing physical consequences, and in the medium and long term, also as a result of the policy initiatives that will be adopted. In particular, the so-called transitional risks reflect uncertainty as to how to adopt a sustainable low-carbon economy and, in particular, the speed of this transition ('soft' vs 'hard landing'). Financial institutions should increasingly internalise issues in their decision-making processes, such as the need for compensation payments, devaluation of collateral in operations, or exposure to certain assets that are more vulnerable to climate change risks and ensuing risk materialisation, with a potential impact on their financial soundness.

As indicated in previous issues of the *Financial Stability Report*, the fragmentation of the European institutional architecture still persists – due to the fact that the decision-making centres on the banking sector's supervision and resolution matters have been transferred to the European level, although the costs arising from these decisions, in terms of preserving financial stability, continue to be largely borne by national 'safety nets'. Such fragmentation is reflected in the absence of a European Deposit Insurance Scheme, a robust crisis management framework that safeguards the continuation of the financing flow without disruptive effects, and a sustainable balance that promotes financial stability in the treatment of cross-border banking groups. An incomplete Banking Union or even, more generally, an incomplete Economic and Monetary Union intensifies the risks to financial stability.

According to the European Commission, despite the significant strengthening of the European regulatory framework, recent cases of money laundering associated with European banks show that there are still important weaknesses at European level in the field of prevention of money laundering and terrorist financing (ML/TF). Given that the institutional frameworks applicable to prudential and preventive supervision of ML/TF are different, the interaction (in particular in the area of cooperation and information sharing) between the prudential and the preventive supervision of ML/TF is crucial – both internally (between national ML/TF prudential and preventive authorities) and across borders (between the authorities of different Member States and with third country authorities). In this context, in December 2018 the Council of the European Union adopted conclusions on an action plan to reinforce the monitoring of money laundering, and the proposal for granting reinforced powers to EBA in the field of prevention of ML/TF has already been approved. At the domestic level, an updating of the ML/TF national risk assessment was initiated in 2018. In addition to the traditional off-site monitoring of the institutions supervised by Banco de Portugal, two cycles of thematic inspections were launched on restrictive measures and account opening through digital channels, which aimed primarily to facilitate the uptake of regulatory innovations in these areas.

In short, the Portuguese economy remains vulnerable to adverse shocks with potential consequences to financial stability, most notably the significant and abrupt reassessment of risk premia at global or European level, which may be triggered by a number of factors and with negative consequences to the asset market and economic activity.

The prospects for a slowdown in economic activity poses a challenge to financial stability, in particular given the still high level of indebtedness. This, together with overvaluation in the residential real estate market, in particular in some geographical areas and market segments, suggests that banks should take particular care in the setting of credit standards. In fact, attempting to increase lending by setting interest rate spreads that do not cover credit risk in a sustainable manner will lead to increased credit default in the future.

Despite the significant reduction in the NPL ratio since mid-2016, this remains high in the European context, and it is therefore important to continue to implement the plans to reduce NPLs submitted to supervisors.

Financial institutions should increasingly internalise in their decision-making processes the risks arising from climate change, as well as the need to adjust their business models in order to remain technologically efficient and competitive, in view of the entry of new players in financial activity, and to maintain adequate risk control to include, inter alia, operational risks, cybercrime, money laundering and terrorist financing.

Structural adjustment of the various non-financial sectors' financial situation must continue in order to ensure the sustainability of their debts.

In the case of non-financial corporations and banks, it is important to further strengthen their capacity to absorb negative shocks through appropriate levels of capitalisation. It is therefore essential to adopt prudent distribution policies for income generated, particularly in regard to dividends.

I Financial stability outlook

1 Risks, vulnerabilities and macroprudential policy

1.1 Risks and vulnerabilities

The macrofinancial environment of the Portuguese economy is largely determined by the euro area framework. The high degree of economic and financial integration of the euro area in the world economy explains the overall extent of the risks listed in this Report. The risks identified herein may interact together and, should they materialise, mutually enhance one another.

Risks to global financial stability have worsened over the last six months, reflecting the prospects of a slowdown in economic activity, but remaining uncertain as to the pace of adjustment.

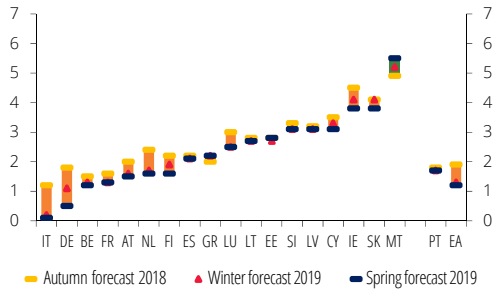
The weaker economic outlook, together with high geopolitical uncertainty and trade tensions, pose additional challenges to the stability of the global financial system. The uncertainty and risks associated with the world economy's growth have increased in recent months (Charts I.1.1 and I.1.2), in particular, due to international trade tensions (e.g. US and China; US and EU), but also due to the instability surrounding the UK's exit from the EU) (Brexit).[1] Besides, a sharper slowdown in China's economic activity (despite higher-than-estimated developments in early 2019) and the still high sensitivity of some emerging markets to changes in risk premia may accentuate downside risks to global economic activity.

In the euro area, deterioration in confidence and social tensions are pointed out as the main factors influencing growth prospects, which resulted particularly in a slowdown in industrial production (European Commission, May 2019).[2] There is, however, uncertainty as to the pace at which the slowdown in economic activity will take place, also taking into account the more favourable than projected developments in early 2019. The deceleration in car production in Germany, as well as political uncertainty and the confidence deterioration in Italy, are the main reasons given by the European Commission for a downward revision of economic growth in the euro area in 2019, to 1.1% (0.6 p.p. below the December 2018 projections). The economic slowdown and the significant decline in oil prices also led to a downward revision of inflation expectations, with the European Central Bank (ECB) projecting a progressive decrease in the HICP to 1.2% in December 2019 (0.4 p.p. less compared to December 2018 projections).

In Portugal, a sharper slowdown in economic activity of its main trading partners, such as Germany, France and the United Kingdom (which accounted for 31% and 45% of Portuguese exports of goods and services respectively in 2018), increases the downside risks to domestic economic activity, with implications for the financial sector (inter alia, through a rise in non-performing loans – NPLs). A sensitivity analysis[3] shows that a 3.3 p.p. adverse shock on external demand for Portuguese goods and services may result in a decline in GDP in 2019 and 2020 of up to 0.7 p.p. each year.

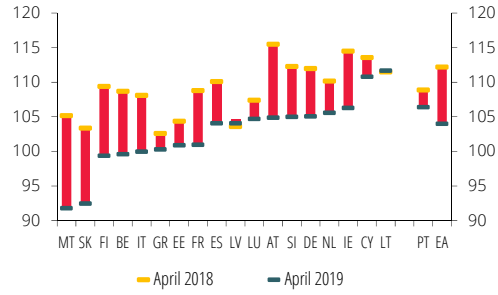
1. For further details, see Box 1.
2. European Commission European Economic Forecasts (May 2019).
3. See Box 1 "Sensitivity analysis of the projections to adverse external demand shocks", *Economic Bulletin*, Banco de Portugal, March 2019.

Chart I.1.1 • European growth outlook (%)



Source: European Commission European Economic Forecasts (November 2018, February 2019 and May 2019). | Notes: The chart shows GDP growth forecasts for 2019 for EU countries, as published by the European Commission in the most recent forecast round. Orange (green) bars denote a downward (upward) revision since the first forecast in November 2018.

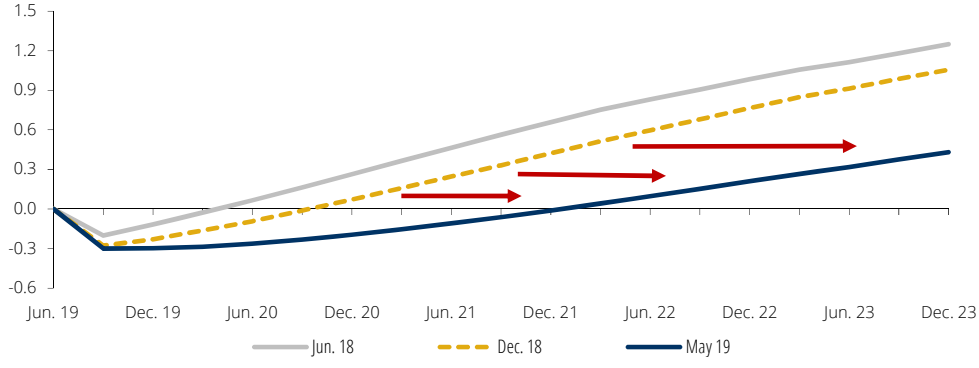
Chart I.1.2 • Economic sentiment indicator | 100 = Average since 1990



Source: European Commission Business and Consumer survey. | Notes: The chart shows the euro area economic confidence indicator, calculated as an average since 1990 of the seasonally adjusted balances of answers to selected questions. The weights for sectors: 40% industry, 30% services, 20% consumers, 5% construction and retail trade. About 140,000 firms and 41,000 consumers are surveyed every month across the EU. Last observation: April 2019 (published on 29 April 2019).

In response to the significant slowdown in the European economy and inflation expectations, on 7 March 2019, the ECB announced an extension of the accommodative monetary policy for the next two years, namely the maintenance of the key interest rates at record lows and a new longer-term financing line to the banking sector (TLTRO-III, two-year maturity).[4] With these measures, the ECB intends to preserve the favourable conditions for banking funding and the transmission of the monetary policy. However, the terms and requirements for access to TLTRO-III operations are not known yet, in particular their cost. In this context, monetary authorities have also signalled the need to analyse negative externalities on banking intermediation resulting from the maintenance of negative interest rates on deposits (Draghi, M.).[5] Compared to the previous *Financial Stability Report* and reflecting the announced monetary policy, there is a downward shift in the interest rate curve implicit in EURIBOR futures contracts, which are expected to reach positive values only from March 2022 onwards (Chart I.1.3).

Chart I.1.3 • Implied interest rate in the three-month EURIBOR futures contract | Per cent



Source: Refinitiv (Banco de Portugal calculations). | Notes: 90-day average value of the interest rate implicit in the three-month EURIBOR futures contracts traded in the London International Financial Futures and Options Exchange (LIFFE). Latest update: 20 May 2019.

4. Targeted longer-term refinancing operations.
5. https://www.ecb.europa.eu/press/pressconf/2019/html/ecb.is190307~de1fdbd0b0.en.html

A prolonged very low interest rate environment can increase the risks to the financial system in Europe if it boosts a more intensive search-for-yield

The maintenance of very low interest rates tends to have a positive impact on the non-financial sector debt service. On the one hand, it helps to reduce the levels of arrears in this sector, mitigating the effects of the slowdown in the economic activity and, on the other hand, it makes liquidity management by banks easier. However, the very low interest rate environment may also have unwanted effects on financial stability, particularly if it promotes a stronger search-for-yield, enhancing the mispricing of several asset classes, such as real estate assets, stocks and, in the case of debt, by an excessive compression in spreads.

Despite representing a stimulus to the economy, the prolonged very low interest rate environment may add additional pressures on the profitability of the financial system (Charts I.1.4 and I.1.5) (Section 4.1 Profitability). In particular, in the case of banks, the prolonged very low interest rate environment could reinforce the incentives to expand the credit portfolio, especially for riskier loans, and stimulate a mismatch between the credit spread and underlying risk (Section 4.4 Credit standards). Strategies to increase market share based on mismatched risk pricing policies tend to lead to future NPL increases, in particular in a context of economic activity slowdown (Section 4.2 Asset quality). However, in 2018, there was a further differentiation of interest rate spreads on new loans to non-financial corporations according to their credit risk, and the new loans continued to be granted to lower-risk enterprises.

Chart I.1.4 • Spreads on new credit business and depostis – Non-Financial Corporations | Percentage points

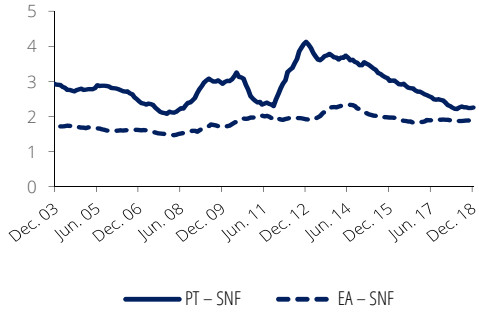
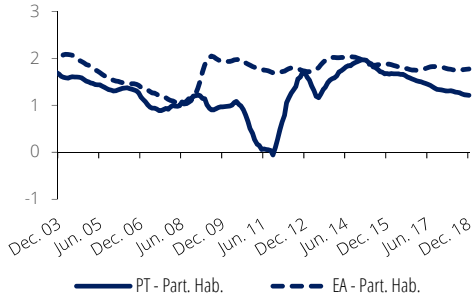


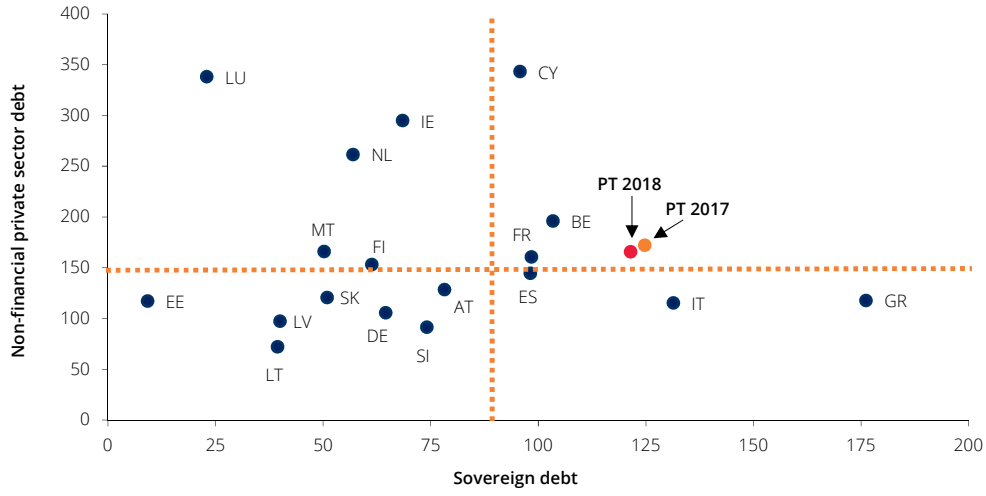
Chart I.1.5 • Spreads on new credit business and deposits – Households for house purchase | Percentage points



Source: European Central Bank (Banco de Portugal calculations). | Notes: Difference between MFI interest rates for new business loans (NFCs or households for house purchase, respectively) and a weighted average rate of new deposits from households and NFCs. Values for euro area are computed as a simple mean. Half-year flows.

The risk of a significant and abrupt reassessment of overall risk premia intensified amid a less favourable macroeconomic environment and high indebtedness

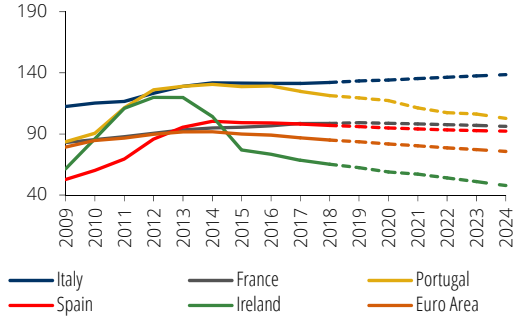
Chart I.1.6 • Debt in non-financial and sovereign sectors – 2017 | Percentage of GDP



Sources: Banco de Portugal and Eurostat. | Notes: The dashed lines refer to the euro area average for both sectors in 2017. Indebtedness comprises total debt (loans, securities and trade credits of non-financial corporations and households. Public debt is calculated according to the definition used in the excessive deficit procedure (Regulation (EC) No 479/2009), i.e. gross general government consolidated debt at nominal or face value, the so-called Maastricht debt.

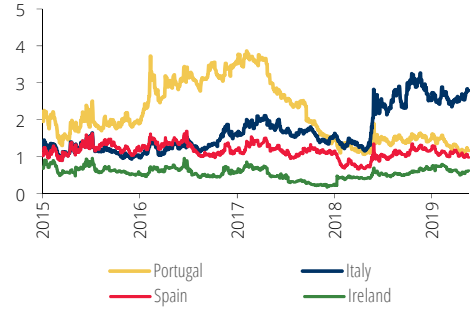
The economic downturn amid a still high and heterogeneous level of public and private indebtedness (Charts I.1.6 and I.1.7) makes the European economy particularly vulnerable to differentiated risk reassessments across countries and financial market segments. In this context, the Member States with higher levels of indebtedness and medium/long-term structural constraints are particularly exposed to a significant reassessment of risk premia (Section 3.1 General government). This vulnerability was noticeable, for example, after the elections in Italy, with a partial materialisation of this risk reflected in the increase in government bond yields and the re-emergence of debt sustainability concerns (Chart I.1.8). To date, contagion to yields on other euro area economies has been relatively limited. However, in an extreme case where the situation/uncertainty deteriorates (e.g. with the outcome of the European elections and increased trade tensions), a risk premia reassessment may occur, as well as the resurgence of redenomination risks and financial and economic fragmentation in the euro area, which may lead to a deterioration in market sentiment towards other Member States.

Chart I.1.7 • General government gross debt | Percentage of GDP



Source: IMF, *Fiscal Monitor* April 2019. | Note: Dashed lines represent IMF projected values.

Chart I.1.8 • 10-year Sovereign debt securities – spread versus Germany | Basis points



Source: Refinitiv (Banco de Portugal calculations). | Note: Last update: 20 May 2019.

In the case of the Portuguese economy, the recovery in economic activity and the adjustment of the budgetary position of general government have contributed to the improvement in international investors' perception of the domestic economy. The three main rating agencies currently rank the Portuguese sovereign debt as 'investment grade',[6] thus widening the range of potential investors and reducing the cost of financing. However, and despite the progress observed in recent years, particularly in the private sector, the Portuguese economy continues to record high levels of indebtedness in the European context, both in the public sector (121.5% of GDP) and in the non-financial private sector (165.5% of GDP).

Moreover, extending the current financing conditions may help to maintain the high leverage levels in the non-financial sector. In a context of increased turbulence and uncertainty in international financial markets, this vulnerability is particularly relevant, given the Portuguese economy's dependence on and sensitivity to the global financing conditions. For example, in December 2018, Portugal was still one of the Member States with the highest net external debt (89% of GDP). This dependence is all the more important given the structure of general government indebtedness in Portugal. Despite the increase to 10.4 years in the average maturity of the 2018 issues, Portugal continues to record – alongside Italy – a greater share of short-term debt, being therefore comparatively more sensitive to sharp changes in sovereign risk premia.

The high exposure to sovereign debt securities leaves the Portuguese financial system particularly sensitive to risk premia reassessments in international financial markets

An economic environment characterised by downside risks to the economic activity may lead to renewed uncertainty as to the sustainability of public and private debt. As mentioned, and despite the decrease observed in the most recent period, the Portuguese general government sector continues to record high levels of indebtedness in the European context. This is a relevant exposure for the Portuguese banking sector, which concentrates a significant share of its assets on these debt securities. Indeed, the banking sector's high liquidity has resulted in an increase in its exposure to government bonds, which amounted to 12.7% of total assets in December 2018, of which 9% were related to the Portuguese sovereign and the remainder to government bonds of other euro area countries, such as Spain and Italy (Section 4.3 Concentration of exposures). In the case of the insurance sector, and despite the adjustment observed in the last two years, exposure to the domestic sovereign remains particularly high (about 26% of total assets).

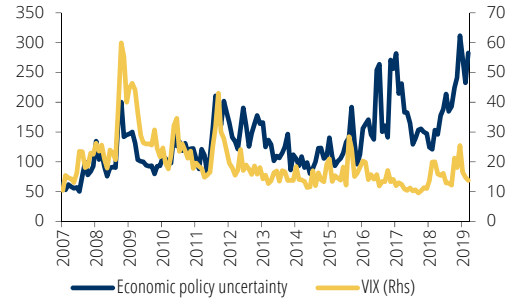
Portuguese banks are thus vulnerable to a hypothetical scenario of risk premia reassessment in international financial markets. First, and given that changes in yields on sovereign debt securities in the Portuguese banks' portfolio tend to be positively correlated in situations of financial stress, diversification gains may be limited. Second, there has been an increase in the average residual maturity in the securities portfolios held by the banking sector, which, in the absence of hedging strategies, increases the exposure to interest rate risk. The regular sensitivity analysis of the main Portuguese banks' CET1 capital ratio shows that, as at December 2018, a possible increase by

6. More specifically, in the second half of 2017 the ratings assigned to the Portuguese Republic's long-term debt were revised upwards by Fitch to investment grade. In April 2018 DBRS also raised the rating by one level, from BBB- to BBB (currently with a positive outlook). In October 2018, Moody's also revised its rating to Baa3, with a stable outlook. More recently, in March 2019, Standard & Poor's (S&P) also revised its rating to BBB-, with a stable outlook.

100 b.p. in Portuguese government bond yields would reduce the CET1 ratio by about 51 basis points.[7] Accordingly, a sharp and substantial reassessment of risk premia – whether of a global or European nature – remains the most relevant risk to financial stability in Portugal.

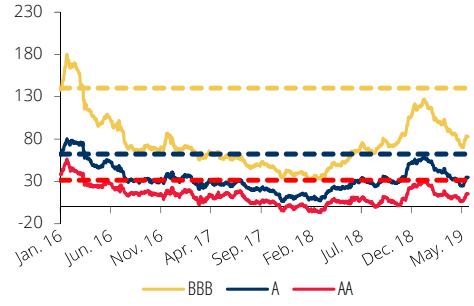
The materialisation of a scenario of increased sovereign risk premia, even in part, would tend to generate a negative interaction between the real economy and the financial sector. This may be particularly relevant for countries such as Portugal, which, due to the already high level of indebtedness and low savings, are less able to absorb sudden and adverse shocks from international financial markets. Furthermore, a potential change in sovereign risk perception would tend to be passed on to other institutional sectors, resulting in a likely deterioration in funding conditions and making it more difficult for banks to issue instruments to comply with the MREL requirements.[8] The adverse impact on the funding conditions of households and enterprises would be mitigated by the accommodative monetary policy, as the overall funding conditions of these two sectors are closely linked to short-term interest rates. However, in 2018, the household savings rate remained at historically low levels (4.6% of available income), and there was also a reduction in the firms' savings rate (down by 1.2 p.p. to 9.4% of GDP). In the case of enterprises, the savings rate remained at a level clearly above that observed immediately before the international economic and financial crisis, being nevertheless low in the European context. These trends point to a lower resilience of households and enterprises to adverse shocks on the economy (Section 3.2 Non-financial private sector). Thus, it is essential to pursue policies that promote the sustainability of public finances, the savings of households and enterprises, potential growth of the Portuguese economy and a more resilient banking system, as these factors positively affect the risk perception by international investors.

Chart I.1.9 • Economic policy uncertainty and VIX | Lhs: Index; Rhs: %



Sources: Economic Policy Uncertainty webpage, Refinitiv and Banco de Portugal calculations. | Notes: Monthly data. The index measures global economic policy uncertainty, as based on newspaper search in 20 countries (aggregation to the global index is GDP-weighted). For further details, see Davis (2016), "An Index of Global Economic Policy Uncertainty," *Macroeconomic Review*, and Baker/Bloom/Davis (2016), "Measuring Economic Policy Uncertainty", *Quarterly Journal of Economics*. The VIX represents the implied volatility in options prices on the S&P 500 equity indices. Last observation: March 2019.

Chart I.1.10 • Private sector risk premia | Basis points

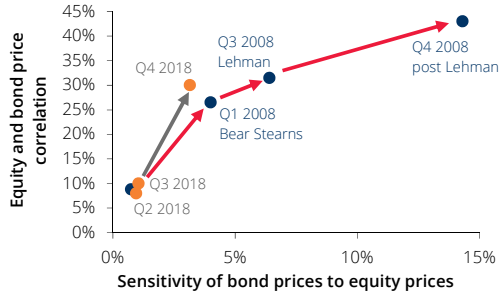


Sources: Refinitiv and Banco de Portugal calculations. | Notes: Spread between the average yield of iBoxx Index of private non-financial corporations and the average mid-swap interest rate for the maturities of one to ten years, by credit risk notation. The dashed lines represent the 2000-19 averages. Latest update: 20 May 2019.

7. Excluding hedging strategies. This impact incorporates the removal of a prudential filter as of 1 January 2018, allowing banks to make regulatory capital ratios immune to changes in the value of public debt, as well as the reclassification of government bonds under the new accounting framework (IFRS 9).
8. Minimum requirement for own funds and eligible claims able to absorb losses and contribute to the recapitalisation of the institution in case of resolution.

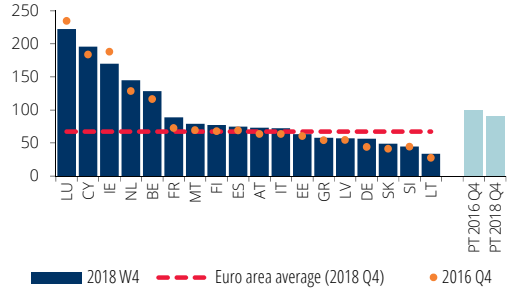
The likelihood of an adverse shock to the global economy, leading to a reassessment of risk premia, remains high. This reflects the prospects of slowing global economic growth mentioned above, but also the fact that political uncertainty is reaching historical peaks (Chart I.1.9). However, in the international financial markets, and after the sell-off movement observed at the end of 2018, risk premia were back to levels below the historical average (e.g. A below the historical average of AA, Chart I.1.10) and episodes of volatility and risk premia reassessments have been relatively contained (Section 2.2 Financial markets). From a financial stability perspective, the correction observed in the stock markets at the end of 2018 is a positive factor. Despite the significant magnitude and intensity of the correction, the market reacted in a controlled manner, without producing 'panic selling', which contributed to some extent to a limitation of risk appetite among some investors. However, the sell-off movement also revealed relevant vulnerabilities in international financial markets, notably that in the next reversal of the cycle market volatility may be higher than in previous periods, a possibility enhanced by the downward revision of economic growth. For example, liquidity in high-yield corporate bonds, measured by the bid-ask spread, deteriorated faster than in previous episodes of financial stress, such as in the European sovereign debt crisis. Additionally, spreads on non-financial private debt have also already been more sensitive to and correlated with the price of shares compared to the 2008 financial crisis (Chart I.1.11). The high leverage can partially explain both of these aspects in non-financial corporations (Chart I.1.12).

Chart I.1.11 • Sensitivity of euro area NFC bond prices to equity prices | Percentages



Sources: Deutsche Bank, Bloomberg Finance LP and Moody's.

Chart I.1.12 • Non-financial corporations' total debt | Percentage of GDP



Sources: Banco de Portugal and Eurostat. | Note: Indebtedness includes loans, debt securities and trade credits on a consolidated basis.

The high indebtedness of non-financial corporations and the use of new financing instruments can be a source of instability for the global financial system

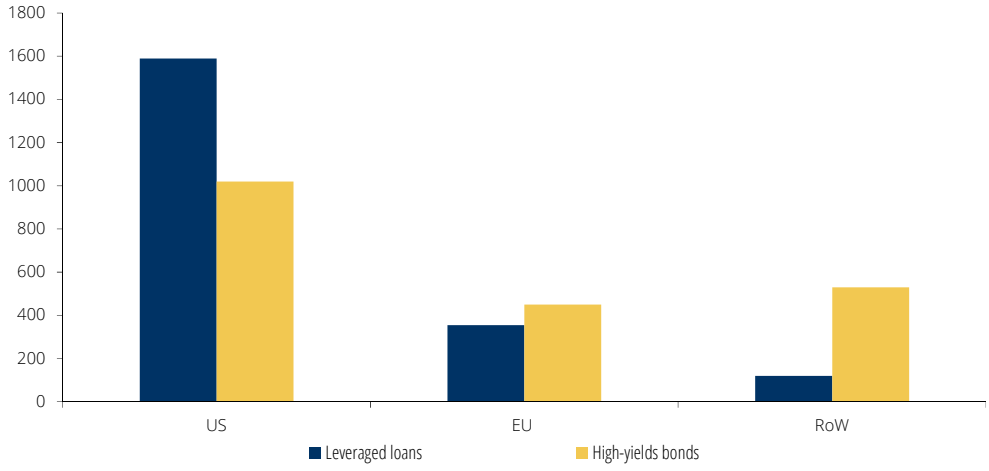
In a context of historically high indebtedness, a non-financial corporations' credit event at international level could trigger a global reassessment of risk premia. The prolonged low interest rate environment that started after the financial crisis and the search for higher yields have contributed to the development of new instruments, leading in turn to excessive credit growth in certain areas and risk profiles.

This trend is directly reflected in the growth of some instruments such as leveraged loans.[9] These are loans granted to already highly indebted firms or households with lower credit quality, with

9. For a broader discussion on the leveraged loans market, see e.g. *Financial Stability Review*, ECB, November 2018 (Chapter 2), *Sounding the Alarm on Leveraged Lending*, IMF Blog, 15 November 2018, and *Financial Stability Report*, Bank of England, November 2018.

limited access to the traditional sources of market funding (e.g. debt securities). These economic agents are more likely to default, and therefore also provide a higher yield to investors. Thus, in a context of a more intensive search-for-yield and very low interest rates, the investment in these instruments becomes particularly attractive. Furthermore, unlike high-yield bonds, these loans are indexed to the interbank interest rate, thus avoiding interest rate risk. Moreover, the securitisation of these loans, through collateralised loans obligations (CLOs), has been an important contribution and vehicle for this market's growth.[10]

Chart I.1.13 • Amount outstanding for European leveraged loans and high-yield bonds | EUR bn



Sources: ECB F*inancial Stability Review*, November 2018, Chart 2.3, based on Bloomberg, Refinitiv, Bank of America Merrill Lynch and Association for Financial Markets in Europe data. | Reference period: October 2018.

Compared to the US, exposure and issuance of these instruments in the European market are still relatively low (Chart I.1.13). However, in some countries (e.g. the United Kingdom) the issuance of covenant-lite leveraged loans[11] has increased significantly, reaching historical peaks and exceeding the levels observed before the 2008 financial crisis.[12] In the euro area, only investment funds in France hold a relevant share of this type of instruments, with 11% of their assets invested in this market. In any event, the increase in this market's global activity may contribute to the over-indebtedness of non-financial corporations, which, in a context of economic slowdown, increases the likelihood of a credit event materialising, with direct consequences for international risk premia and market liquidity. As a significant part of these loans are securitised and traded on the market, it is essential to monitor the trading channel and limit the exposure of financial agents to such instruments.

While this market is not a direct vulnerability for Portugal, the current macrofinancial environment and high uncertainty levels may result in greater global financial market volatility, with a direct impact on Portuguese economy's financing conditions, especially given the still high level of indebtedness. Where the reassessment of risk premia becomes persistent, market financing

10. For instance, see *Divergences widen in markets*, BIS, September 2018.
11. Covenant-lite' are loans with less restrictive protection clauses for creditors, which increases risk and significantly reduces the quality of the credit portfolio.
12. About 12% of the total volume of leveraged loans issued globally. For further details, see Bank of England's *Financial Stability Report*, November 2018.

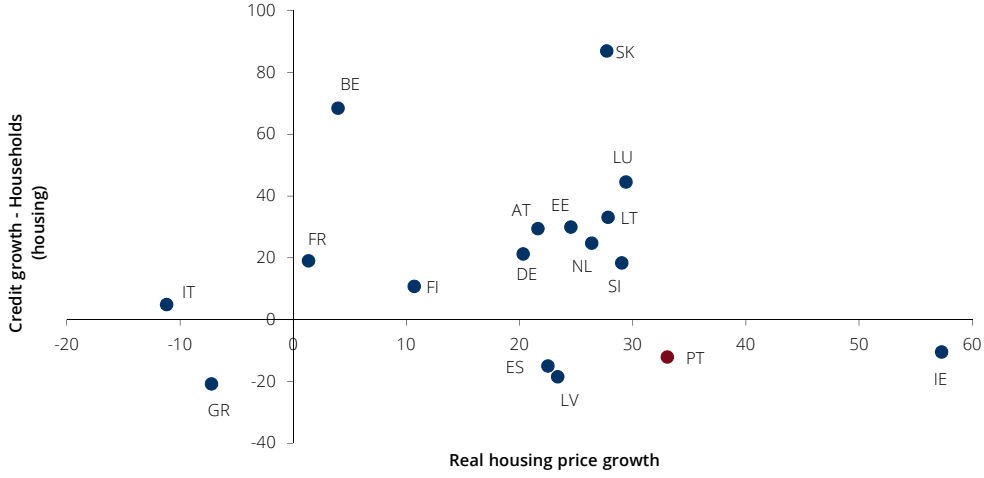
conditions tighten, even for domestic economic agents with longer debt maturities, more diversified sources of financing and more widely available liquidity.

The Portuguese real estate market remains particularly sensitive to non-residents' behaviour

In the last year, the Portuguese real estate market has remained highly buoyant, with a direct impact on the trading volume and price growth. This momentum has stemmed from economic growth, demand by non-residents, buoyant tourism, but also by the low interest rate and high liquidity environment, thus incentivising economic agents to search for higher yields. However, in the second half of 2018 growth in prices and transactions was relatively moderate, as well as in new housing loans, and there was an increase in the average time it takes to sell real estate (Section 2.3 Real estate market).

Many European countries have experienced momentum in residential real estate prices and, in some cases, credit for house purchase has grown (Chart I.1.14). In Portugal, however, the stock of housing loans decreased by approximately 12% in cumulative terms between 2013 and 2018, and the slowdown in economic activity, the deceleration in tourism and the increase in real estate supply are expected to contribute to moderate growth in real estate prices in 2019. Nevertheless, a more extended period with very low interest rates may create incentives to reverse this trend.

Chart I.1.14 • Cumulative changes in residential real estate prices and in loans for house purchase | Per cent



Sources: European Central Bank and Organization for Economic Co-operation and Development (OECD). | Notes: Cumulative changes between 2013 and 2018. Cyprus and Malta are excluded from the sample due to the lack of data. Cumulative changes of the stock of loans to households for house purchase. Residential real estate prices measured in real terms.

Portuguese banks continue to concentrate a significant share of their exposures on the real estate market – mainly through housing loans – despite the slight reduction observed since 2016 (Section 4.3. Concentration of exposures). The dynamics of the real estate market has had a positive impact on the Portuguese banking system. In recent years, the increase in demand by non-residents, particularly for commercial real estate, has enabled banks to reduce the number of real estate held in their portfolios and the stock of NPLs secured by real estate. Similarly, the increase in real estate prices has a direct effect on the loan-to-value ratio (LTV). In addition to this

effect on the stock of credit, this ratio is usually reduced by regular repayments. However, price dynamics may represent a risk to financial stability if it introduces procyclicality into credit growth, notably in a context of overvalued prices.

The current momentum in the real estate market can be interrupted by a set of factors, such as changes in the Portuguese regulatory framework on the real estate market, the materialisation of geopolitical stress events, increases in risk premia and slowdown in global economic activity, which may limit or reduce external demand for Portuguese goods and services. This reduction may be due, on the one hand, to the impact on the tourism sector and, on the other, to the change in the financing and confidence conditions of non-resident investors, which tend to adjust and disinvest at a faster pace. Altogether, the likelihood of these events could lead to a decline in demand for real estate and, consequently, a downward adjustment in prices.

In this context, Banco de Portugal's macroprudential Recommendation, which mitigates these risks by reducing the interaction between new credit agreements for households and real estate prices, becomes more relevant.[13] In the third quarter of 2018, most institutions participating in the October 2018 *Bank Lending Survey* reported that credit standards applied to loans have tightened, both in credit agreements relating to residential immovable property and consumer credit agreements, pointing to regulatory changes mostly related to the Recommendation.[14] This resulted in the tightening of the LTV ratio, stricter limits to amounts granted and to maturities. It is also important to ensure that the pricing of new loans matches the borrowers' credit risk, thus mitigating losses in the event of more adverse scenarios while simultaneously ensuring borrowers' ability to comply with debt servicing.

Banks' exposure to developing countries continues to be significant, particularly in a context of global economic slowdown and/or rising risk premia

Exposure to some developing economies, particularly dependent on commodity exports, remains significant for some Portuguese banks. However, there is significant heterogeneity in the investment profile of the Portuguese banks, with most of the financial institutions granting loans to the economy or investing in government bonds. In addition to this direct exposure, there is also indirect exposure, i.e. through loans and credit lines granted to Portuguese enterprises whose activity is dependent on these economies.

13. See Box 4 "Assessment of the macroprudential Recommendation within the legal framework of new credit relating to residential immovable property and consumer credit" in this Report.
14. https://www.bportugal.pt/sites/default/files/anexos/pdf-boletim/results_oct2018_en.pdf

Chart I.1.15 • Oil prices: Brent | Index: jan. 2008=100

Source: Refinitiv and Banco de Portugal calculations. | Latest observation: 20 May 2019.

Exposure to these countries is particularly sensitive to credit risk (sovereign rating and default) and market risk (exchange rate changes and commodity prices). Given the close link between the economic activity of these countries and commodity prices, episodes of market risk materialisation – in particular, a fall in oil prices (Chart I.1.15) – may result in a significant increase of credit risk in these countries and a deterioration in the market value of these positions. Likewise, these exposures show a substantially higher risk cost, with NPL ratios exceeding the values observed in the domestic market. As such, the performance of those economies and exposures should be closely monitored.

Digitalisation of the financial sector and cybercrime can be a source of systemic risk

Over the last few years, technological innovation in the financial sector has intensified significantly, with the introduction of new players, activities, services and processes. This technological transformation can generate significant gains, not only for the financial system, but also for the economy as a whole, and includes not only the digital innovation effort made by the incumbent financial institutions, but also the emergence of new partners and/or competitors, such as fintechs[15] and bigtechs.[16] Digital innovation in the financial sector is essential to the competitive process between institutions, with a potentially positive impact on the quality of the service provided.

However, this process may also be a source of systemic risk or exacerbate current risks,[17] and should be extensively monitored by national and international supervisory authorities.[18] The current wave of digital innovation is changing various aspects of the financial system, and can significantly change the relationship between market players and the way financial services are provided and

15. Fintech here refer to entities that develop and provide financial services based on innovative technologies.
16. *FinTech and market structure in financial services: Market developments and potential financial stability implications*, FSB, February 2019.
17. See Box 2 "Fintech – financial stability perspective", *Financial Stability Report*, December 2018.
18. *Report on the prudential risks and opportunities arising for institutions from FinTech*, EBA.

perceived by the non-financial sector. Against this background, it is essential to ensure confidence in the financial system and its robustness in order to preserve its stability, irrespective of the entities that ensure financial intermediation activities and economic activity funding.

After a period of significant challenges linked to the recent economic and financial crisis, the Portuguese banking system is overall in the process of digital transformation and adjustment to the new technological environment, either by investing in digital technology (in its various aspects, from the most operational, including data processing, to the most directly related to customers) or by establishing partnerships with new players, or even by internalising technological development. It is essential that this process is developed in a prudent manner, thereby safeguarding its inherent risks.

In this context, cybersecurity takes on a leading role, as a result of greater dependence on financial services providers in terms of systems, applications and networks, the introduction of innovative technologies and the rapid growth and dissemination of threats external to the systems. Cyber incidents have the potential to undermine the provision of financial services, either through direct financial (losses) or operational (availability) impacts, or via the inherent reputational impact.

Financial institutions in Portugal have intensified their efforts and investments in this area, as well as cooperation between them and the supervisor. Therefore, within the scope of its supervisory functions, Banco de Portugal established a working group and, together with the Portuguese Cybersecurity Centre (Centro Nacional de Cibersegurança – CNCS), set a regulatory and operational framework for monitoring cybersecurity events, with a mechanism for reporting incidents. The Single Supervisory Mechanism (SSM) has identified cybercrime and IT disruptions as one of the main risk factors in the banking sector.[19] Thus, in addition to the reporting of cyber incidents by significant institutions to the ECB, the supervisor will continue to assess the IT and cyber risks facing banks and will launch several on-site inspections on these types of risks in 2019.

From the competent authorities' point of view, it is also essential to continue to monitor and foster in-depth knowledge of the new market players. Among these, the entry into the market of technology companies known as 'bigtechs' is noteworthy: they use their platforms to provide financial services, generally starting with the area of payment services, but extending their activity to other types of financial products in other jurisdictions. Bigtechs offer financial products only as a part of their much more extensive activity, benefiting from their platforms and the massive amount of data generated.[20] With this new constantly and rapidly changing framework, it is essential to monitor the activity of these entities, also by assessing any systemic risks that they may pose and ensuring the adequacy of the internationally applicable regulatory and supervisory framework.

Climate change is a source of risk to financial stability

In order to promote the stability of the financial system, it is necessary to understand how climate change can be a potential source of risks. In particular, physical and transitional risks towards a low-carbon economy.[21]

The first source of risk is linked to physical risks, reflecting the occurrence and increasing intensity of natural phenomena likely to generate economic costs and affecting the financial system.

19. https://www.bankingsupervision.europa.eu/banking/priorities/html/ssm.supervisory_priorities2019.en.html
20. Frost, et al. (2019), "Big Tech and the changing structure of financial intermediation", *BIS Working Papers* No 779.
21. For further details, see Box 2, "Risks to financial stability resulting from climate change" in this Report.

Depending on their size and frequency, these events may have a more limited impact on specific areas or produce systemic effects on the economy. These events highlight the existence of potential risks to the sustainability of the financial system, such as high and unexpected costs from compensation payments or the exposure to certain assets that are more vulnerable to climate change. Therefore, this reinforces the need for the financial system to incorporate ESG (environmental, social and governance) factors into the decision-making, assessment and risk pricing processes.

The second source of risk is related to the transition process towards a sustainable economy. The transition risks largely reflect uncertainty as to how to adopt a sustainable low-carbon economy and, in particular, the speed of this transition ('soft' vs 'hard landing'). In this context, it is worth highlighting possible tax changes to carbon levies, the setting of CO2 emission limits and/or technological changes that allow a reduction of emissions. All these can bear significant consequences to society, particularly to the financial system, and they will be the greater, the faster the transition process evolves. It is therefore essential to ensure that the financial system is aware of potential regulatory/tax changes and that the transition process is carried out gradually in order to avoid disruptions and ensure a proper accommodation of the adjustment costs.

The materialisation of risk in recent cases of money laundering in Europe highlights the relevance of Banco de Portugal's initiatives in this area

Despite the strengthening of the current European regulatory framework with the transposition to the Portuguese legal system of the 4th Directive on the prevention of the use of the financial system for the purpose of money laundering or terrorist financing (AMLD) and the entry in force of the 5th AMLD in July 2018, the European Commission considers that the recent cases of money laundering associated with European banks show that there are still gaps in the European legislative framework on preventive supervision of Money Laundering/Terrorist Financing (ML/TF).

For the European Commission, such cases demonstrate the potential impacts on financial stability from weaknesses in the effectiveness of the preventive supervision of ML/TF. Moreover, and given that the institutional frameworks applicable to prudential and preventive supervision of ML/TF are different, the interaction (in particular in the area of cooperation and information sharing) between the prudential supervision and the preventive supervision of ML/TF is crucial – both internally (between domestic ML/TF prudential and preventive authorities) and across borders (between the authorities of different Member States and with third country authorities).

In line with the discussions taking place in various fora focused on the need to enhance the interaction between EU prudential and prevention frameworks of ML/TF, in December 2018 the Council of the European Union adopted conclusions on an action plan for enhanced monitoring of money laundering (Anti-Money Laundering Action Plan),[22] and the proposal for granting reinforced powers to the European Banking Authority (EBA) in the field of prevention of ML/TF has already been approved.

At the domestic level, an update of the ML/TF national risk assessment was initiated in 2018. This follows the assessment completed in June 2015 by the working group set up under Order

22. In this regard, see https://www.consilium.europa.eu/en/press/press-releases/2018/12/04/money-laundering-council-adopts-conclusions-on-an-action-plan-for-enhanced-monitoring/

No 9125/2013 of 1 July 2013, issued by the Minister of State and Finance, leading to the Anti-Money Laundering and Counter Terrorist Financing Coordination Committee, set up by Resolution of the Council of Ministers No 88/2015 of 6 October 2015, and which is responsible for the current update.[23]

In terms of Banco de Portugal's supervision on the prevention of ML/TF, the functional autonomy given to this area of supervision in 2011 has since resulted in the implementation of a risk-based approach, essentially on the basis of several on-site inspections and off-site analysis carried out on reports to institutions identified as of higher risk. The Financial Action Task Force (FATF), in its recent assessment of the Portuguese system for the prevention of ML/TF, issued a positive opinion on this approach.

In 2018, and in addition to the traditional off-site monitoring of the institutions supervised by Banco de Portugal, two cycles of thematic inspections were launched on restrictive measures and account opening through digital channels, which aimed primarily at facilitating the uptake of regulatory innovations in these areas. More generally, the entry into force of a new Notice and a new single reporting template for the prevention of ML/TF are expected to result in additional effectiveness gains for this supervisory activity.

There are still risks associated with the banking system's transition to the new regulatory framework and the current fragmentation of the European institutional architecture

The risks associated with (i) the banking system's transition to the new regulatory framework[24] and (ii) the current fragmentation of the European institutional architecture are of a different nature. While the first relates to issues of compliance with rules currently laid down in the European regulation, the second is fundamentally related to the fact that there is no robust European institutional framework at the banking sector level yet, in particular, due to an incomplete Banking Union.

As regards the first risk, one of the main challenges currently faced by the banking system at European level is the compliance with the minimum requirement for own funds and eligible claims able to absorb losses and contribute to the recapitalisation of the institution in case of resolution (MREL). Despite the latest issues of financial instruments eligible for this purpose, to meet the requirements a very significant number of European banks will have to continue to access the international financial markets in the coming years intensively. Portuguese banks will not be an exception, also because of the relevance that other forms of funding have been taking on their balance sheet (notably, deposits), and therefore market sentiment towards these institutions will continue to be significant. The materialisation of one of the risks detailed in this Report, with a negative impact on the access of the Portuguese banking sector to international financial markets, may hamper the Portuguese banks' ability to comply with the MREL requirements. This could lead banks to pursue other strategies allowing them to meet these requirements, notably based on deleveraging of their balance sheets, with a negative impact on credit supply and, consequently, on economic activity, and generating potential adverse effects from a feedback loop.

23. A summary of the findings resulting from the analysis developed by the working group is available at: http://www.portalbcft.pt/sites/default/files/anexos/sintese_da_avaliacao_nacional_de_riscos_de_bc-ft.pdf (in Portuguese only).

24. For further details, see the Special issue "Amendment of the resolution framework: what is new?", in this Report.

With regard to the second type of risk, and as already indicated in previous issues of the *Financial Stability Report*, the current fragmentation of the European institutional architecture also poses significant risks to financial stability – coupled with the fact that the decision-making centres on the banking sector's supervision and resolution matters have been transferred to the European level, although the costs arising from these decisions are still primarily borne by national 'safety nets'. Several elements are still lacking in order to reach a genuine Banking Union, in particular: (i) the European Deposit Insurance Scheme (EDIS), an integral part of the commonly called 'risk sharing' component, (ii) a robust crisis management framework that safeguards the continuation of the financing flow without disruptive effects, and (iii) a sustainable balance that promotes financial stability in the treatment of cross-border banking groups.

On the (in)completeness of the Banking Union, and since the last issue of the *Financial Stability Report*, particular attention should be given to: the final adoption of (i) the 'banking package', with the revision of the CRD IV,[25] CRR,[26] BRRD[27] and SRMR,[28,29] and (ii) the prudential backstop that introduces into the CRR minimum levels of provisioning for new non-performing loans. Both initiatives are important developments in the 'risk reduction' component.[30] The December 2018 Eurogroup report is also noteworthy, the elements of which have been approved during the Euro Summit held in the same month.[31] This report[32] is divided into three parts: (i) reform of the European Stability Mechanism (ESM), including the operationalisation of a common backstop for the Single Resolution Fund (SRF), (ii) Banking Union, and (iii) possible budgetary instruments for the euro area.

With regard to the operationalisation of a common backstop for the SRF,[33] terms of reference have been approved on several relevant points,[34] and the details of their implementation are still being discussed at a technical level. The possibility of the backstop being introduced before the end of the transition period, i.e. before 2024, is conditional on the progress achieved in reducing the risk of the banking systems of the euro area Member States, which will be assessed in 2020.[35] Uncertainty remains on how this assessment will be carried out, and there is a risk that it might be based on a mechanistic analysis of compliance with individual pre-established quantitative targets, namely at the level of NPLs and compliance with the MREL requirements (in fact, as the terms of reference anticipate). Also, doubts persist as to the governance structure on which the backstop will be based, including the decision-making capacity.

25. Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms.
26. Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms.
27. Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms.
28. Regulation (EU) No 806/2014 of the European Parliament and of the Council of 15 July 2014 establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Resolution Fund.
29. See the Special issue "Amendment of CRD IV-CRR: what is new?", *Financial Stability Report*, December 2018, and the Special issue "Amendment of the resolution framework: what is new?" in this Report.
30. In this regard, see http://europa.eu/rapid/press-release_IP-18-6659_en.htm.
31. https://www.consilium.europa.eu/en/meetings/euro-summit/2018/12/14/
32. https://www.consilium.europa.eu/en/press/press-releases/2018/12/04/eurogroup-report-to-leaders-on-emu-deepening/
33. The SRF is funded by contributions from the banking sector. In a situation where the SRF resources are not sufficient, the ESM can act as backstop and lend the necessary funds to the SRF.
34. https://www.consilium.europa.eu/media/37268/tor-backstop_041218_final_clean.pdf
35. Latest update available at https://www.consilium.europa.eu/media/37029/joint-risk-reduction-monitoring-report-to-eg_november-2018.pdf.

In regard the Banking Union and, in particular, the EDIS, the Eurogroup report states that the work on a roadmap for the political negotiations of this file has already started, but more technical work is needed. Thus, a high-level working group was set up, which is mandated to define the next steps in this roadmap. This working group is expected to present results in June 2019, containing not only the EDIS, but also other elements that constitute or may be associated with the completion of the Banking Union.

So far, there is no certainty about key elements of the Banking Union that are still lacking, including the third pillar, i.e. the EDIS. In this context of uncertainty and persistent risks to financial stability due to an incomplete European institutional architecture, it is essential to ensure that the Member States have access to the tools needed to promote financial stability at a national level.

Taking into account the elements that are currently part of the European institutional architecture in the banking sector, it is relevant:

(i) not to carry on the discussion around prudential exemptions for cross-border groups, notably on capital and liquidity, and MREL exemptions or substitution mechanisms. These initiatives have been presented as essential to promote the integration of the financial sector in Europe. However, they can only be considered in a context of a genuine and complete Banking Union, where the safeguarding of financial stability at each Member State and European level is clearly one of the key priorities of the European institutions;

(ii) to rethink the current possibility of banking groups to choose how to carry out their significant business in another Member State, i.e. either as a branch or a subsidiary, and to reflect on the dissemination across the Banking Union of the single-point-of-entry (SPE) resolution for cross-border banking groups vs the multiple-point-of-entry resolution (MPE). Such a reflection should have as a starting point the need to promote: (a) that the competent authority of a host country can react in a timely manner to strategic decisions affecting the subsidiaries and branches located therein, and (b) an appropriate level of separability – in case of an SPE model – from the subsidiary vis-à-vis the parent company, in order to address financial stability concerns both at a group level and as regards the systemic importance of each subsidiary in the various jurisdictions;

(iii) to assess the European resolution framework and, in particular, whether it has the appropriate flexibility to preserve financial stability at the national level, ensure continuity of financing of the economy and pursue the resolution purposes. It will be crucial here to assess the rebalancing between bail-in and the objective of financial stability, as well as to rethink the functions of the Deposit Guarantee Schemes in a resolution or liquidation situation;[36]

(iv) to assess the possibility of establishing a framework for administrative liquidation (or similar schemes for crisis management) of non-systemic banks at European level, but relevant at a national and local level, at risk or in insolvency, and whose resolution is not possible.

36. In this regard, see the IMF recommendations set out in the latest "Euro Area Policies: Financial Sector Assessment Program – Technical Note-Bank Resolution and Crisis Management" available at https://www.imf.org/en/Publications/CR/Issues/2018/07/19/Euro-Area-Policies-Financial-Sector-Assessment-Program-Technical-Note-Bank-Resolution-and-46106.

1.2 Macroprudential policy

The macroprudential authority has been endowed with a set of instruments whose implementation aims to mitigate relevant cyclical and structural systemic risks and to increase the capacity of the financial system to absorb adverse shocks. The assessment of structural systemic risk is based on the analysis of risk distribution among the different financial agents, whilst the assessment of cyclical systemic risk focuses on the accumulation of systemic risk over time.

With regard to the timely detection of the sources of cyclical systemic risk, Box 3 "A cyclical systemic risk indicator in Portugal" analyses developments in systemic risk in the Portuguese financial system using a composite indicator constituted by the following categories: (i) credit developments, (ii) potential overvaluation of property prices, (iii) external imbalances, and (iv) private sector debt service. The indicators considered in each category were selected based on their predictive capacity in terms of the accumulation of cyclical systemic risk prior to the occurrence of systemic banking crises.

Macroprudential instruments may either be included in the regulatory framework at European level[37] or their definition may depend on national authorities, considering their mandate and the instruments assigned to them, thus named non-harmonised instruments. Macroprudential policy measures can also be divided into capital measures, which modify the capital requirements associated with part or all of institutions' exposures, and borrower-based measures. Considering the regulatory framework in force at European level, capital instruments correspond to harmonised instruments, in contrast with borrower-based measures.

At any time, the authorities' choice of either type of measure or the possible combination of both types is limited by their availability, given the national legal framework. Considering this limitation, the choice may also depend on four vectors: (i) the phase of the financial cycle; (ii) the type of systemic risk; (iii) the existence of complementarities and synergies between instruments; and iv) the national specifics of each financial system.

Instruments that act upon lending conditions have a direct impact on borrower resilience, which is assessed based on the borrowers' income and/or the value of the collateral. Thus, the limits to credit granted that are based on income aim to limit the borrower's probability of default, whilst limits to credit granted that are based on the value of the collateral provided aim, essentially, to reduce loss given default (LGD). Given that these instruments generally act on flows of new lending, anchoring credit granting criteria at levels deemed suitable by the macroprudential authority, they are particularly suitable at the initial phase of the expansion of the financial cycle, when there are already signs that risks have begun to accumulate but the probability of materialisation of these risks remains low.

In turn, capital instruments include capital buffers, the increase of risk weights applied to certain exposures to calculate minimum capital requirements in accordance with the standardised approach or the restriction of the conditions in which those weights are applied, as well as, an increase in the minimum LGD percentage, to be applied by the institutions that use an internal ratings based approach. These measures have a direct impact on the resilience of the financial system by reinforcing the loss absorption capacity of credit institutions and altering the relative cost between certain asset classes. By focusing on the stock of credit exposures on institutions'

37. This regulatory framework is comprised of a single rulebook of harmonised prudential rules that is applicable to all the credit institutions and investment firms authorised to operate in the European Union.

balance sheets, these measures are particularly effective when risks have already accumulated, but have not yet materialised, which generally characterises the advanced stage of expansion of the business cycle.

The factors that motivate the choice and combination of macroprudential instruments, as well as the interaction between them, are discussed in detail in the Special issue "The macroprudential policy experience in the European Union: main challenges of the interaction between macroprudential instruments".

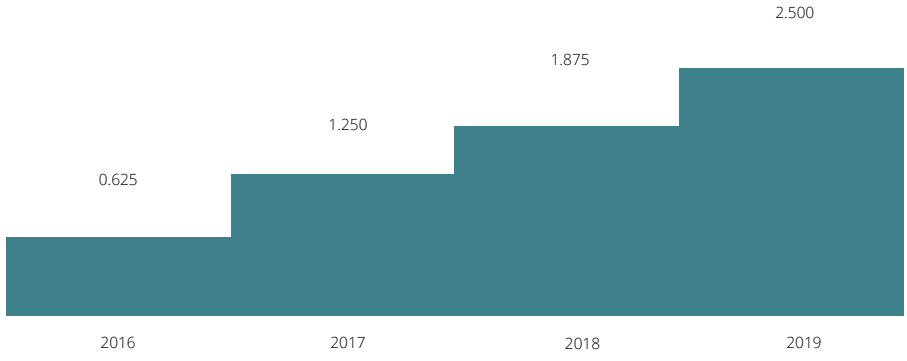
Within the scope of the non-harmonised instruments acting on lending conditions, Banco de Portugal, as the macroprudential authority, communicated in February 2018 its decision to implement a macroprudential measure in the form of a recommendation. This measure refers to new housing loans and consumer credit (hereinafter the Recommendation) and aims to ensure the adoption of prudent credit standards by the Portuguese financial system. The Recommendation entered into force on 1 July 2018.

The implementation of the Recommendation is preventive in nature and limits the accumulation of risk, in a context of economic recovery, a prolonged period of low interest rates and the sustained increase in real estate prices, as well as a background of high level of household indebtedness and low household saving rate. On the one hand it aims to ensure the resilience of the financial system, reinforcing its ability to absorb potential adverse shocks and, on the other, that households obtain sustainable financing, minimising the risk of default. Box 4 "Assessment of the macroprudential Recommendation within the legal framework of new credit relating to residential immovable property and consumer credit" presents a summary of the first analysis undertaken regarding the implementation of this measure.

Banco de Portugal maintained the calibration and phasing-in of the macroprudential capital requirements.

In terms of the macroprudential instruments that mitigate structural systemic risk, the phasing-in period for the capital conservation buffer ended in January 2019, and this buffer is now established at 2.5% of the total risk exposure (Chart I.1.16). Should the institution need to absorb an unexpected amount of losses, using the buffer in whole or in part, it must define a capital conservation plan enabling it to re-establish appropriate levels of capital. The referred plan must contain restrictions on payments of variable remunerations of equity and debt instruments and shall be subject to the approval of the microprudential supervisory authority.

Chart I.1.16 • Capital Conservation Buffer | As a percentage of risk exposure



Also within this scope, the phased implementation of the other systemically important institutions capital buffer (O-SII), established to progress linearly between 2018 and 2021[38], continued in January 2019, with the requirement reaching half of the final buffer for each institution (Table I.1.1). This buffer aims to mitigate the risk associated with excessive risk-taking by institutions considered to be systemic in each national financial system and is specific to each institution.

Table I.1.1 • Other systemically important institutions capital buffer | As a percentage of risk exposure

O-SII	O-SII Capital buffer as of 1 January 2018	O-SII Capital buffer as of 1 January 2019	O-SII Capital buffer as of 1 January 2020	O-SII Capital buffer as of 1 January 2021
Caixa Geral de Depósitos	0.250	0.500	0.750	1.000
Banco Comercial Português	0.188	0.375	0.563	0.750
Novo Banco	0.125	0.250	0.375	0.500
Santander Totta – SGPS	0.125	0.250	0.375	0.500
Banco BPI	0.125	0.250	0.375	0.500
Caixa Económica Montepio Geral	0.063	0.125	0.188	0.250

With regard to the equity instruments whose objective is to mitigate cyclical systemic risk, in the second quarter of 2019, Banco de Portugal decided to keep the percentage of the countercyclical capital buffer unchanged, at zero per cent of risk exposure. In effect, the benchmark quantitative indicator at international level for the calibration of this buffer, which is the deviation from its long-term trend of the ratio between loans to the private non-financial sector and GDP, remained negative. The majority of additional indicators considered by Banco de Portugal to inform the calibration of this buffer do not signal an accumulation of cyclical systemic risk, with the exception of the rate of change in house prices. However, the residential real estate market has recently begun to show signs of slackening (Section 2.3 Real estate market).

Within the scope of the regulatory framework for macroprudential policy at European level, a country may opt for voluntary reciprocity of a measure adopted by another authority provided it imposes an identical or equivalent measure on the institutions under its jurisdiction. Reciprocation includes the operations of banking groups' branches with a head office in the reciprocating country, as well as the operations that involve counterparties resident in the country that originally adopted the measure. The reciprocity of macroprudential measures reinforces their effectiveness and reduces the likelihood of regulatory arbitrage between institutions with head offices in different jurisdictions. With regard to the macroprudential capital buffers, currently only a countercyclical buffer rate up to 2.5% of the total risk exposure is of mandatory reciprocity.

38. In accordance with the Decision of Banco de Portugal of 30 November 2018, this buffer shall be met under the following terms: 25% of the buffer on 1 January 2018, 50% of the buffer on 1 January 2019, 75% on 1 January 2020 and 100% on 1 January 2021. Press release on Banco de Portugal's website: https://www.bportugal.pt/en/comunicado/press-release-banco-de-portugal-imposition-capital-buffers-credit-institutions-0.

Against this background, the European Systemic Risk Board (ESRB) issued a general recommendation,[39] according to which the relevant macroprudential authorities may require voluntary reciprocity of their own measures. This recommendation contains a principle regarding the materiality of exposures, above which the ESRB recommends reciprocity.

In December 2018, Banco de Portugal decided to reciprocate the decision taken by the Belgian macroprudential authority (National Bank of Belgium – NBB), consisting of the scaling up of the risk weight associated with loans secured by residential immovable property located in Belgium, which is based upon two components. The first component imposes a fixed add-on to the risk weight of 5 p.p.. The second component includes a proportional increase in the risk weight, equivalent to 33% of the exposure-weighted average of the risk weights on exposures secured by residential immovable property in Belgium.[40]

On 1 July 2018, the measure adopted by the French macroprudential authority (Haut Conseil de Stabilité Financière) entered into force. This measure reduces the upper limit of the consolidated exposure of French OSIIs to a group of significant NFCs depicting high leverage, in accordance with the criteria defined in the measure, and shall be applied exclusively to banking groups and NFCs with their head office in France. In accordance with the measure adopted, this exposure must now be lower than 5% of eligible capital, which compares with the previous restriction of 10%.[41] This decision was taken considering the warnings issued by certain international institutions, particularly the International Monetary Fund and ESRB, regarding the indebtedness levels of French NFCs and the systemic risk associated with an increase in leverage.

Considering the reduced materiality of exposures of the Portuguese O-SIIs to the French NFC sector, Banco de Portugal decided not to reciprocate the measure, although it will be monitored on an annual basis in compliance with the limit defined in Recommendation ESRB/2018/8.[42]

39. Recommendation ESRB No 2015/2.
40. For further details see the analysis document available on Banco de Portugal's website at: https://www.bportugal.pt/sites/default/files/analysis_4_nbb.pdf.
41. This limit, in force until July 2018, predates the previous regulatory framework for the European Union's macroprudential policy and as such the respective legal form differs from the measure now adopted.
42. For further details see the analysis document available on Banco de Portugal's website at: https://www.bportugal.pt/sites/default/files/analysis_5_hcsf.pdf.

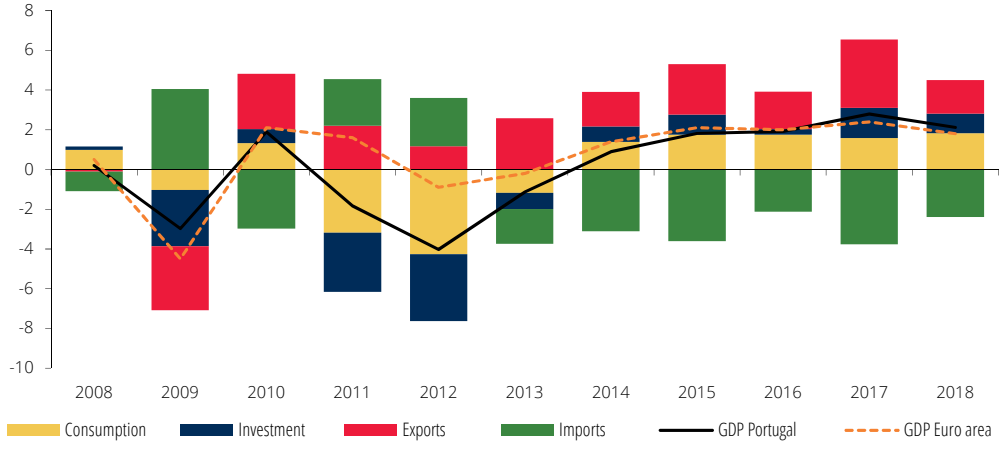
2 Macroeconomic and markets environment

2.1 Macroeconomic situation and short-term prospects

In 2018 the Portuguese economy continued to grow, but decelerated compared with 2017

In 2018 the Portuguese economy grew by 2.1% in real terms. This represents a slowdown compared with 2017 (when it grew by 2.8%). Underlying these developments was a deceleration in exports and investment (Chart I.2.1). In turn, private and public consumption accelerated slightly.[43] Developments in economic activity in Portugal remained in line with economic developments in the euro area, with the Portuguese economy growing slightly more than the euro area (1.8%) for the second year in a row. In terms of intra-annual profile, developments in GDP reflected a sharper slowdown in the second half of the year owing to developments in exports.

Chart I.2.1 • Developments in GDP and contributions from its components | Year on year rate of change, in percentage, and contributions, in percentage points



Sources: Statistics Portugal and calculations by Banco de Portugal.

At international level, economic growth slowed down in advanced and emerging market economies as a whole, but accelerated in the United States compared with 2017. World trade decelerated considerably, increasing by 3.8% in 2018 (compared with 5.4% in 2017). Monetary and financial conditions remained favourable, against the background of a continued low interest rate environment. The economic slowdown in the euro area reflected the deceleration in exports, in line with the decline in global economic growth and increased uncertainty surrounding trade policies.

43. National Accounts data for 2018 are preliminary.

Economic developments in Portugal reflected the slowdown in corporate investment and exports despite a slight acceleration in private consumption

In 2018 private consumption grew by 2.5%, after increasing by 2.3% in 2017. Developments in private consumption reflected an acceleration in the consumption of current goods and services and a slowdown in durable goods in both components (automotive and non-automotive). Continuing favourable financing conditions have led to an increase in the share of non-food consumption expenditure financed by credit. However, quarterly flows of new loans for consumption have decelerated in more recent quarters, in line with a slowdown in the consumption of durable goods. Private consumption continued to grow at a slightly faster pace than disposable income, which resulted in the savings rate remaining at record low levels (4.6%).

Investment increased by 5.6% in 2018, decelerating from 2017 (9.2%). These developments reflected a slowdown across components, more pronounced in GFCF in machinery and equipment and GFCF in construction excluding housing. GFCF in housing has been growing by around 6% compared with 2017. In line with a buoyant residential real estate market, GFCF in housing has been recording positive rates of change since 2015.[44]

Although GFCF (as a percentage of GDP) has increased gradually since 2013, the level reached in 2018 (17.1% of GDP) remained clearly below that observed before the economic and financial crisis (above 20% of GDP). The recovery in GFCF has been more pronounced in the sector of non-financial corporations than in the general government and household sectors.

Economic growth was broadly based across economic sectors, which contributed positively to growth in GVA of the economy. However, in a number of sectors, growth was below the levels seen in 2017, with the strongest deceleration being observed in manufacturing, construction, transportation and storage and services provided to firms.[45]

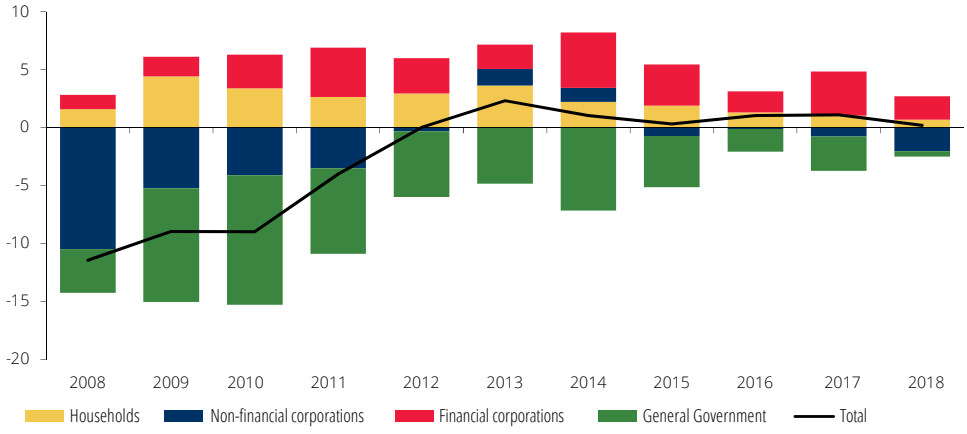
Labour market conditions in Portugal continued to improve in 2018. According to Statistics Portugal's Labour Force Survey, employment grew by 2.3%, while the unemployment rate declined by 1.9 p.p. to 7%, on average, below euro area levels (8.2%). The decline in long-term unemployment and, to a lesser extent, youth unemployment contributed to the drop in the unemployment rate. Improved labour market conditions also led to a wage increase. In 2018 average wages in the economy grew by 2.2%, above the 1.6% increase in 2017. In turn, the rate of inflation[46] declined to 1.2% (-0.4 p.p., compared with 2017), reflecting the lower change in the prices of the main aggregates, with the exception of energy. Wage growth, together with negative developments in productivity, was reflected in an increase in unit labour costs and put additional pressure on prices. This pressure has been partly accommodated by a narrowing of margins.[47]

The Portuguese economy has been recording a net lending position since 2013 (Chart I.2.2). In 2018 this net lending position declined to 0.2% of GDP, after 1.1% in 2017, reflecting growth in investment above domestic savings. The goods and service account deteriorated, despite the positive contribution made by the travel and tourism sector, which has gradually increased

44. For more details on developments in the residential real estate market, see section 2.3 Real estate market.
45. An analysis of economic activity by sector should be interpreted with caution, as it is based on preliminary or provisional National Accounts which are subject to revision.
46. Measured by the Harmonised Index of Consumer Prices (HICP).
47. See Banco de Portugal, *Economic Bulletin*, May 2019, for a more detailed analysis of the Portuguese economy in 2018.

in importance in economic activity in Portugal. In addition, the primary income account deficit worsened, with the payment of dividends abroad increasing. After reaching a record low in 2014, the international investment position of the Portuguese economy has improved gradually, standing at –100.8% of GDP in 2018 (4.1 p.p. above the level observed in 2017). Positive developments in the international investment position mostly reflected growth in GDP.[48]

Chart I.2.2 • Net lending/net borrowing of the economy by institutional sector | Percentage of GDP



Source: Statistics Portugal.

Economic growth is projected to continue to slow down in Portugal and in advanced and emerging market economies

In the first quarter of 2019, economic activity grew by 1.8% year on year (after 1.7% in the previous quarter and 2.1% in annual average terms in 2018). These developments mostly reflected a sharp acceleration in investment. The coincident indicator for private consumption remained on the downward path that began at the end of 2017. In turn, the coincident indicator for economic activity reversed its downward trend and started to recover at the end of 2018.[49] The unemployment rate fell to 6.4% in March,[50] while inflation was below the average observed in 2018.

The Portuguese economy is expected to continue to grow in the 2019-21 horizon, at a higher pace than projected for the euro area, although decelerating compared with the past few years, moving closer to potential growth (Table I.2.1).[51] Economic developments are expected to be supported by a sustained increase in exports and investment, in parallel with moderate private consumption growth. The economy is projected to maintain its net lending position, employment is expected to continue to grow and the unemployment rate to decline, both at a moderate pace. In turn, the household savings rate is expected to remain at low levels.

Compared with the December projections,[52] economic growth was revised downwards for 2019 and remained virtually unchanged over the remaining projection horizon. However, despite

48. For more details, see Statistical Press Release on the international investment position for December 2018, available on Banco de Portugal's website at https://www.bportugal.pt/en/comunicado/statistical-press-release-international-investment-position-december-2018.
49. Coincident indicators are composite indicators that capture underlying developments in year on year changes in the respective macroeconomic aggregate.
50. Corresponds to the provisional estimate released by Statistics Portugal at the end of April.
51. Banco de Portugal, *Economic Bulletin*, March 2019.
52. Banco de Portugal, *Economic Bulletin*, December 2018.

prospects of a positive scenario, the slowdown in the economy may be higher than expected, given that the projection exercise is based on a set of assumptions for the evolution of the external framework variables which might not materialise as expected.[53] Indeed, the following downside risks to activity are anticipated: (i) an intensification of protectionist policies, (ii) worsening geopolitical tensions, (iii) a sharper deceleration in the Chinese economy, (iv) an increase in financial market turmoil, (v) an upsurge in tensions in euro area sovereign debt markets, (vi) a potential loss of momentum in the euro area economy, and (vii) increased uncertainty worldwide, in particular owing to the United Kingdom's withdrawal from the European Union. Balanced risks related to inflation are also projected.

At international level, growth in activity was higher than expected in the United States in the first quarter of 2019. Likewise, euro area growth was more positive than projected, influenced by favourable developments in major economies. However, economic growth is expected to slow down in advanced and emerging market economies.[54] For 2020, growth is projected to be more differentiated across advanced economies, with the euro area recovering and the United States expected to remain on a downward path. In turn, emerging market economies as a whole are expected to grow at a higher pace than in 2018. Nevertheless, these projections represent a downward revision from the projections released in October and December 2018,[55] reflecting a deceleration in economic activity in the second half of 2018. Although the outlook for economic growth remains favourable, risks are expected to remain on the downside, associated with heightened trade tensions and increased political uncertainty.

Table I.2.1 • GDP growth | Annual rate of change, in percentage

					Revisions**	
	2018	2019[P]	2020[P]	2021[P]	2019[P]	2020[P]
Portugal	2,1	1,7	1,7	1,6	-0,1	0,0
World economy	3,6	3,3	3,6	-	-0,4	-0,1
Advanced economies	2,2	1,8	1,7	-	-0,3	0,0
USA	2,9	2,3	1,9	-	-0,2	0,1
Euro area	1,8	1,1	1,6	1,5	-0,6	-0,1
Germany	1,5	0,8	1,4	-	-1,1	-0,2
France	1,5	1,3	1,4	-	-0,3	-0,2
Italy	0,9	0,1	0,9	-	-0,9	0,0
Spain	2,5	2,1	1,9	-	-0,1	0,0
United Kingdom	1,4	1,2	1,4	-	-0,3	-0,1
Emerging market and developing economies	4,5	4,4	4,8	-	-0,3	-0,1
China	6,6	6,3	6,1	-	0,1	-0,1
Brazil	1,1	2,1	2,5	-	-0,3	0,2
Russia	2,3	1,6	1,7	-	-0,2	-0,1

Sources: Banco de Portugal, ECB and IMF. | Notes: p - projected. The projections for the Portuguese economy refer to the March 2019 update. For more detail, see Banco de Portugal, *Economic Bulletin*, March 2019. The projections for the euro area as a whole are those published by the ECB in the *ECB staff macroeconomic projections for the euro area*, March 2019, and for the remainder geographies are those published by the IMF in the *World Economic Outlook*, April 2019. **Revisions compared to that presented in the *Economic Bulletin* (for Portugal), in the *Eurosystem staff macroeconomic projections for the euro area* (for the euro area as a whole), both from December 2018, and in the *World Economic Outlook*, IMF, October 2018 (for the remainder geographies).

53. For an analysis of the gap between the actual and the projected growth rate in 2018, see Box 3 "An assessment of projections for 2018" in the March 2019 issue of the *Economic Bulletin*.

54. International Monetary Fund, *World Economic Outlook*, April 2019.

55. International Monetary Fund, *World Economic Outlook*, October 2018 and European Central Bank, *Eurosystem staff macroeconomic projections for the euro area*, December 2018.

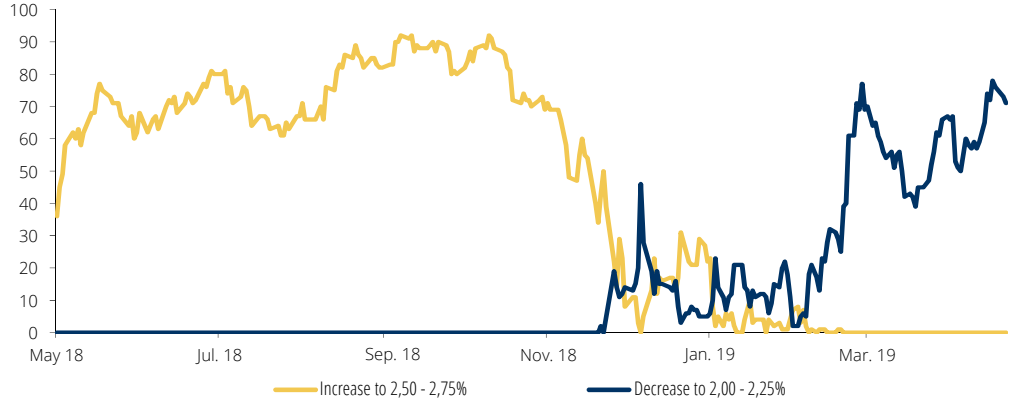
2.2 Financial markets

The end of 2018 was marked by a rise in risk aversion, due to the downward revision of the outlook for global economic growth, tensions in US-China trade relations and political instability in some European countries. In the first few months of 2019 and up to April volatility levels declined, in parallel with an appreciation of stocks and a narrowing of risk premia. The slowdown in economic activity in the major world economies in early 2019 and the decelerating prices justified investors' expectations of a more gradual normalisation of monetary policy, with increased risk taking in the different financial markets. In the euro area in particular, despite the uncertainty associated with some political events occurring in 2019 (Brexit, Spanish parliamentary elections, elections to the European Parliament) and the economic environment in Italy, the announcement by the European Central Bank (ECB) of a new series of targeted longer-term refinancing operations (TLTROs) and its commitment of maintaining the key ECB interest rates at the current level at least until the end of 2019, boosted a decline in most risk premia and stock market gains. However, in early May the broadly based appreciation trend across the different financial markets was reversed, chiefly accounted for by the re-emerging commercial tensions between China and the US.

Monetary conditions have remained broadly accommodative at international level, and this will continue into 2019

The slowdown in private consumption in the US at the end of 2018 led to investors' expectations of lower economic growth and consequently a more gradual path of normalisation of the US monetary policy than previously anticipated. This adds to the environment of uncertainty regarding the partial government shutdown and tensions in US-China trade relations, in parallel with the lower economic impact expected in 2019 due to the tax reform package started in the previous year. In 2018 Fed Funds increased by 25 b.p. four times (in March, June, September and December), with a target range of 2.25%-2.5% at the end of the year. Following considerable GDP growth in 2018 (by 2.9%), market expectations for the Fed Funds target range in 2019 changed substantially, especially due to concerns related to the economy not sustaining the current level of growth. In addition, the PCE (Personal Consumption Expenditure) price index grew by 1.4% year on year in the first quarter of 2019. Finally, the disclosure of the minutes of the FOMC meeting in March changed the prospect of rate rises up to the end of the year to no changes up to the end of the year. (Chart I.2.3).

Chart I.2.3 • Probability of change in interest rates by the North American Federal Reserve until December 2019 | Per cent



Source: Bloomberg (calculations by Banco de Portugal). | Notes: The probabilities are implied on market instruments from data calculated by Bloomberg and at closing prices. Last observation: 20 May 2019.

Two years after the voting on the United Kingdom's withdrawal from the European Union (EU), there is still uncertainty as to the timing for Brexit and especially its terms. After months of negotiation, the United Kingdom and the other EU members have established a binding agreement governing the terms for withdrawal, which involved financial compensation by the United Kingdom to the EU of around GBP 39 billion. However, this agreement has been successively rejected by the British Parliament. After the date stipulated for Brexit (29 March 2019), the European Council allowed an extension (up to 31 October 2019) for the ratification of the agreement for withdrawal, which however cannot jeopardise the general terms of the agreement. The financial markets' reaction to the announcement of the extension of the deadline for Brexit was positive, in spite of the persisting uncertainty as to the timing for the United Kingdom's withdrawal from the EU and its terms. In this context, the Bank of England has not changed its monetary policy since August 2018, and mentioned in its meeting in May this year that, although inflation is close to the 2% target, there are other factors mitigating excessive price growth. In particular, it mentioned that some indicators of domestically generated inflation remain contained.

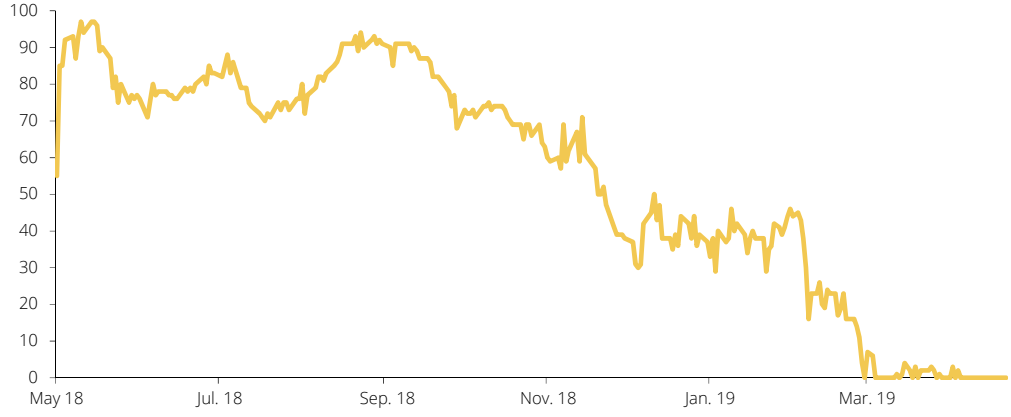
Following a reduction in monthly purchases under the asset purchase programme (APP) in October 2018, in December the ECB confirmed the end of the asset programme in late 2018. However, it has continued to express its intention of maintaining the reinvestment of redemptions of principal payments from maturing securities purchased under the APP for as long as needed to maintain favourable liquidity conditions. The reinvestments should be made in accordance with the NCB's share in the ECB's capital key. Hence, for countries which hold government debt securities lower than its capital key, this might represent net purchases of government debt securities, although any adjustments across jurisdictions are expected to be gradual.[56] In March 2019, the ECB announced a new series of targeted longer-term refinancing operations (TLTRO-III), with a view to ensuring a progressive normalisation of monetary policy in the euro area. The new series of seven longer-term refinancing operations with a two-year maturity will be active from September 2019 to March 2021. The TLTRO III will mainly help banks in their liquidity management, minimising refinancing risks, given that operations conducted under the previous programme (TLTRO II) will have their first major redemption in the mid-2020. Although not all details of the new TLTRO have been disclosed, it has been announced that, similarity to the previous series (TLTRO II), there will be incentives for credit conditions to remain favourable, and banks may request financing up to 30% of eligible loans on a reference date at a rate indexed to the interest rate on the main refinancing operations over the life of each operation. These monetary policy decisions were taken in an environment where euro area inflation remains below the ECB's price stability objective and where expectations for its evolution have been revised downwards. According to the ECB's March 2019 projection exercise, only in 2021 will the inflation measures partly approach the level desired by the ECB. The ECB's estimates have been revised downwards successively, reflecting 1.6% price growth for the harmonized index of consumer prices in 2021. Likewise, market participants' expectations for medium-term inflation levels for the euro area, inferred from 5y5y inflation swaps (Chart I.2.4), have been declining and moving closer to the level reached in 2016, showing that financial market participants do not expect a normalisation of monetary policy in the short term (Chart I.2.5).

56. See *Relatório de Implementação de Política Monetária* – 2018, Banco de Portugal.

Chart I.2.4 • Inflation expectations in the euro area | Per cent

Source: Bloomberg. | Notes: Inflation expectations implicit in the 5y5y inflation swaps in the euro area. Closing market quotes. Last observation: 20 May 2019.

Chart I.2.5 • Probability of at least 10 bp increase in the deposit facility rate of the European Central Bank until December 2019 | Per cent



Source: Bloomberg (Calculations of Banco de Portugal). | Notes: The probabilities are implied on market instruments from data calculated by Bloomberg and at closing prices. Last observation: 20 May 2019.

The downward path of sovereign debt yields in the euro area continued in the first months of 2019

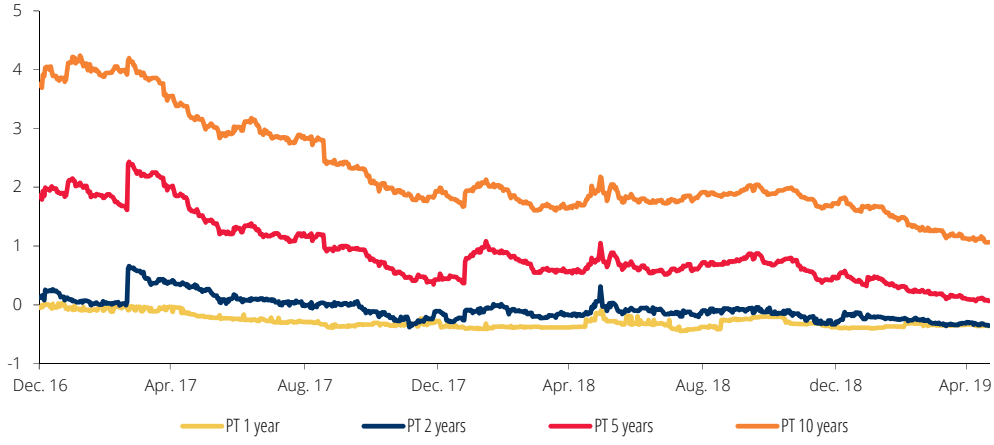
In spite of an increase in volatility and risk aversion at the end of 2018, leading to a general reassessment of risk premia in the euro area, in early 2019 the widening of spreads was reversed. 10-year government debt yields showed a downward trend in most euro area countries. Italy was the only country that initially showed an increase, reflecting the Italian economy's entry into technical recession, with a fall in economic activity in the last two quarters of 2018, and a certain expectation of investors of a possible reduction of the Italian government debt rating. In Spain the yield differential vis-à-vis German government debt yields continued to narrow, despite the surprise regarding the announcement of the general election on 28 April.

The decline in yields intensified, especially after the ECB's announcements regarding the main refinancing operations rate remaining unchanged at least until the end of 2019 and the new TLTRO

programme. The countries with the highest yield differential vis-à-vis Germany reaped the most benefits, in particular Italy, Spain and Portugal, but also Greece, which returned to the primary market with a five-year and a 10-year issue in January and March 2019 respectively. These issues were the first after the completion of its third adjustment programme in August 2018. In both issues demand was much higher than supply (€2.5 billion in each issue), reaching a bid to cover ratio[57] above four. Following this return to the market, over the course of 2019 some rating agencies revised the Greek government debt rating upwards. The German 10-year government debt yield became negative at the end of March 2019 for the first time since 2016, remaining around 0% since then.

After being relatively stable over the course of 2018, Portuguese government debt yields have been following a downward trend since the end of the year, amid expectations of maintenance of low official interest rates, but especially associated with the investors' perception of improved economic and financial conditions in Portugal (Chart I.2.6). In parallel, at the end of last year, the investment grade status assigned by three main financial rating agencies (DBRS, Moody's and S&P) was recovered, and this played an important role in reasserting this rebound. In March this year, S&P upgraded the Portuguese Republic rating by another level, to BBB, notably stressing the expectation that the maintenance of a primary surplus in the next few years would enable the continued downward trend of government debt in relation to GDP and the reduction of the average cost of government debt to 2.8%, which was possible especially after the early repayment of the remainder of the debt to the IMF in December 2018. In turn, DBRS revised the outlook for the Portuguese sovereign debt from stable to positive, keeping the rating at BBB. Given the positive environment in early 2019, the Portuguese Treasury and Debt Management Agency (IGCP) issued 10-year Portuguese government debt, demand for this new issue was strong. Also taking advantage of the reduction in secondary market debt yields, the IGCP conducted several auctions for the 2026, 2029, 2034 and 2037 maturities. The auction cost for the benchmark bond for the 10 year issue (OT 1.95% 15 Jun. 2029) reached a historical minimum in May, with an allotment yield of 1.059%. In addition, the IGCP continued to promote exchanges offers, so as to smooth the maturity profile in the coming years.

Chart I.2.6 • Portuguese government debt yields | Per cent



Source: Refinitiv. | Notes: The series shown represent the closing bid yield of the Portuguese government debt with maturity of approximately 1, 2, 5 and 10 years, respectively, in each moment in time. Last observation: 20 May 2019.

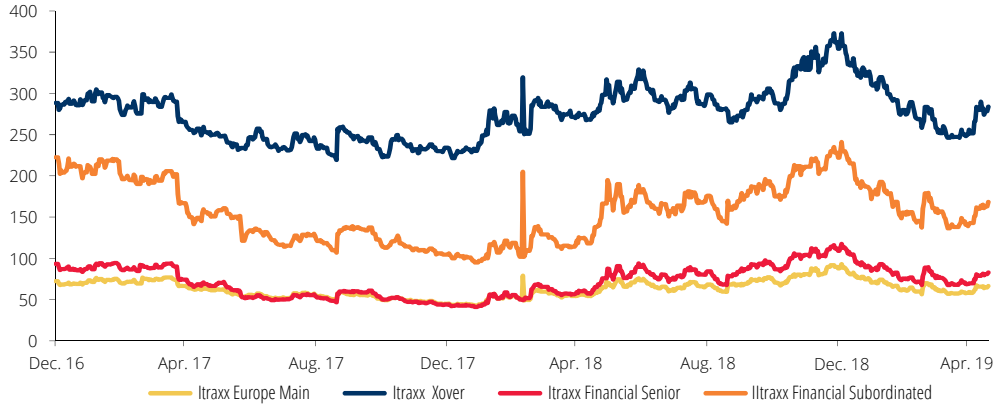
57. The bid to cover ratio is an indicator of the demand for securities, calculated as the value of demand received on the security's issued value.

The reversal of risk aversion in early 2019 favoured debt issuance by some Portuguese banks

With regard to debt securities of companies in the euro area, there was a significant widening of credit spreads in the last quarter of 2018, accompanied by a rise in volatility (Chart I.2.7). In this context, issues by companies with their head office in the euro area declined in 2018 compared with the two previous years, both in the investment grade debt segment and in the high yield debt segment. The high yield segment was the most affected by the widening of spreads due to concerns surrounding the growing debt level of companies in this segment and the consequent pass-through to the debt servicing capacity in a scenario of worldwide economic slowdown.

In the first quarter of 2019 the main European credit default swap (CDS) indices[58] saw a broadly based decline in spreads, in a context of a more accommodative monetary policy than anticipated and lower tensions in US-China trade relations. In late March, expectations regarding Brexit and the possibility of no agreement for withdrawal in the short run penalised spreads in all CDS segments on debt securities. However, this trend was reversed. Given the upsurge of trade tensions between China and the US in early May, there was an overall risk-aversion trend, reflected in an increase in European CDS index levels.

Chart I.2.7 • Credit Default Swaps Indices | Basis points



Source: Refinitiv. | Notes: The chart shows the closing mid spread. Last observation: 20 May 2019.

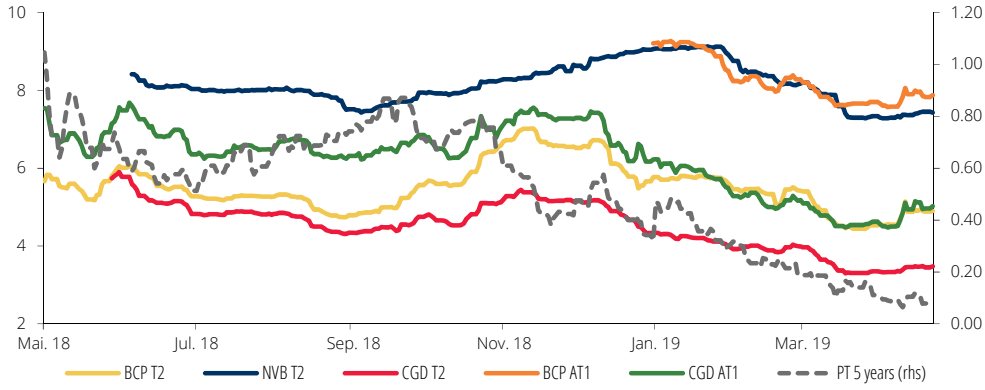
Given recent amendments to the European framework in terms of insolvency hierarchy,[59] demand for non-preferred senior debt in the euro area in 2018 was high, partly accounted for by the positive performance of these securities in the bank debt market. The Additional Tier 1 debt market (AT1) was the most penalised, both in terms of supply of securities issued but also in terms of market valuation, especially in the last quarter of the year, characterised by overall risk aversion. In the first few months of 2019, in line with the other financial market segments, yields in the European bank debt market followed a downward trend. In Portugal, amid low interest rates and anticipating the need to diversify their financing sources to comply with requirements such as the MREL, banks continued to issue debt securities (Chart I.2.8). In January 2019 BCP issued €400 million of an AT1 bond with a net initial yield of 9.25%. In March Montepio issued

58. Itraxx indices represent credit risk in Europe, with the Itraxx Europe Main representing credit risk in the investment grade segment and the Itraxx Xover representing credit risk in the high yield segment.

59. Directive (EU) 2017/2399 of the European Parliament and of the Council of 12 December 2017.

€100 million of 10-year subordinated debt (Tier 2 (T2)) with a net initial yield of 10.5%. Overall, there were positive rating revisions associated with Portuguese banks and their respective issues.

Chart I.2.8 • Yields of Portuguese issues | Per cent



Sources: Bloomberg and Refinitiv. | Notes: PT 5 years represents the closing bid yield of the government bond that, in that moment in time, was representative of the yield of the government debt bond with 5 year maturity. The Tier 2 (T2) and Additional Tier 1 (AT1) yields shown in the chart consider the call date and closing ask. Last observation: 20 May 2019.

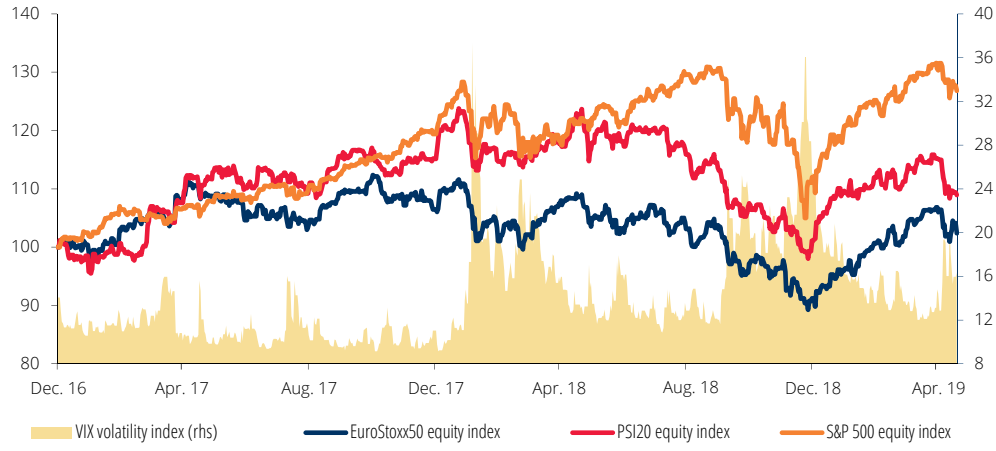
The expectation of a more gradual normalisation of monetary policy has contributed to valuation growth in the main stock markets in the first months of 2019, although they were penalised by renewed trade tensions

In 2018 expectations of interest rate rises and fluctuations in risk aversion caused weaker performance in stock market indices worldwide vis-à-vis 2017. In the last quarter of the year, in spite of a decline in expectations of interest rate rises, tensions in US-China trade relations and concerns about a worldwide economic slowdown and a partial shutdown in US government services caused a further increase in stock market volatility. In the US, employment data and strong economic growth led the S&P 500 to perform better than its European peers, although it ended 2018 with a fall of about 6% (the EuroStoxx 50 dropped by around 14%). The performance of stock market indices in the euro area was marked by political instability in Italy, Brexit and the slowdown in economic activity. The Portuguese index followed the dynamics of the main European stock exchanges and fell by about 12% (Chart I.2.9). BPI was delisted from the stock exchange at the end of last year, following the public offer of Caixabank, which thus held the bank's whole equity capital. Only three securities now form the PSI Financeiro (BCP, Flexdeal [60]and Sonae Capital), BCP being the only listed Portuguese bank. In the first quarter of 2019 the downward trend of most stock market indices was reversed, amid lower US-China tensions and expectations of a more gradual normalisation of monetary policy by the FED and the ECB. These developments seem to have mitigated financial markets' response to the downward revisions of the outlook for global economic growth. In the first quarter of the year stock markets recorded significant gains, with an appreciation of the S&P 500 index and the Eurostoxx 50 by around 13% and around 12% respectively. Volatility measured by the VIX index followed a downward trend from end-2018 to April this year. However, there were a few volatility spikes in March, notwithstanding the ECB's

60. Flexdeal is a securities investment company for promoting the economy (*Sociedade de Investimento Mobiliário para o Fomento da Economia* – SIMFE in Portuguese) listed on the Euronext stock exchange as of 24 December 2018, with a stock market capitalisation close to €16 million.

announcement of the TLTRO III and the postponement of Brexit. Since the end of April there has been a reversal in market sentiment, possibly due to the renewed trade tensions between China and the US. Following an appreciation of about 17% of both the S&P 500 and EuroStoxx 50 since the end of 2018, in May the return to a higher volatility level affected stock markets. In line with the major global stock market indices, the valuation of the Portuguese stock index PSI-20 fell sharply.

Chart I.2.9 • Stock markets indices and volatility



Source: Refinitiv. | Notes: The chart shows the evolution of the stock market indices with the base value set at 100 at 31 December of 2016. For the VIX volatility index quotes are shown. Closing market quotes. Last observation: 20 May 2019.

2.3 Real estate market

In 2018, the residential real estate market in Portugal remained buoyant, leading to growth in prices and volume of transactions. However, some moderation was observed from the second half of 2018 onwards, with prices, transactions and new loans for house purchase recording smaller growth. Notwithstanding, there is still evidence of some overvaluation of house prices at the aggregate level. Overall, the recent dynamism of the residential real estate market has benefited from economic growth and the maintenance of the low interest rate environment, having also reflected demand by non-residents.

The commercial real estate market in Portugal also benefited from this favourable environment. In 2018, there was an increase in the growth rate of commercial real estate prices, which remained, nonetheless, below that of the residential segment. In turn, the strong increase in transactions continued to reflect investment by non-residents.

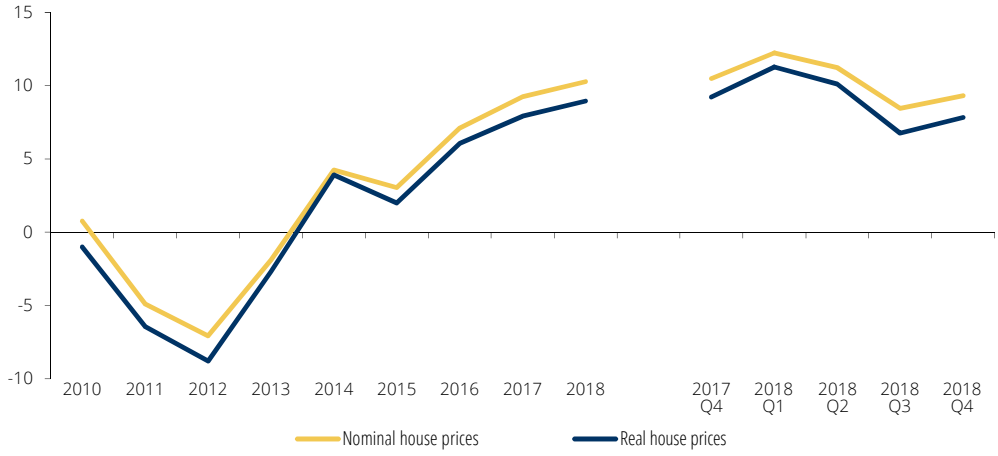
2.3.1 Residential real estate market

Prices and transactions in residential real estate decelerated in the second half of 2018

House prices continued to grow in 2018, with an average rate of change of 10.3%, compared to 9.2% in 2017 (Chart I.2.10). However, prices decelerated in the second half of the year. In the fourth quarter of 2018 prices grew by 9.3% year on year, compared to 12.2% in the first quarter

of the year. Between 2013 and 2018 prices rose by 39% in nominal terms and by 32% in real terms, after a fall of 13% in nominal terms and 17% in real terms between 2010 and 2013.

Chart I.2.10 • Rate of change of house prices in nominal and real terms | Per cent

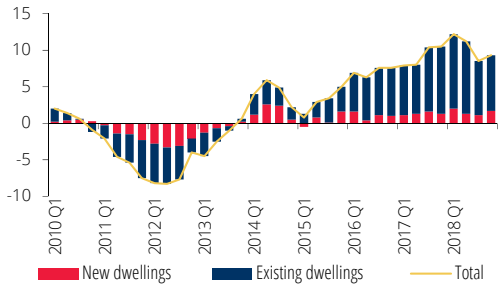


Source: Statistics Portugal and Banco de Portugal calculations. | Notes: The real house price index was calculated using the private consumption deflator. The rate of change associated with annual data corresponds to the annual average rate of change and that associated with quarterly data corresponds to the year on year growth rate.

Prices and transactions of existing dwellings have been responsible for most of the dynamics observed in the residential real estate market since the beginning of 2015 (Chart I.2.11). Their prices grew by 11.0% on average in 2018, a higher rate of change than that of new dwellings, which increased by 7.5% in the same period. In quarterly terms, the prices of existing dwellings have decelerated, increasing by 9.5% in the last quarter of 2018, 2.3 p.p. lower than in the same quarter of 2017, while prices of new dwellings grew by 8.5%, a 2.5 p.p. increase over the same period. The number and value of transactions of existing dwellings was also higher, having represented 81% of the total value of transactions and 85% of their number[61] in 2018. The predominant contribution of transactions of existing dwellings to the recent buoyancy of the residential real estate market may be reflecting excess demand vis-à-vis supply in aggregate terms, which, given the limited capacity to adjust the supply of new dwellings in the short term, puts additional pressure on the prices of existing dwellings. Despite their high share in total transactions, the average value of transactions of existing dwellings is significantly lower than that of new dwellings (Chart I.2.12). In aggregate terms, the average transaction value has shown a growth trend over the last two years for both existing and new dwellings.

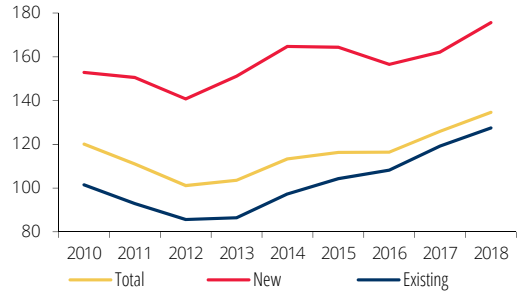
61. However, it should be noted that in the case of existing dwellings, the same dwelling may be subject to more than one transaction in one year, whereas new dwellings can only be considered so in the first transaction.

Chart I.2.11 • Contributions to the year on year rate of change of house prices | Per cent and percentage points



Source: Statistics Portugal.

Chart I.2.12 • Average transaction value of household dwellings | In thousands of euros

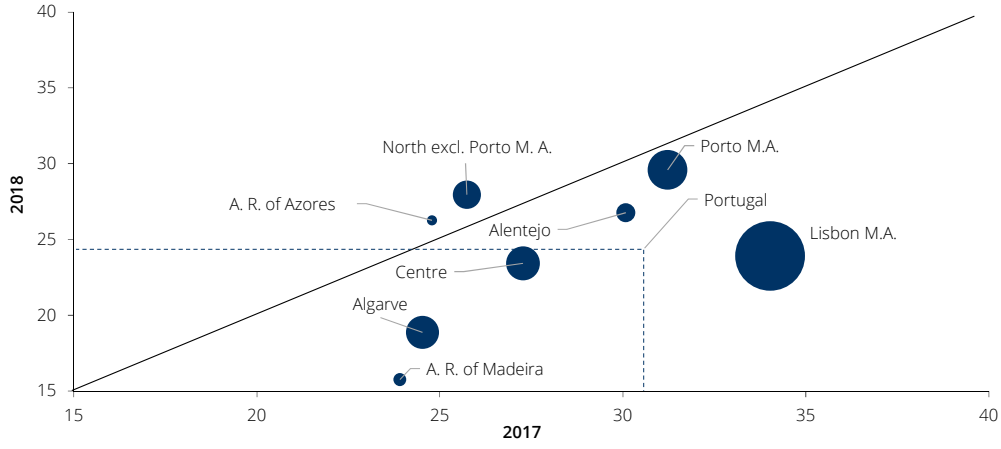


Source: Statistics Portugal and Banco de Portugal calculations.

Nationwide growth in the residential real estate market

Transactions rose by 24% in value and by 17% in number nationwide in 2018, with both indicators increasing in all regions (Chart I.2.13). However, there was some deceleration compared to 2017, especially in the last quarter of the year, which is expected to be linked to the consolidation of the housing market after a prolonged period of sharp growth in transactions. This deceleration occurred in all regions except for the North region excluding the Porto Metropolitan Area and the Autonomous Region of the Azores. In 2018 there was also a reduction in the average time required to sell residential properties.[62]

Chart I.2.13 • Growth in dwelling transactions | Per cent



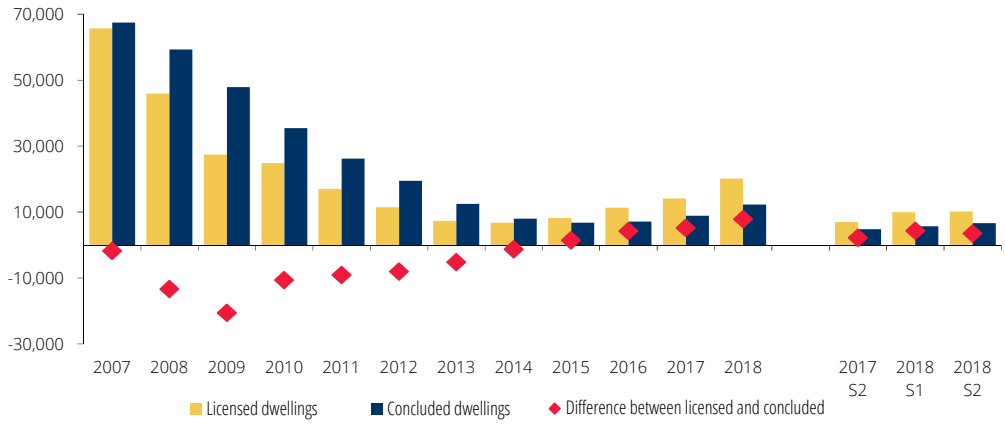
Source: Statistics Portugal and Banco de Portugal calculations. | Note: The circle size corresponds to each region's transacted amount as a share of the total transacted amount in Portugal in 2018.

62. According to data provided by the Associação dos Profissionais e Empresas de Mediação Imobiliária de Portugal - APEMIP (Portuguese association of intermediaries in real-estate transactions). There is no publicly available intra-annual information to confirm the reversal of this indicator in the second half of the year. However, APEMIP, anticipates an increase in the average time to sell a house in 2019. For further detail, see the analysis of the APEMIP Research Office at: https://associados.apemip.pt.

Prospects for the construction sector continued to improve in 2018

The number of building permits and housing completions in new construction of household dwellings increased by 43% and 38% respectively in 2018, maintaining the recovery path initiated in 2015 for permits and in 2016 for completions (Chart I.2.14). The difference between building permits and housing completions is an indicator of future increase in supply, given the time lag between obtaining a building permit and completing the construction of a house. Therefore, the property market's increase in supply is expected to continue in the near future.

Chart I.2.14 • Licensed and concluded dwellings in new construction for family housing
| In number

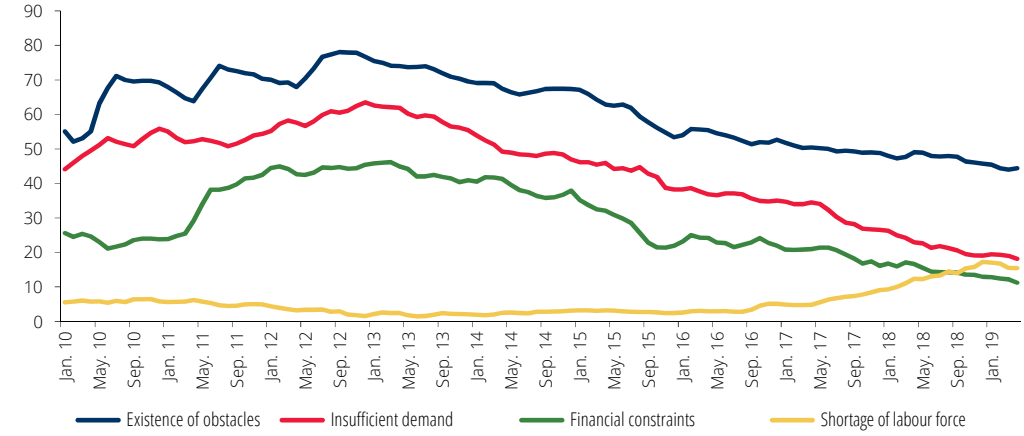


Source: Statistics Portugal and Banco de Portugal calculations.

The evolution of the number of building permits and housing completions in new construction of household dwellings is consistent with the prospective information from the Construction and Public Works' survey. Since mid-2012, the share of enterprises reporting obstacles to the construction sector's activity in Portugal has been declining (Chart I.2.15), reaching around 45% on average in the first quarter of 2019, 3 p.p. less than in the same quarter of 2018. Over the period considered, the percentage of enterprises that indicate demand as the main factor currently limiting building activity has also fallen to 19.3% in the same period, a 6 p.p. fall compared to the same quarter of 2018. The same decreasing trend is seen in the share of enterprises indicating financial constraints as one of the main obstacles to construction in Portugal, which stood at 12.5% in the first quarter of 2019, a 4 p.p. fall year on year. In the opposite direction, the shortage of skilled labour has shown an increasing trend, particularly since 2017, having increased by 6 p.p. year on year in the first quarter of 2019 to 16.4%. Thus, there is a shift in the pattern of factors that limit the sector's activity, such as fewer constraints on demand, including sales prospects, and greater constraints on supply. This evolution is also observed at the euro area level.[63]

63. See "The state of the real estate market", *Economic Bulletin*, Issue 7, ECB, 2018.

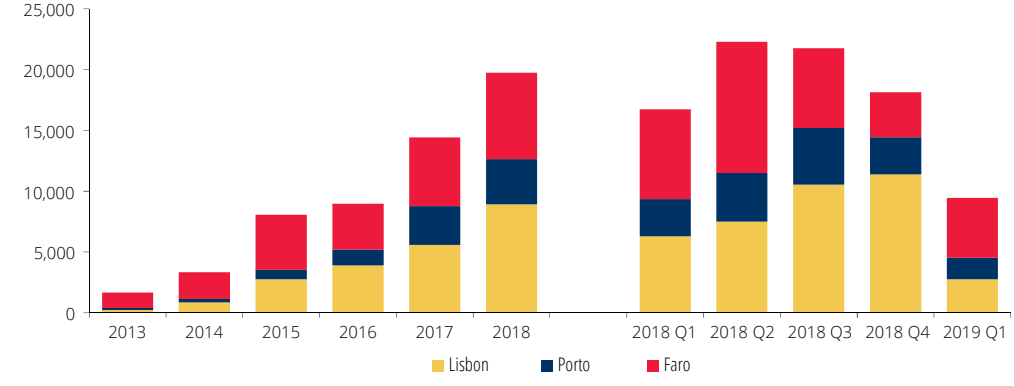
Chart I.2.15 • Main obsctacles limiting building activity | Per cent of total responses



Source: Construction Survey, Statistics Portugal and European Commission. | Note: The data presented is seasonally adjusted and corresponds to a 3-month moving average.

Tourism and particularly local accommodation have contributed to the growth of the residential real estate market, enhancing demand for real estate by private and institutional investors. The number of local accommodation registrations in the three districts with the highest share of total registrations in Portugal, namely Lisbon, Porto and Faro, increased significantly in 2018 (60%, 16% and 26% respectively) compared to the previous year (Chart I.2.16). However, it should be noted that the number of registrations fell by 44% year on year for the three districts as a whole in the first quarter of 2019, which is likely to be associated with the local accommodation scheme's regulatory change that entered into force in October 2018[64]. The tax regime for non-regular residents and the Golden Visa regime have contributed to the recently observed buoyancy. As regards the latter, however, investment in real estate to obtain a residence permit dropped around 1% in 2018 and 35% in the first quarter of 2019, year on year.[65]

Chart I.2.16 • Number of local accommodation permits granted in Lisbon, Porto and Faro | In number



Source: National Registry of Local Accommodation and Banco de Portugal calculations. | Note: The quarterly data presented was annualised.

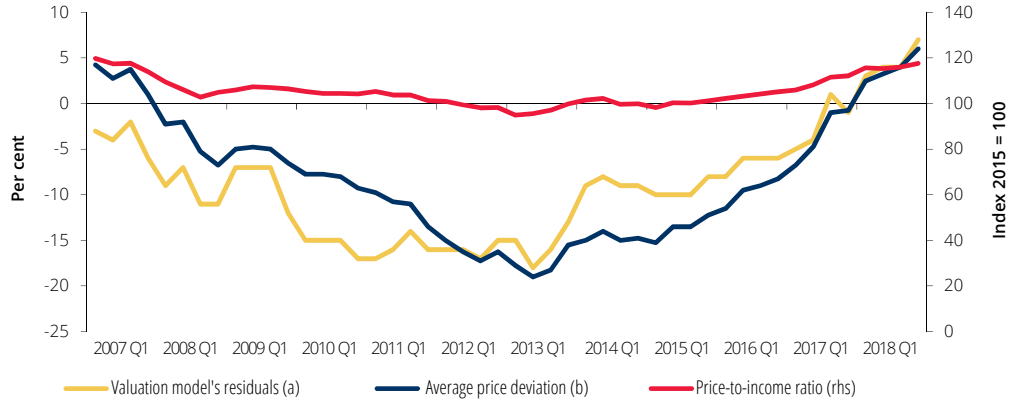
64. The legislative amendment refers to Law No 62/2018, published in the Official Gazette on 22 August 2018, which seeks to amend the regime granting permits for operating local accommodation.

65. Information provided by the Immigration and Borders Service (SEF).

The intensity and persistence of the increase in prices has led to some evidence remaining, in aggregate terms, of overvaluation in the residential real estate market (Chart I.2.17). Considering the measures estimated by the European Central Bank,[66] house prices have been above their economic fundamentals[67] since the first quarter of 2018. Given the heterogeneity of different geographical areas, overvaluation is expected to be more pronounced in some locations, such as prime locations in the Lisbon and Porto Metropolitan Areas.

However, it should be noted that there are some factors with a strong influence on the buoyancy of the real estate market recently and on the setting of house prices that are not explicitly considered in the two measures, such as investment by non-residents[68] and tourism.

Chart I.2.17 • Valuation measures of house prices in Portugal | Per cent and index 2015 = 100



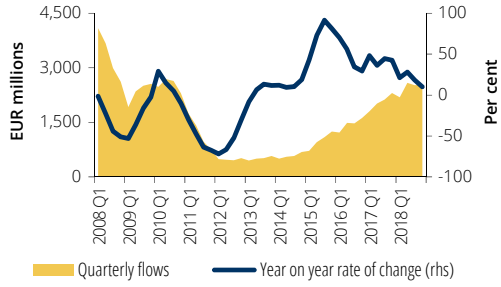
Sources: European Central Bank – *Statistical Data Warehouse* and Organisation for Economic Cooperation and Development. | Notes: Positive values signal the existence of overvaluation. (a) The residuals from the valuation model result from the estimation of a model of house prices based on their economic fundamentals. (b) The average price deviation is a a synthetic measure based on four valuation metrics considering indicators both related to housing demand and to asset pricing methods.

An excessive expansion of housing credit in a context of overvalued house prices poses a risk to financial stability (see Box 3 regarding a cyclical systemic risk indicator in Portugal and, particularly, the subindicators associated with house prices and bank credit) as a sharp fall in prices could result in losses for banks, for example, by reducing the value of collateral associated with housing credit (Chart I.4.22, Section 4.3), and in a reduction of households' real wealth, as it is largely composed of housing. Recently, gross flows of new bank loans for house purchase maintained the recovery path initiated in 2013, albeit at levels significantly lower than those observed before the financial crisis (Chart I.2.18), stabilising as of the middle of the year. Despite the upward trend of the amount of transactions of dwellings, the share of these transactions financed using loans has remained relatively stable at around 40%, well below past values (Chart I.2.19). Thus, the price dynamics in the residential real estate market have not been accompanied by an increase in the net flow of

66. Estimates based on four different valuation methods, namely the price-to-income ratio, the price-to-rent ratio, an asset pricing model and a Bayesian inverted demand model. For more information, see Box 3 of the June 2011 or November 2015 issues of the ECB *Financial Stability Report*.
67. The economic fundamentals considered in the measures presented are real disposable income per household, real housing stock per capita and real average interest rate on loans for house purchase.
68. In 2017 investment in the Portuguese real estate market by non-residents accounted for 8% of real estate properties sold, as shown in Chart I.2.14 of the December 2018 *Financial Stability Report*.

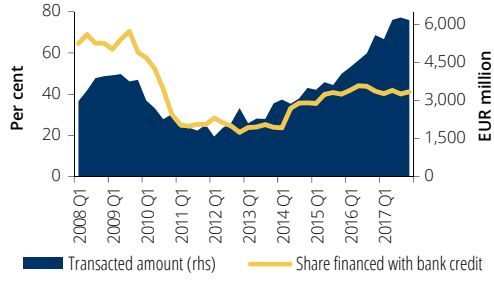
loans for house purchase.[69] The annual rate of change in loans for house purchase continued to be negative in 2018 and in the first quarter of 2019 (-0.5% in March 2019),[70] though at a decreasing pace.

Chart I.2.18 • Flows of housing credit



Source: Banco de Portugal.

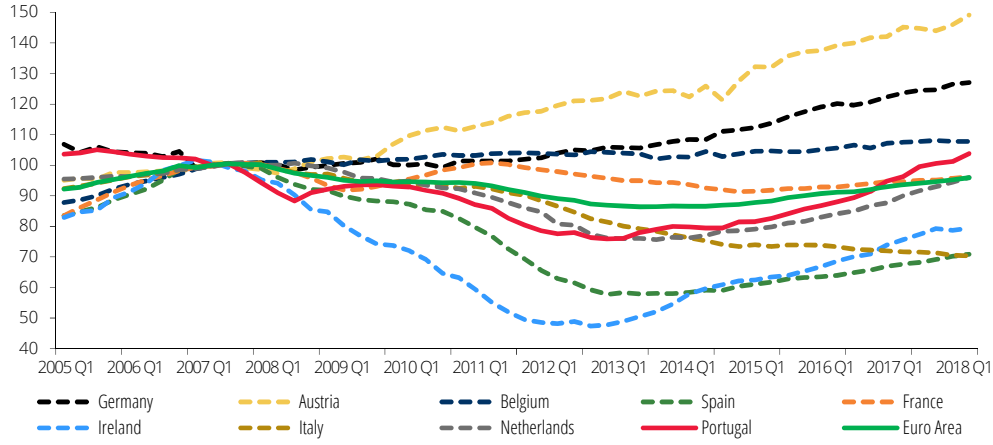
Chart I.2.19 • Share of dwelling transactions financed with bank credit



Sources: Banco de Portugal and Statistics Portugal.

The paradigm of growth in house prices is relatively widespread in euro area countries (Chart I.2.20). Economic recovery and low interest rates across all the countries considered could be the basis for these developments. Portugal continued to stand out as one of the countries with high house price growth, which, in real terms, was close to the values observed prior to the international financial crisis.

Chart I.2.20 • Real house prices | Index 2007 = 100



Source: Organisation for Economic Cooperation and Development.

2.3.2 Commercial real estate market

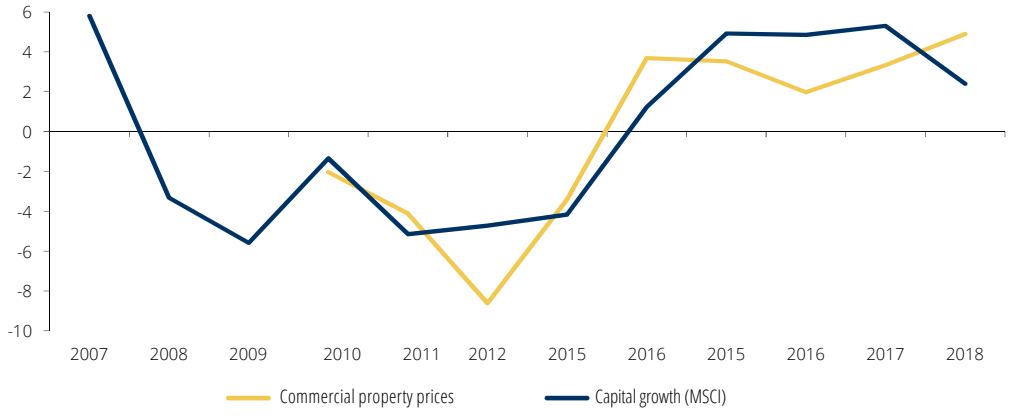
The commercial real estate market presents a number of unique characteristics, such as an increased correlation with the business cycle compared to the residential segment,[71] as, on one

69. The net flow of loans for house purchase consists of the difference between the amount associated with the new loans and the repayments made, both regularly and early.
70. The annual rate of change in credit is calculated on the basis of the ratio between end-of-month outstanding amounts and monthly transactions. Monthly transactions are calculated on the basis of the differences between end-of-month outstanding amounts adjusted for reclassifications, write-offs, sales of loan portfolios, price and exchange rate revaluations and for any other changes that are not due to financial transactions.
71. See *Commercial Property Markets*, ECB, December 2008.

hand, its demand directly depends on economic activity and, on the other hand, it is an asset class, the value of which is determined by the net present value of future rents.[72] However, it is important to note that, as in other euro area countries, its analysis is particularly hampered by the lack of harmonised information, by being less frequent and by the limited geographical coverage. There is little information from official sources, with data coming mostly from private sources, which typically target properties in prime locations in the Lisbon and Porto Metropolitan Areas.[73]

In 2018, the commercial real estate market maintained the growth path initiated in 2014. Commercial real estate prices increased by 4.9%, an increase of 1.6 p.p. compared to 2017 (Chart I.2.21). Conversely, the Morgan Stanley Capital International (MSCI) index[74] for Portugal increased by 2.3% in 2018, 3 p.p. less than in the previous year. This divergence may be due to differences in the sample of properties considered, with MSCI's sample being largely composed of retail properties typically located in prime locations. It is therefore expected that this segment will be more sensitive to the slowdown in the growth of economic activity and tourism, previously considered to be drivers of the recovery recorded. On the other hand, these results could also be caused by methodological differences in the production of the two metrics.[75] Nevertheless, growth in this segment was more restrained than in the residential real estate market, where prices grew by 5.4 p.p. more in 2018 than commercial real estate prices.

Chart I.2.21 • Commercial property prices | Per cent



Sources: Statistics Portugal and Morgan Stanley Capital International.

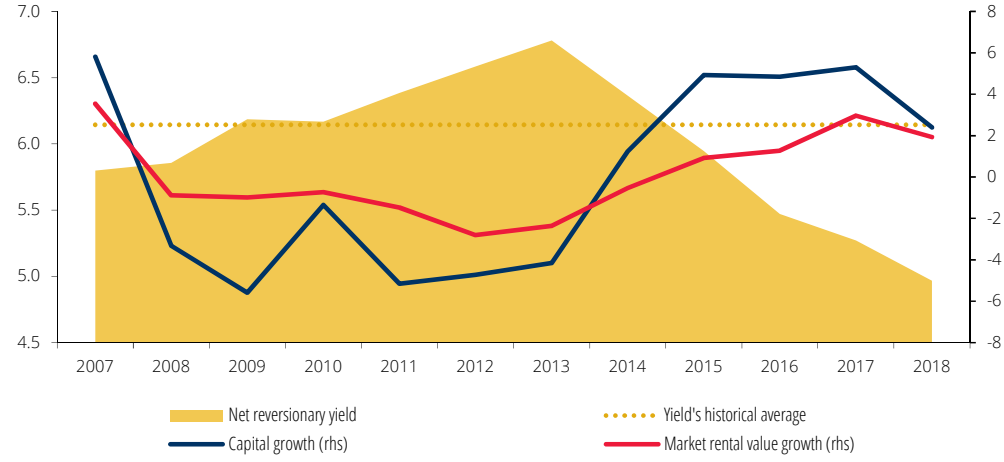
In 2018, the net reversionary yield of the commercial real estate market reached record lows

In the presence of significant divergences between the net present value of renting a commercial property and its purchase price, a correction of this imbalance is expected to be achieved by a

72. See Zhu, H. "The importance of property markets for monetary policy and financial stability", *BIS Papers*, No 21, 2003.
73. As in the analysis made in Section 2.3 of the June 2018 edition of the *Financial Stability Report*, private sources include consultancy firms, service providers and real estate developers, with the same limitations as those set out.
74. The MSCI index represents the valuation of the capital of a portfolio of 523 real estate properties. For purposes of analysis, MSCI's standing investments portfolio, which consists of all directly owned standing investments in completed and lettable properties and excludes any (part) transaction activity in a 12-month period, unless otherwise indicated. The capital valuation corresponds to the change in the value of the properties concerned.
75. The Commercial Property Price Index (CPPI) s calculated based on commercial real estate transaction prices, while the MSCI index corresponds to the valuation of the properties included.

change either in the price or in the rent. In 2018, the net reversionary yield[76] stood at record lows (5.0%), following the reduction path it had begun in 2013 (Chart I.2.22). This compression reflected the capital growth, which exceeded the growth of the rental value.

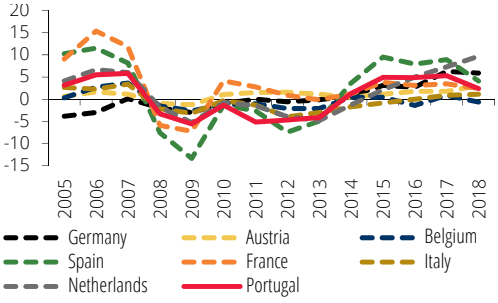
Chart I.2.22 • Net reversionary yield in the commercial real estate market in Portugal | Per cent



Source: Morgan Stanley Capital International and Banco de Portugal calculations. | Note: The yield's historical average corresponds to the period from 2000 to 2018.

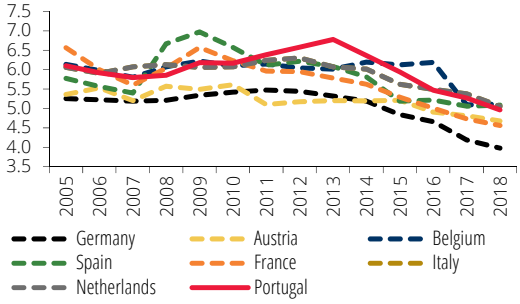
According to the information provided by MSCI, the deceleration of the capital growth of commercial real estate was seen across a number of euro area countries (Chart I.2.23). At the same time, as in Portugal, the net reversionary yield in the commercial property market continued to fall, reaching record lows in most of the euro area countries (Chart I.2.24). Similar behaviour in some of these countries suggests that common factors, such as the low interest rate environment, have contributed significantly to recent market developments.

Chart I.2.23 • Capital growth | Per cent



Source: Morgan Stanley Capital International.

Chart I.2.24 • Net reversionary yield | Per cent

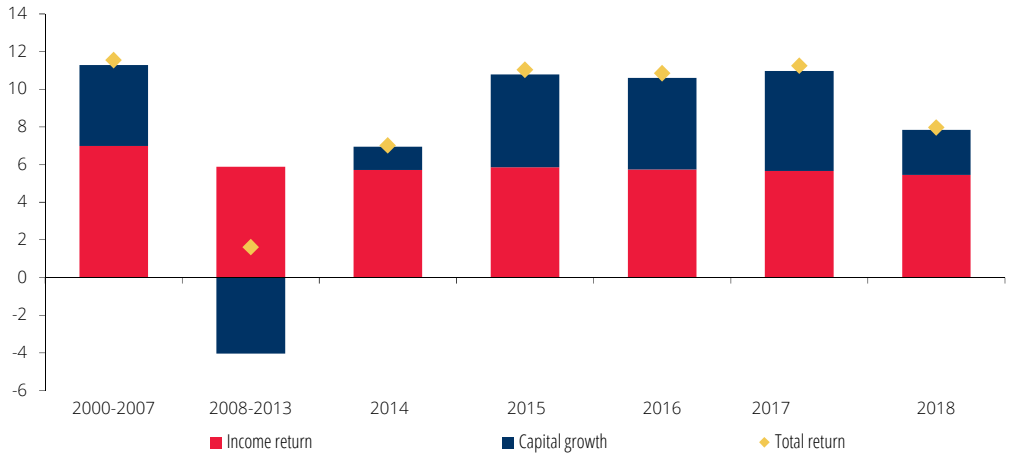


Source: Morgan Stanley Capital International.

76. The net reversionary yield is defined as $\frac{VMAL_t}{VC_t}$, where $VMAL$ corresponds to the net market rental value and VC to the capital value.

The total return of the commercial real estate market[77] comprises the component resulting from the capital growth of the properties in the portfolio and the component resulting from their rental. Thus, the total return remained relatively high (8.0% in 2018) but decreased compared to 2017 (3.3 p.p. less), mainly reflecting the evolution of capital growth (Chart I.2.25). In turn, the income return component remained broadly constant (5.5%), with only a slight decrease compared to 2017 (0.2 p.p. less).

Chart I.2.25 • Total return of the commercial real estate market | Per cent



Source: Morgan Stanley Capital International.

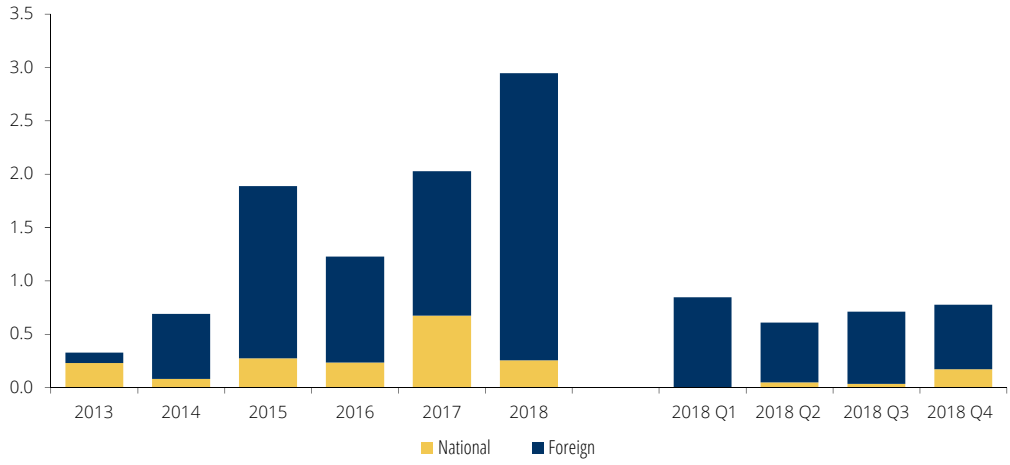
The commercial real estate market has shown a significant volume of investment (Chart I.2.26), which reached a peak in 2018, when it represented 1.5% of GDP. The increase in investment enabled banks to reduce the number of commercial real estate properties held in their portfolios and the stock of NPLs collateralised by commercial real estate. As seen of late, the contribution of non-residents stood out, representing 91% of the total investment in 2018, based on the information used. Part of the investment by non-residents was carried out by Real Estate Investment Trusts (*Financial Stability Report*, June 2018, section 2.3). Against this background, Decree-Law No 19/2019 of 28 January 2019 introduced into the Portuguese legislation a legal framework for Real Estate Investment Trusts (REIT), similar to those already in place for these instruments in other jurisdictions, to establish "a new vehicle for promoting investment and boosting the real estate market, in particular the rental market" (Box 5).

Diversification of the origin of investment could improve efficiency in price setting,[78] although it could make the market more volatile and vulnerable to abrupt changes in the investors' risk perception, as international investment is typically more mobile.

77. The total return is calculated by adding up the capital growth, which is defined as $\frac{(VC_t - VC_{t-1} + R_t - D_t)}{(VC_{t-1} + D_t)} \times 100$, and the income return, which is defined as $\frac{RL_t}{VC_{t-1} + D_t} \times 100$, where VC corresponds to capital value, R to capital return, D to capital expenditure and RL to the net rent receivable.

78. See *Financial Stability Review, Commercial Property Investment and Financial Stability*, ECB, December 2007.

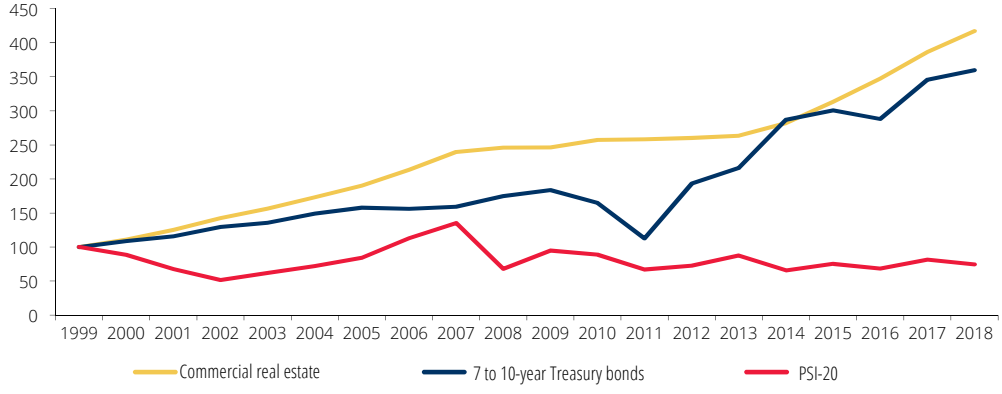
Chart I.2.26 • Investment in the commercial real estate market, by origin | EUR billion



Source: Cushman & Wakefield.

The recent recovery of the real estate market is consistent with the improvement of the economic conjecture and with the low interest rate environment, which increases the opportunity cost of investing in other assets as compared to investing in real estate. Total return from the commercial real estate market has exhibited less volatility compared to other asset classes, namely Treasury bonds and shares of Portuguese listed companies (Chart I.2.27). In a longer investment horizon, the commercial real estate market has typically recorded higher returns than these asset classes. This gap has increased in recent years with Portugal's total cumulative return from commercial real estate, which includes the capital growth and income return components, standing at 58% between 2013 and 2018.

Chart I.2.27 • Total return indices of different asset classes | Index 1999 = 100



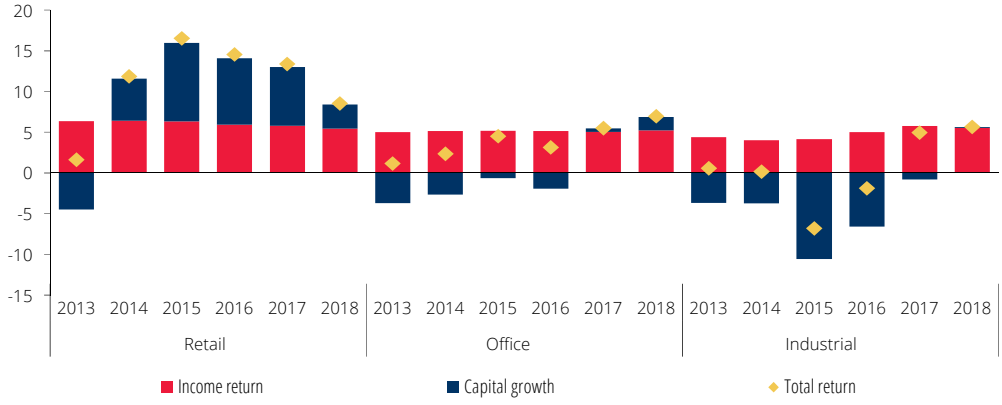
Source: Morgan Stanley Capital International, Bloomberg and Refinitiv. | Note: The considered indices include both the capital growth and income return components. The latter corresponds to cupon payments in the case of Treasury bonds and to dividend distribution in the case of PSI-20.

The commercial real estate market is quite heterogeneous between segments. In the retail segment, total return stood at 8.5% in 2018 and maintained the reduction path observed since 2014 (Chart I.2.28). The vacancy rate[79] in this segment showed a slight increase of 1 p.p. compared

79. The vacancy rate is defined as the ratio of lettable area, in square meters, to total area of the commercial real estate property.

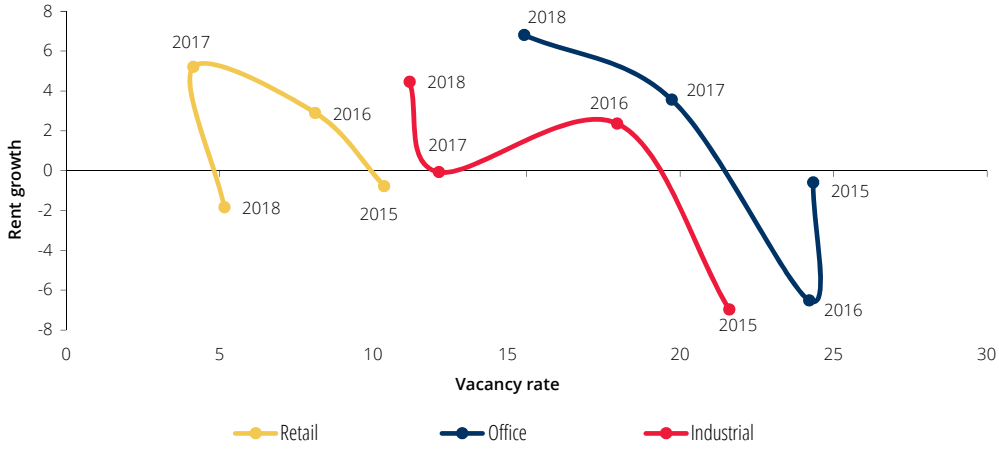
to 2017, while rents fell by 1.8% (Chart I.2.29). The reduction in the total return of the retail segment may be linked to its stabilisation, in particular in regard to real estate in prime locations for high street retail and shopping centres. On the other hand, the office segment continued to grow, with its total return increasing (7.0% in 2018) via the capital growth component. In this segment, the vacancy rate fell, and the rents' growth rate increased, as the increase in demand, together with a lack of supply, resulted in a general increase in rents.[80] In the industrial segment, after a significant drop in capital growth in recent years, a slight recovery was observed in 2018, recording a total return of 5.6%. As in the office segment, there was a drop in the vacancy rate and in particular an increase in the rate of rent growth, which rose by 4.5% in 2018.

Chart I.2.28 • Total return per segment | Per cent



Source: Morgan Stanley Capital International.

Chart I.2.29 • Vacancy rate and rent growth per segment | Per cent

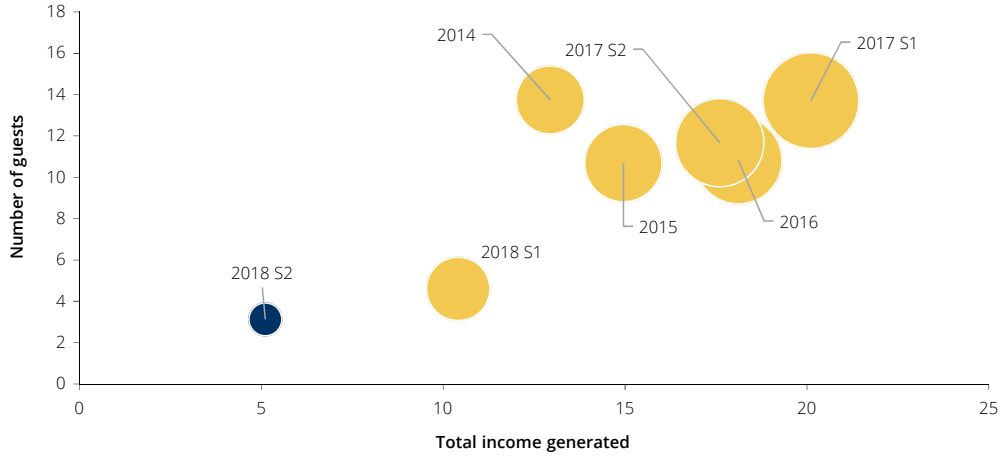


Source: Morgan Stanley Capital International. | Note: The indicators presented refer to the same store portfolio, which includes properties present in the portfolio both at the beginning and at the end of the measurement period and which did not undergo any (re-)development or transaction.

80. See *Market 360º Portugal 2018-2019*, Jones Lang LaSalle (2019).

As mentioned above, tourism has been associated with the recovery of the residential and commercial real estate markets. In the case of commercial real estate, it has been particularly linked, on the one hand, to the growth of the retail sector, and, on the other hand, to the development of the accommodation and food services' sector. Tourism's growth trend continued in 2018, though it decelerated slightly, particularly in the second half of the year (Chart I.2.30). In annual terms, in 2018 the number of guests and total income from tourism accommodation establishments recorded annual rates of change of 3.8% and 7.3% respectively, a decrease of 8.8 p.p. and 8.6 p.p. from 2017.

Chart I.2.30 • Year on year growth rate of the number of guests and total income generated in touristic lodging facilities | Per cent



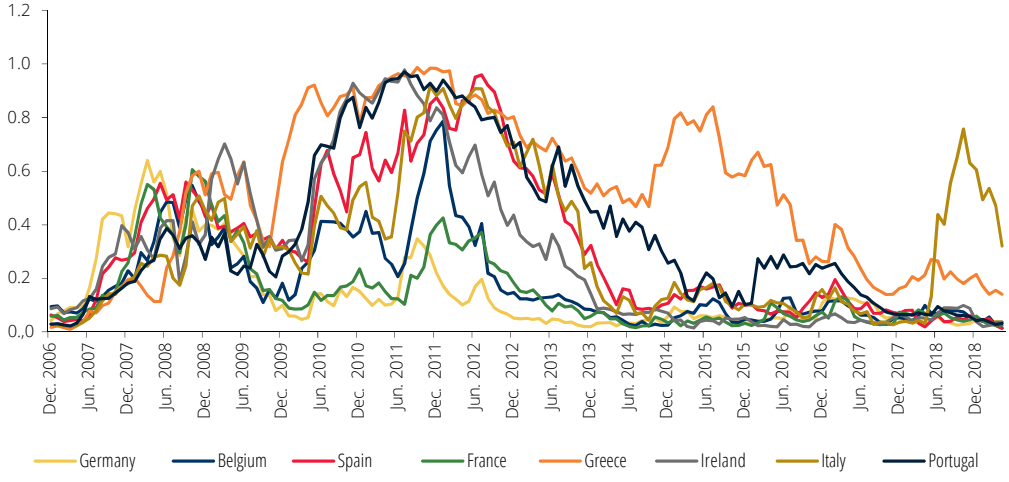
Source: Statistics Portugal and Banco de Portugal calculations. | Note: The circle size corresponds to the year on year growth rate of the average income generated per available room in touristic lodging facilities.

3 Financial position of the General Government and of the Non-financial Private Sector

3.1 General government

In 2018 and the first months of 2019, general government financing continued to benefit from positive developments in economic activity, both in Portugal and in the euro area, and from the maintenance of low funding costs. In mid-2018, uncertainty linked to political developments in Italy had a limited effect on the euro area sovereign debt markets, with no significant and persistent contagion to other jurisdictions, including Portugal (Chart I.3.1).[81] On the fiscal side, developments were positive, both in deficit and debt. A deepening of the fiscal adjustment effort is, however, desirable in order to ensure the maintenance of the downward trend of general government indebtedness, even in a context of less buoyant economic activity and less favourable financing conditions.

Chart I.3.1 • Indicator of systemic stress in euro area sovereign debt markets – SovCISS



Source: ECB. | Notes: Composite indicator aggregating data on risk premia, volatility and liquidity conditions in the secondary market. For more details, see European Central Bank, *Financial Stability Review*, May 2018. Last observation: april 2019.

Budget deficit was reduced to a historically low level

In Portugal, the general government deficit on a national accounts basis was 0.5% of GDP in 2018. Excluding the impact of measures classified as temporary in the European System of Central

81. For further details on developments in the sovereign debt market, see Section 2.2 of this Report.

Banks (ESCB),[82] the deficit decreased by 1 p.p. of GDP. This reduction has benefited from positive developments in economic activity,[83] the decrease in interest expenditure and, to a lesser extent, the improvement of the structural primary balance. Total general government revenue increased by 5.5% in 2018 (4% in 2017), reflecting a growth in the collection of the main taxes and social contributions. Developments in expenditure were strongly influenced by the impact of temporary measures in 2017 and 2018. Excluding this effect, primary expenditure increased by 3.9%. In turn, interest expenditure decreased by 6.5%, amounting to 3.5% of GDP in 2018. Reduction in interest expenditure continued to reflect the issuance of new debt with more favourable price conditions than reimbursed debt.[84]

The European Commission's spring forecast points to the budget deficit standing at 0.4% of GDP in 2019. This estimate includes the impact of the capital injection into Novo Banco under the Contingent Capital Mechanism in May (0.6% of GDP). In 2020 the Commission forecasts a reduction in the deficit to 0.1% of GDP. This projection corresponds to an improvement in the budget balance that is slightly less marked than the one presented in the Government's Stability Programme for the period 2019-23 (SP/2019).

In 2018 the budget balance improved across most euro area countries. The budget balance of the euro area as a whole stood at -0.5% of GDP, a 0.5 p.p. improvement compared to 2017, largely reflecting positive developments in economic activity. France, Spain and Italy continued to show a budget deficit above 2%, despite minor improvements, thus contributing to a negative balance in aggregate terms.[85] In the euro area as a whole, the Commission's forecast points to a reduction of the budget balance in 2019 and a stabilisation in 2020. This is taking place against a background of deterioration in the structural primary balance, reflecting an expansionary fiscal policy stance in most euro area countries.

The State completed the target of amortisation of the loans obtained under the EFAP at a higher cost

In 2018, general government financing[86] from households through retail instruments was significantly lower than in recent years (Chart I.3.2). Net subscriptions of Treasury certificates decreased by 63% compared to 2017, reflecting a decrease in the remuneration on new subscriptions, and net redemptions of savings certificates were residual. Despite the issues of floating rate bonds (Obrigações do Tesouro de Rendimento Variável – OTRV) to the amount of €1 billion, the net flow of these securities held by households was virtually nil, reflecting sales in the

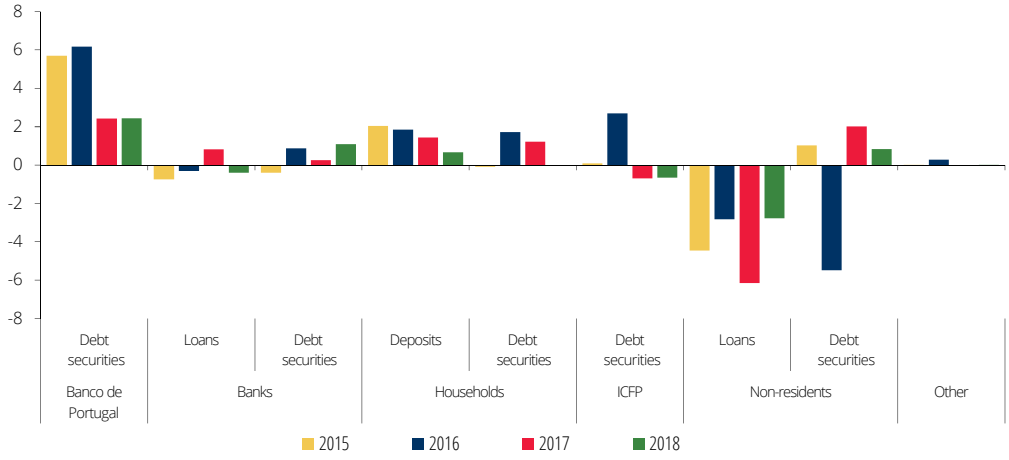
82. Due to their magnitude, it is important to emphasise in particular the impact of capital injections, in 2017, into CGD (2.0 p.p. of GDP) and, in 2018, into Novo Banco by the Resolution Fund (0.4 p.p.), after the Contingent Capital Mechanism (0.4 p.p.) has been triggered. For further details on general government financing in 2018, including the set of temporary measures and other non-recurrent factors affecting the budget balance, and developments in the main budget variables in structural terms, see Banco de Portugal, *Economic Bulletin*, May 2019.
83. The contribution of economic activity to fiscal developments is measured on the basis of the methodology of cyclical adjustment of balances developed by the ESCB, and its application to analyse fiscal developments in Portugal is presented in Braz et al. (2019), "The new ESCB methodology for the calculation of cyclically adjusted budget balances of cycle: an application to the Portuguese case", Economic Studies, Vol. V, No 2, April 2019.
84. In particular, the early repayments to the IMF in the course of 2017 and 2018, and the maturity of 10-year Treasury bonds in 2017 and 2018 with a coupon rate of 4.35% and 4.45% respectively.
85. In the case of Spain, the only Member State currently subject to the corrective arm of the Stability and Growth Pact, the budget balance figure allows for the correction of the excessive deficit within the set timeframe.
86. In the analysis of general government financing, based on Chart I.3.2, "financing" refers to the flow of funds over the year, i.e. transactions in liabilities on the basis of national accounts concepts (ESA 2010), in particular liabilities in the form of currency and deposits, loans and securities.

secondary market.[87] As a whole, financing from households obtained through these instruments amounted to 0.7% of GDP (2.7% in 2017). At the end of 2018, households held 12.3%[88] of total government debt, accounting for approximately 9%[89] of this sector's financial assets.

Financing from resident banks amounted to 0.7% of GDP in 2018. Compared to the previous two years, there was an increased financing in the form of securities (1.1% of GDP), which was only partially offset by a reduction of loans. In turn, similarly to 2017, financing from insurance corporations and pension funds was negative (0.7% of GDP). The portfolio of Portuguese government debt held by Banco de Portugal maintained a growth similar to that observed in 2017. The reduction of monthly net purchases under the PSPP was heterogeneous across countries. In 2018, net purchases decreased by 64% in the euro area as a whole, but only 11% in Portugal. Reflecting the ECB's reinvestment policy, the volume of net purchases of Portuguese securities in the first quarter of 2019 was still significant and higher than in the last quarter of 2018.

As regards financing from non-residents, in 2018 the early repayment of the remainder of the IMF loan, to the sum of €5.5 billion is noteworthy.[90] In turn, financing from non-residents through debt securities amounted to 0.8% of GDP, being lower than in 2017 (2% of GDP) and only through short-term instruments. Thus, general government financing from non-residents, excluding loans under the EFAP, remained at a fairly low level historically.

Chart I.3.2 • General government financing by counterparty and instrument | As a % of GDP



Source: Banco de Portugal. | Notes: Households' deposits in the general government comprise savings certificates and Treasury certificates. The acronym ICFP refers to Insurance corporations and pension funds.

Financing conditions in sovereign debt markets remained favourable

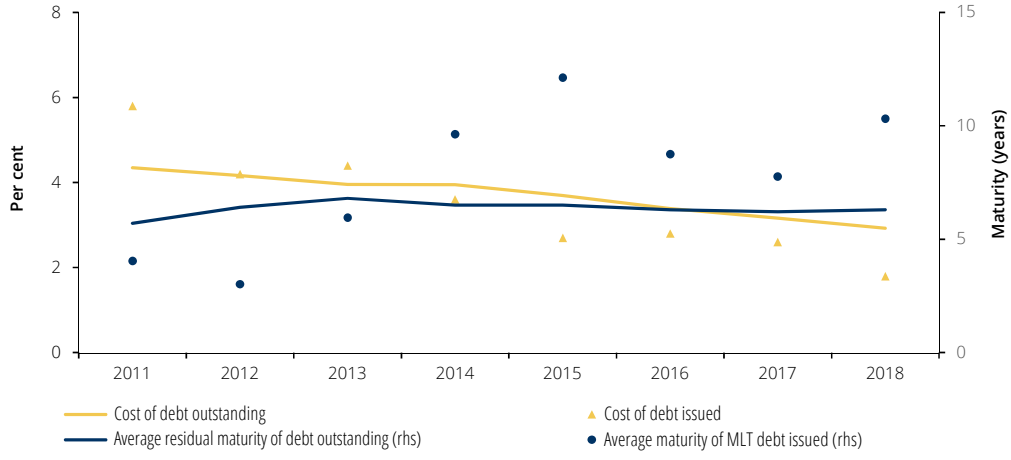
87. Floating rate bonds are placed with a more diversified set of investors, i.e. are not exclusively targeted at household savings.
88. Maastricht public debt.
89. On the basis of national accounts concepts (ESA 2010).
90. In two payments: €0.8 billion in January and €4.7 billion in December.

The average allotment rate in tenders of Treasury bonds with an approximate maturity of 10 years stood at 1.9%, 0.9 p.p. less than in 2017.[91] The downward path continued during the first months of 2019, quite pronounced in a context of already fairly low levels, with the average allotment rate of comparable Treasury bonds declining to 1.3% in tenders conducted until May. In the financing programme for Portugal for 2019, the Portuguese Treasury and Debt Management Agency (IGCP) plans a gross Treasury bond issuance of €15 billion – similarly to what was planned and carried out in the previous year – with around 55% of this amount executed until May. In turn, the average allotment rate in Treasury bill tenders stood at -0.34% in 2018, after -0.24% in 2017, remaining virtually unchanged in the tenders conducted in 2019 during the same period.

In 2018 the average maturity of issued medium and long-term debt increased, thus reverting the downward path of the past two years. In 2019 the average maturity in Treasury bond issuances conducted until May remained at a level close to that observed in 2018.

In 2018 the average cost of issued debt remained about 1 p.p. below the average cost of the stock (Chart I.3.3). Thus, there is still scope for a reduction in the interest expenditure of the State, if the financing conditions in sovereign debt markets remain favourable. In particular, the three Treasury bond issues maturing in 2019, 2020 and 2021, totalising around €28.5 billion,[92] have associated coupon rates of 4.75%, 4.8% and 3.85% respectively.

Chart I.3.3 • Cost and maturity of public debt



Sources: Banco de Portugal, ECB, IGCP and Statistics Portugal. | Notes: The cost of debt issued is weighted by issuance amount and maturity and comprises Tbills, PGB, FRN and MTN issued in the corresponding year. The average maturity of medium- and long-term debt issued considers PGB and MTN issued in the corresponding year.

The public debt ratio kept its downward path in 2018

As in 2017, developments in general government indebtedness were quite different by quarter. Despite the relative stabilisation in the first three quarters of the year, the public debt ratio

91. Comprising Treasury bond tenders with a residual maturity between 9 and 11 years. Excluding amounts placed during the non-competitive phase of tenders and amounts associated with syndicated issuances.

92. Outstanding amount as of April 30, 2019. On May 22, 2019, in the context of an exchange offer of Treasury Bonds, IGCP purchased 742 million euros from the security maturing in April 2021.

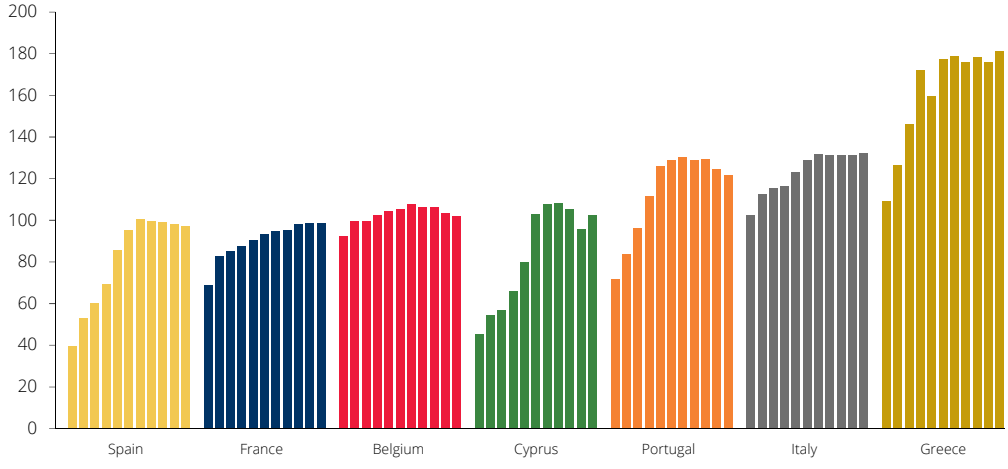
declined by 3.3 p.p. in 2018, to 121.5% of GDP, slightly above the estimate included in the State Budget for 2019. The improvement in the public debt ratio reflected the significant primary surplus and the favourable dynamic effect, which results from a negative differential – for the fourth consecutive year – between the interest rate implied in the debt stock and the growth rate of nominal GDP. In nominal terms, public debt increased by around €2.1 billion.

The reduction in the public debt ratio contained in the SP/2019 is somewhat more gradual than that in the SP/2018, but remains significant.[93] This revision mainly reflects the lower magnitude of primary surpluses over the projection horizon. In turn, the dynamic effect is only slightly more favourable than in the previous Stability Programme update, as the downward revision of projections for nominal GDP growth is offset by the smaller contribution of interest expenditure.[94]

In the euro area as a whole, the public debt ratio declined by 2.0 p.p., to 87.1% of GDP at the end of 2018.[95] Most euro area countries recorded a decrease in the public debt ratio as a percentage of GDP, albeit with relatively differentiated developments. In highly indebted countries as a whole, reductions were recorded only in Spain, Belgium and, more sharply, in Portugal (Chart I.3.4), with the aggregate public debt ratio of the seven more indebted countries remaining virtually unchanged.

The risk factors to developments in public debt ratios in Portugal and in most highly indebted countries in the euro area remained unchanged. The main risks in the medium term continue to be linked to the increase in the general level of interest rates, the reassessment of risk premia at global level, including in sovereign debt markets, and the slowdown in economic activity. In the long term, the main challenge is the trend of population ageing, which is likely to result in, on the one hand, an increase in the State's pension and healthcare expenses and, on the other hand, a decline in the labour force, with an impact on the growth potential of economies.

Chart I.3.4 • Public debt ratio in the most indebted euro area countries | As a % of GDP, end of period figures, from 2008, to 2018



Sources: Eurostat and Banco de Portugal. | Notes: Public debt from Maastricht. Countries with a public debt ratio above the euro area average in 2018. Countries in an ascending order according to the 2018 figure.

93. In total, a 21.9 p.p. reduction to 99.6% of GDP at the end of 2023 (103.7% at the end of 2022). SP/2018 forecast was 102% at the end of 2022.
94. The comparison between the SP/2018 and the SP/2019 only takes into account the period common to the two programmes (2019 -2022).
95. Aggregate euro area ratio on a non-consolidated basis, i.e. including loans between Member States under financial assistance programmes.

3.2 Financial position of the non-financial private sector

In 2018 net borrowing of the non-financial private sector stood at 1.3% of GDP, as opposed to the net lending position recorded since 2011 (0.2% of GDP in 2017). Compared with the previous year, this stemmed from a reduction in non-financial corporations' (NFCs) savings – mainly as a result of an increase in distributed income – and, to a lesser extent, increased investment by households and NFCs.

Against a background of private consumption growth, households turned to financial debt in 2018, for the second consecutive year. However, growth in new bank loans for house purchase and consumption moderated in the second half of 2018 and the first months of 2019. In the NFC sector, net repayment of financial debt resumed the path that had been interrupted in 2017. This predominantly reflected the repayment of financial debt to households and non-residents, given that the net flow of loans granted by the resident financial system was positive, for the first time since 2012. Despite the increase of distributed income by enterprises in 2018, the share of equity in NFCs' financing structure was further strengthened.

The indebtedness ratios[96] of households and NFCs, measured as a percentage of disposable income and GDP respectively, continued to decrease in 2018, in both cases mostly via the denominator effect.

Portuguese households and firms have benefited from a favourable environment over the past few years, amid economic activity growth and low interest rates. Nevertheless, the indebtedness ratio of both sectors remains high by euro area standards. As such, it is essential to ensure that deleveraging proceeds, in order to strengthen the resilience of households and firms to future adverse shocks.

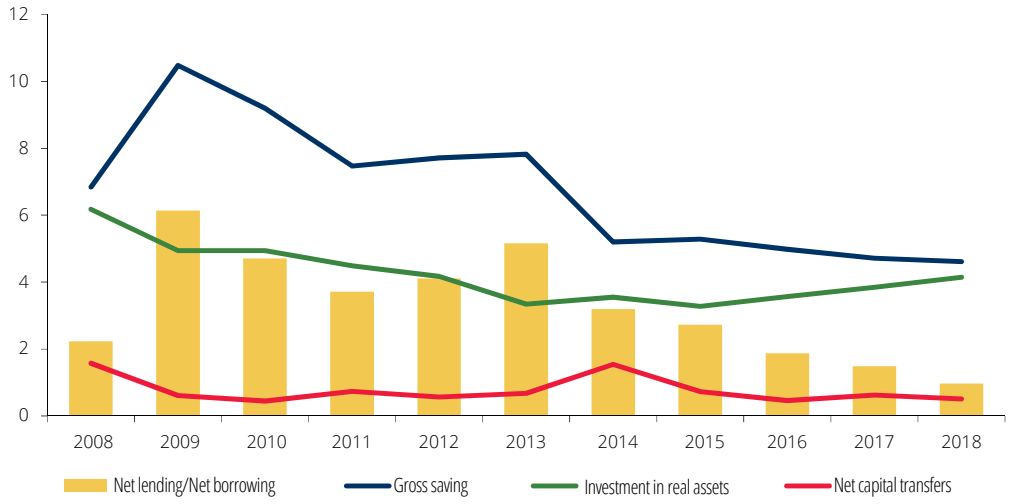
3.2.1 Households

In 2018 household net lending continued to decline

In 2018 household net lending stood at 1.0% of disposable income, which corresponds to a reduction of approximately 0.5 p.p. compared to 2017, thereby continuing the downward trend seen since 2013 (Chart I.3.5). This decrease essentially reflected greater investment in real assets, as well as a slight decrease in the saving rate, as private consumption growth outpaced disposable income. The saving rate remained at a historically and internationally low level. In the euro area as a whole, household net lending decreased marginally, from 3.1% in 2017 to 3.0% in 2018. Since 2014, net lending figures in Portugal have been close to the euro area median (Chart I.3.6).

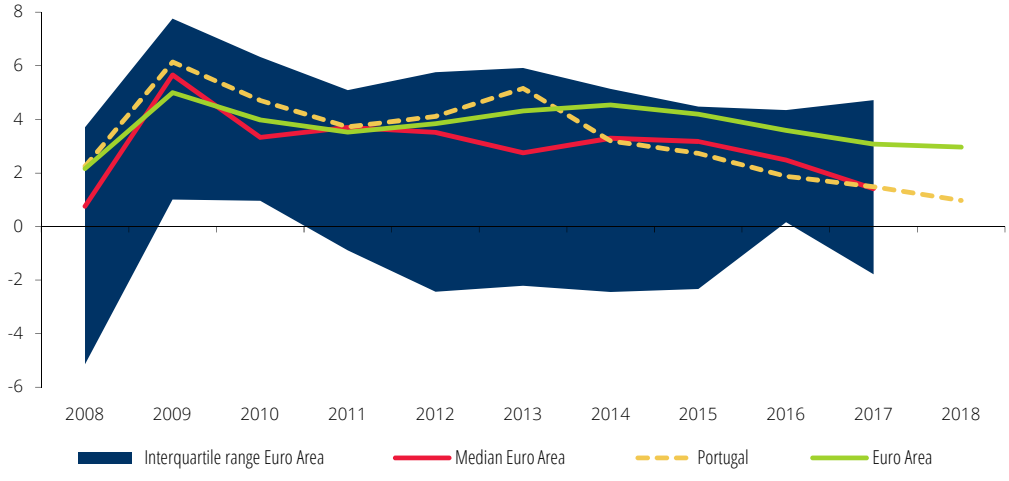
96. To determine the debt aggregate used in this section, as regards households and NFCs, information is used on loans obtained, securities issued and trade credits received, on a consolidated basis in the institutional sector (i.e. excluding positions between firms that belong to the same institutional sector). As a general rule, information on loans obtained and securities issued by each sector (NFCs and households) is obtained through data reported by the creditor sectors (i.e. it refers to data on assets of creditor sectors, rather than liabilities of debtor sectors). Therefore, when, for instance, a bank writes off a loan that was granted to an NFC or a household, the value of debt of that sector will be reduced by the same amount, although this does not necessarily imply, by itself, the extinction of that debt.

Chart I.3.5 • Savings, investment and net lending/borrowing of households | As a percentage of disposable income



Source: Banco de Portugal and Statistics Portugal. | Notes: (a) Corresponds to the sum of gross fixed capital formation, changes in inventories, acquisitions less disposals of valuables, and acquisitions less disposals of non-produced non-financial assets.

Chart I.3.6 • Net lending/borrowing of households | As a percentage of disposable income



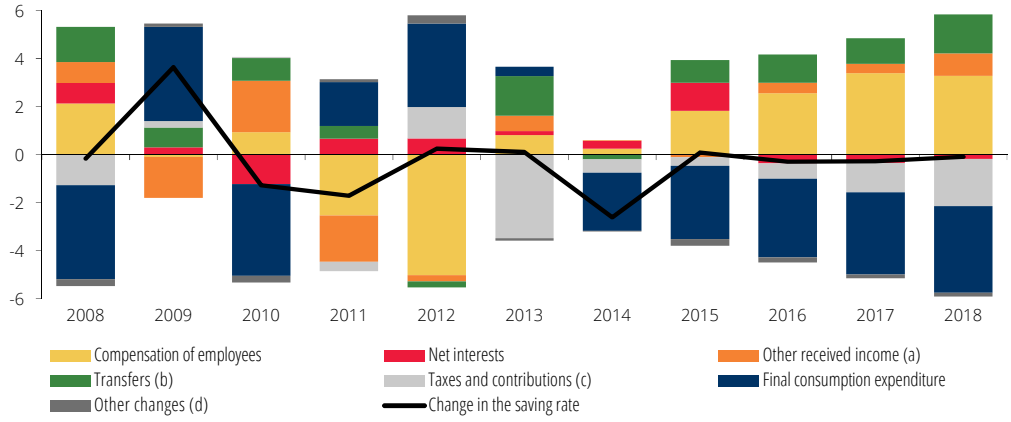
Source: Eurostat (and Banco de Portugal calculations). | Notes: Euro area values correspond to the ratio of the sum of net lending/borrowing in its Member States to the sum of disposable income in those countries (cross-border flows within the euro area are consolidated). The value of 2018 for the euro area is an estimate based on the sum of quarterly figures. The calculation of the interquartile range and the median covers all euro area countries excluding Malta, given that no information is available for this country.

In Portugal, the household saving rate declined slightly from 2017, to 4.6% of disposable income, which corresponds to a new historical low. After a decline in the saving rate between 2009 and 2014, over the past few years the downward trend has been less sharp. Final consumption expenditure contributed to the reduction in the saving rate, as it has accelerated since 2014 (Chart I.3.7). Disposable income has grown at a slower pace than private consumption, in nominal terms, since 2016, amid a marked increase in direct taxes and social contributions. During this period, the decrease in net interest income, stemming from a reduction in the amount of interest income

that outpaced that of interest expenses, contributed to a more subdued growth in entrepreneurial and property income. Income accruing from compensation of employees and transfers grew significantly, and, as of 2016, have outpaced property and entrepreneurial income. Given that the latter source of income is usually associated with an increased propensity to save,[97] its lower growth compared to other sources may be contributing to the aforementioned reduction in the saving rate.

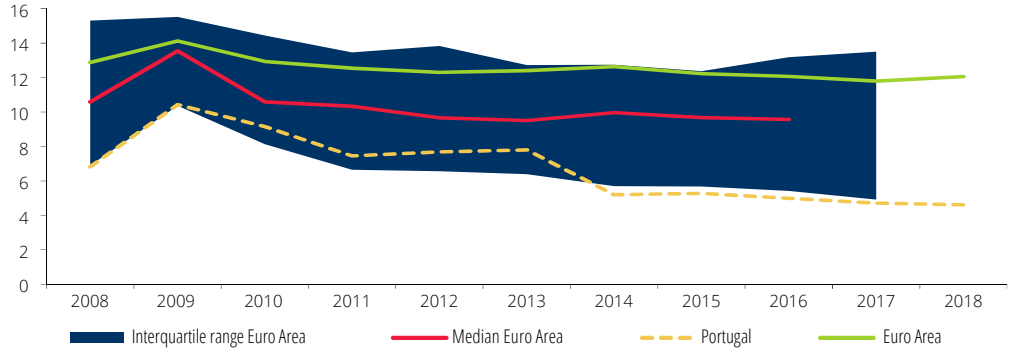
Portugal is among the euro area countries with the lowest household saving rate (Chart I.3.8). In contrast to developments at national level, in the euro area the saving rate increased from 11.8% in 2017 to 12.1% in 2018.

Chart I.3.7 • Contributions to changes in the household saving rate[98] | In percentage points of disposable income



Source: Statistics Portugal (and Banco de Portugal calculations). | Notes: (a) 'Other income received' includes gross operating surplus, gross mixed income, distributed income of corporations, rents received and property income attributed to insurance policy holders. (b) 'Transfers' refer to other current transfers. (c) 'Taxes and contributions' include taxes on income and social contributions. (d) 'Other changes' include changes in disposable income, rents paid and the adjustment for changes in net equity of households in pension funds.

Chart I.3.8 • Household saving rate | As a percentage of disposable income



Source: Eurostat (and Banco de Portugal calculations). | Notes: Euro area values correspond to the ratio of the sum of savings in its Member States to the sum of disposable income in those countries (cross-border flows within the euro area are consolidated). The value for 2018 for the euro area is an estimate based on the sum of quarterly figures. The calculation of the interquartile range and the median covers all euro area countries excluding Malta, given that no information is available for this country. Disposable income is adjusted for changes in net equity of households in pension funds.

97. For more details, see Box 5.1, *Annual Report – The Portuguese Economy in 2012*, Banco de Portugal.

98. Household savings equal the difference between the sum of disposable income and the adjustment for changes in net equity of households in pension funds and final consumption. As regards the analysis of contributions to its changes, the saving rate was calculated as the ratio of savings to disposable income. For more details on developments in the household saving rate, see the Special issue "An interpretation of household saving rate developments in Portugal", *Economic Bulletin*, May 2016.

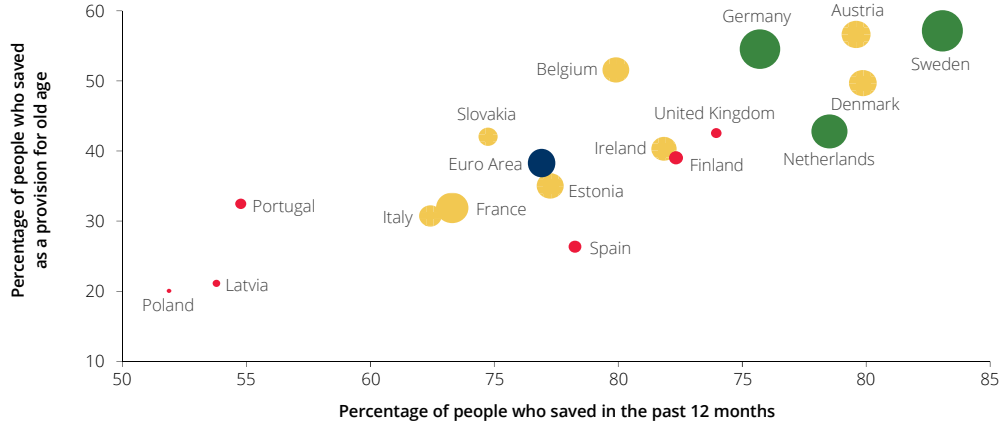
The small number of households who save contributes to the low level of household saving rate

According to the Eurostat's European Union Statistics on Income and Living Conditions (EU-SILC) in Portugal, the share of households reporting difficulties in meeting their regular expenses is high, accounting for 68%[99] of total respondents in 2018. Despite the decline observed since 2013, this figure exceeds the euro area average, which stands at 45%. This seems to be contributing to the low saving rate of Portuguese households at aggregate level. The heterogeneity in household saving capacity should also be highlighted,[100] as reflected in World Bank data, which show that, in 2017, Portugal was among the euro area countries with the lowest share of population that saved in the 12 months before the survey (55%), substantially below the euro area average (67%) (Chart I.3.9).

According to the EU-SILC, a considerable number of households in Portugal are unable to face unexpected financial expenses (approximately 35%, slightly above the euro area average of 31%). Therefore, there is a high share of households vulnerable to unexpected shocks impacting on their income, which may be reflected in constraints on consumption and increasing defaults on debt service payments by indebted households in the event of the materialisation of those shocks. To the extent that savings are described as the main source of emergency funds for households,[101] their increase would contribute to the enhancement of this sector's resilience.

As the average age of the population rises, household savings motivated by the desire to make a provision for old age contribute to easing of financial pressure on households during a stage in the life cycle characterised by a reduction of income flows. World Bank data indicate that, although a small share of the Portuguese population saves, substantial importance is given to savings for this purpose.[102]

Chart I.3.9 • Population that saved money in the past 12 months | Per cent



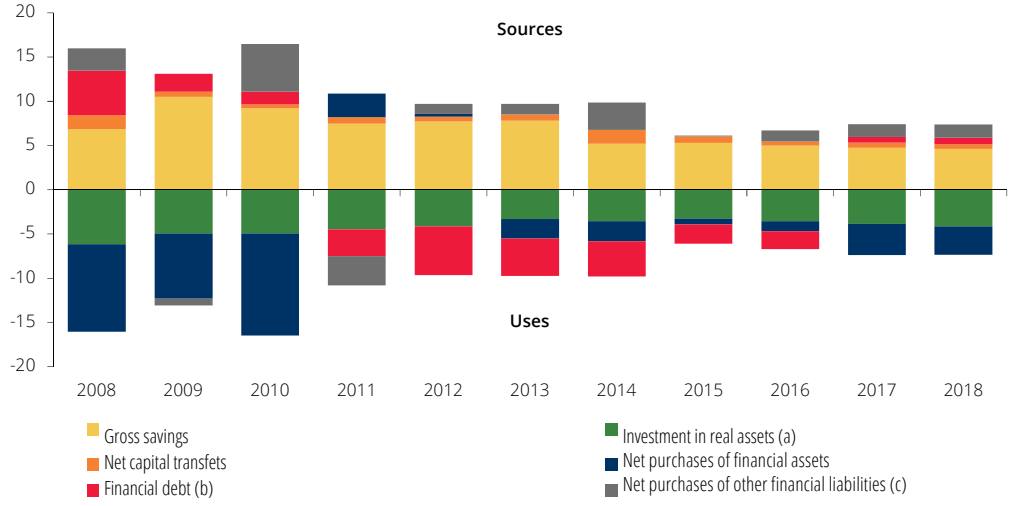
Sources: Eurostat and World Bank (Global Findex Database) | Notes: 2017 figures. The size of the circles corresponds to the household saving rate (defined as the ratio of gross savings to disposable income adjusted for changes in equity of households in pension funds). The green circles represent countries with a saving rate in 2017 of more than 15%, while red circles correspond to those with a rate equal to or below 6%. The euro area as a whole is pictured in blue.

99. This figure corresponds to the sum of the share of households that reported having difficulty, some difficulty or great difficulty in making ends meet.
100. For a more detailed characterisation of Portuguese households' saving pattern, see Box 4 "The financial vulnerability of Portuguese households", *Financial Stability Report*, December 2017. In particular, concerning the 2013 Household Finance and Consumption Survey, a significant share of households with very low or even negative saving is documented, which means that their expenses exceed their income.
101. According to World Bank data (Global Findex Database).
102. It should be noticed, however, that in some countries, where net equity in pension funds is greater, the share of population that saved with that aim may be underestimated by the survey, due to the fact that households may not have considered those amounts as savings. Saving as a provision for old age is also influenced by the generosity of the public pension system, to the extent that a higher replacement rate is associated with lower households' saving for that purpose. For an analysis of the determinants of household saving, see, for instance, "Household Saving Behaviour and Credit Constraints in the Euro Area", *International Journal of Central Banking*, June 2016.

Investment in real assets continued to be the main destination for households' funds

Household investment in real assets reached 4.1% of disposable income in 2018 (up by 0.3 p.p. from the previous year) (Chart I.3.10). This is in line with the increase in investment in housing (13.8%) and in transactions of new dwellings (Section 2.3 Real estate market). Therefore, similarly to previous years, investment in real estate assets continues to stand out among the destinations of households' funds. Against a background of greater momentum in the construction of new dwellings, housing wealth[103] is estimated to have grown by 9.3% in nominal terms and 1.7% in real terms, between 2017 and 2018.

Chart I.3.10 • Sources and uses of funds by households | As a percentage of disposable income



Sources: Banco de Portugal and Statistics Portugal. | Notes: (a) Corresponds to the sum of gross fixed capital formation, changes in inventories, acquisitions less disposals of valuables, and acquisitions less disposals of non-produced non-financial assets. (b) Corresponds to the sum of loans and debt securities. (c) Includes other debits and credits.

Household investment in bank deposits increased markedly in 2018

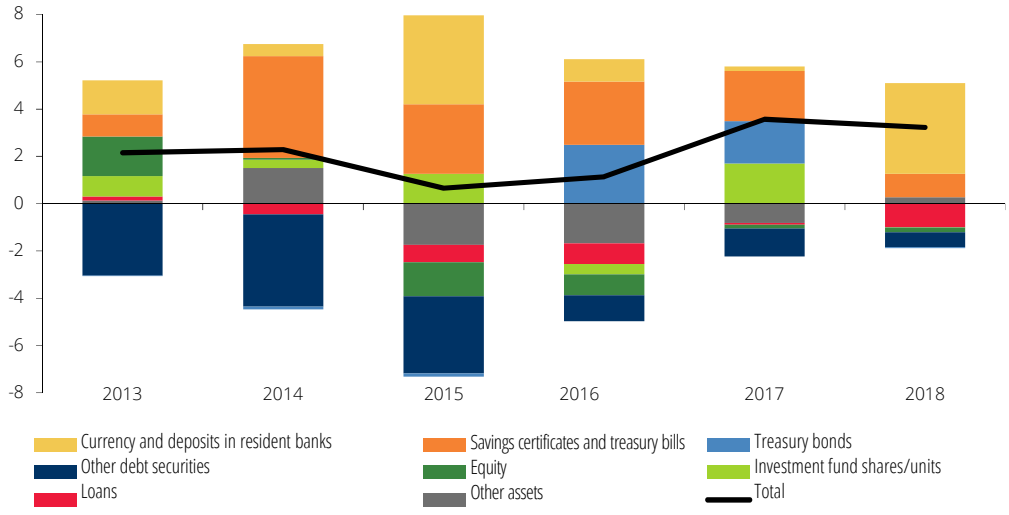
Net investment of households in financial assets decreased slightly, accounting for 3.2% of disposable income in 2018 (3.6% in 2017) (Chart I.3.11). Nevertheless, net transactions in deposits with resident banks considerably outweighed those in 2017, reaching 3.8% of disposable income in the year under review (0.2% in 2017). This seems to be partly associated with the decreasing attractiveness of Portuguese government debt instruments,[104] whose net

103.Annual series on household wealth: 1980-2018, *Economic Bulletin*, May 2018.

104.In October 2017, Treasury Certificates Savings Plus (Portuguese acronym: CTPM) were replaced with the Treasury Certificates Savings Growth (Portuguese acronym: CTPC). Unlike the preceding investments, these have an associated longer maturity and lower remuneration. In turn, in 2016 and 2017 floating rate Treasury bonds (Portuguese acronym: OTRV) were issued three times a year, by contrast to just one issue in 2018 (July). The corresponding interest rate is lower than in previous issues and its maturity was expanded from 5 to 7 years.

transactions accounted for 1.0% of disposable income, the lowest value recorded since 2013. There was also a net disinvestment in other debt securities and loans (-0.6% and -1.0% of disposable income respectively) and virtually nil transactions in investment fund shares/units (compared to 1.7% of disposable income in 2017).

Chart I.3.11 • Households' transactions in financial assets | As a percentage of disposable income



Sources: Banco de Portugal and Statistics Portugal.

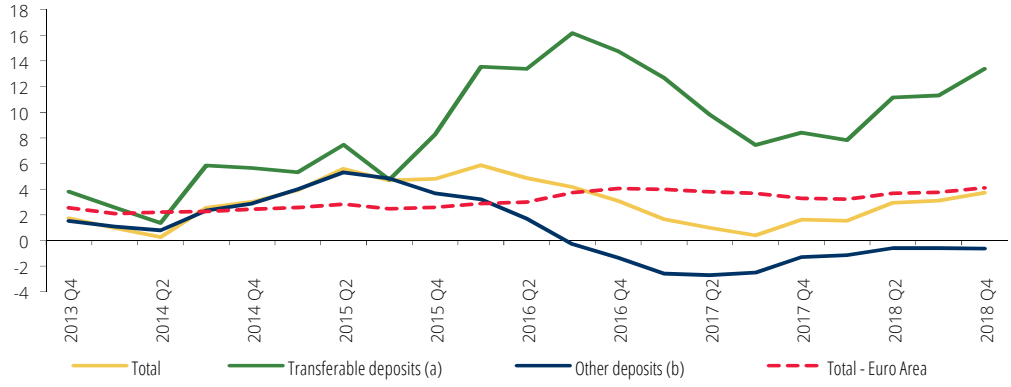
These developments reflect households' preference for more liquid assets without principal repayment risk, despite the low rates of return provided by bank deposits. In Portugal, total deposits posted an annual rate of change of 3.7% at the end of 2018, close to that seen in the euro area (4.1%), an increase of 2.1 p.p. from the end of 2017 (Chart I.3.12).

There was a marked increase in transferable deposits in 2018, whose annual rate of change reached 13.4% at the end of the year. This circumstance was also seen in the euro area, with all countries posting rates of change in transferable deposits equal to or higher than 4.5% at the end of 2018. In Portugal, high growth in this type of deposits may be associated with the continued reduction in the remuneration of new time deposits, whose average interest rate stood at 0.2% in the last quarter of 2018.

Amid a substantial increase in household deposits, new bank deposits with agreed maturity continued to decline in 2018 (-0.9%), but less markedly than in 2017 (when they fell by 10.3%). Among these deposits, new deposits with an agreed maturity of up to one year increased by 3.0%[105], while new deposits with a maturity of more than one year fell by 12.2%, slightly more markedly than in 2017.

105.The rate of change in new bank deposits with an agreed maturity of up to one year had last posted a positive figure in 2011.

Chart I.3.12 • Annual rate of change in household deposits | Per cent



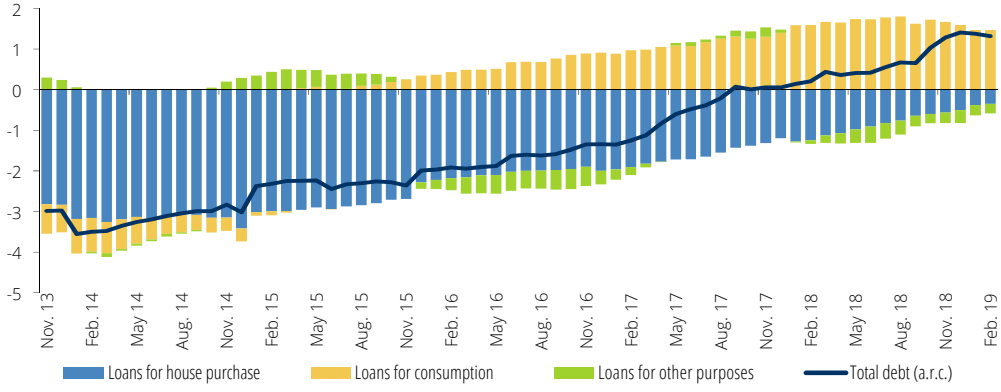
Sources: Banco de Portugal and Eurostat. | Notes: Annual rates of change are obtained from an index based on end-of-quarter positions and quarterly transactions, adjusted for changes not stemming from financial transactions. The annual rate of change the total includes cash, transferable deposits and other deposits. (a) They can be immediately converted into currency, without any kind of significant restriction or penalty. (b) These include deposits with a restriction or penalty associated with their conversion into currency, namely, time deposits, savings deposits, non-marketable certificates of deposit, savings certificates, among others.

Household debt increased in 2018, reflecting high consumption credit growth, amid a decreasing stock of loans for house purchase, although at a slower pace

The annual rate of change in total household debt amounted to 1.4% at the end of 2018, an increase from 2017 figures (0.1%) (Chart I.3.13). In particular, the net flow of household financial debt was positive in 2018, standing at 0.8% of disposable income.

Loans for house purchase, whose annual rate of change has been gradually less negative, and consumer loans, whose annual rate of change stood at 12.3% at the end of 2018, contributed to these developments. In early 2019, the annual rate of change of total household debt declined slightly, particularly reflecting a deceleration in consumer loans, which, since October 2018, have posted positive, albeit decreasing, annual rates of change.

Chart I.3.13 • Contributions to the annual rate of change in total household debt | Per cent and percentage points



Source: Banco de Portugal. | Notes: Total debt includes loans and trade credits granted by the resident financial sector, other resident sectors (excluding households) and non-residents. Annual rates of change (a.r.c.) are calculated on the basis of an index constructed using adjusted transactions, i.e. changes in end-of-period outstanding amounts adjusted for reclassifications, write-offs, price and exchange rate revaluations and, where relevant, for the effect of securitisation and sales. The annual rate of change in debt stems from adjusted transactions associated with housing loans, loans for consumption and other purposes (whose contribution is shown in the chart) as well as adjusted transactions associated with trade credits.

New bank loans for house purchase increased markedly in 2018 as a whole (19.1%), while quarterly flows decelerated in the second half of the year. This trend continued into the first quarter of 2019, with new bank loans for house purchase posting a year on year rate of change of 7.5%,[106] significantly below the level recorded prior to the financial crisis. At the same time, the average interest rate on new loans for house purchase dropped from 1.6% in 2017 as a whole to 1.4% in 2018, remaining at low levels, both in historical terms and compared with other euro area countries.

New personal and car loans contributed to a deceleration in consumer credit in the second half of 2018, and decreased, year on year, in the first quarter of 2019

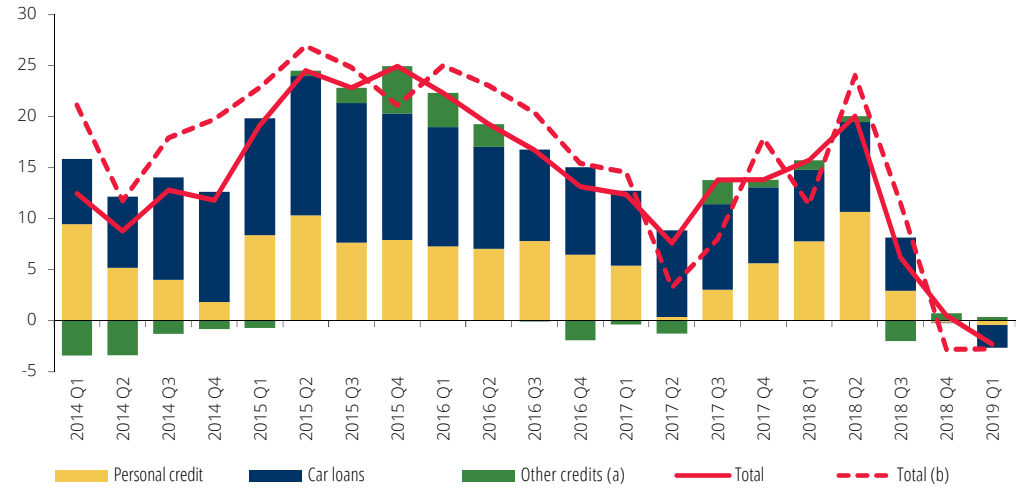
New consumer loans rose by 10.1% in 2018 as a whole, slightly down from 12.0% in 2017. Personal loans grew by 11.8%, up from 8.4% in 2017, mostly reflecting credit with a specific purpose, since non-specific purpose loans decreased in 2018. In turn, car loans grew by 12.0%, below the value recorded in 2017 (20.4%). This deceleration is in line with a slowdown in the sale of vehicles and accompanied the lower growth in consumption of durable goods. At the end of the year, the ratio of new consumer loans to private non-food consumption stood at 6.1% (5.7% in 2017).[107]

However, intra-annual developments were fairly mixed. In the second half of 2018 the main segments in new consumer loans decelerated markedly, with a decrease in personal loans and car loans in the fourth quarter of the year compared with the same period one year earlier (Chart I.3.14). In the first quarter of 2019 there was a 2.3% year on year reduction in new consumer loans, with a decrease across its main segments, most notably car loans.

In 2018 the average maturity and the average amount of new car loans increased,[108] although in a smaller magnitude than in 2017. In turn, the average maturity and average amount of personal loans were close to the levels seen in 2017. The average interest rate on new consumer loans decreased only slightly, from around 7.3% in 2017 to 7.2% in 2018, but remained above the average rate in the euro area, which stayed at 5.6%.[109]

106. This value takes into account quarterly flows of new bank loans for house purchase. The year on year rate of change in these flows has followed a downward path since the second quarter of 2018, when it stood at 28%.
107. This ratio was calculated through the quotient of annual flows of total new consumer loans, excluding amounts for credit cards, credit lines, bank credit accounts and overdraft facilities, and the value, at current prices, of final consumption expenditure of resident households except food.
108. The longer average maturity points to an increase in the number of cars whose value depreciates more rapidly than that of the loan principal. In 2018 the average maturity of these loans was of about 7 years.
109. Information on interest rates only covers loans granted by resident banks.

Chart I.3.14 • Contributions to the year on year rate of change in new consumer loans
| Per cent and percentage points



Source: Banco de Portugal. | Notes: (a) Other credits include credit cards, credit lines, bank credit accounts and overdraft facilities. (b) It only includes loans granted by resident banks.

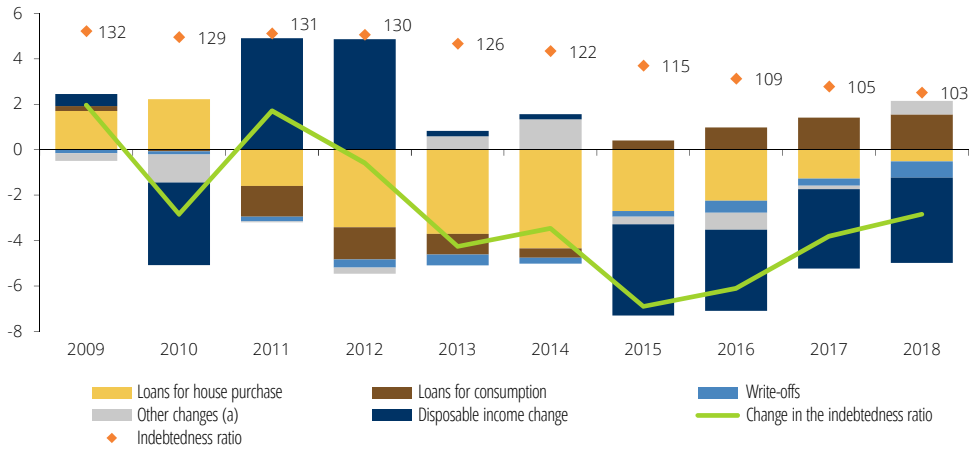
The indebtedness ratio declined in 2018, particularly reflecting nominal disposable income growth

Total household debt decreased to 103% of disposable income at the end of 2018, moving closer to the euro area average, but still exceeding this figure.[110] Similarly to what was seen in 2017, the reduction in this ratio essentially reflected nominal disposable income growth, while nominal debt increased, associated with growth in consumer loans. The negative net flow of loans for house purchase, which is nevertheless less marked than in previous years, and the non-negligible amount of write-offs, also contributed to the reduction in this ratio (Chart I.3.15). Despite the sharp decline seen over the past few years, albeit at a declining pace, household indebtedness ratio remains high, which is a relevant vulnerability to financial stability, as it constrains households' resilience to adverse shocks. The decline in this ratio tends to be slower than in other euro area countries, partly due to the greater share of loans with longer maturities stemming from the importance of loans for house purchase in Portuguese households' debt.[111] In turn, as with countries where a significant share of the stock of loans for house purchase has an underlying floating interest rate, the low interest rate level in the euro area leads to a greater share of instalments being allocated to principal repayment, which has contributed to the decrease in household indebtedness.

110. The comparison with the euro area aggregate was conducted using non-consolidated quarterly figures for total debt, corresponding to the sum of the four quarters of the year.

111. In 2017, 37% of households had a mortgage and/or loan for house purchase, which is high within the euro area, whose average stands at 27%, according to the EU-SILC.

Chart I.3.15 • Developments and contribution to the changes in household total debt
| As a percentage of disposable income



Sources: Banco de Portugal and Statistics Portugal. | Notes: (a) Corresponds to write-offs in the balance sheet of resident monetary financial institutions. (b) 'Other changes' include loans for other purposes (other than house purchase or consumption), trade credits, accrued interest (regardless of the type of credit) and other changes in volume and in price.

The household leverage ratio[112] stabilised at 34% in 2018, while the ratio considering only liquid assets,[113] which are more easily mobilised in the event of the necessity to repay debt, decreased by around 1 p.p., standing at 62%. In both cases, these figures continue to be above the euro area average.

Households' responsibilities associated with debt servicing continued to benefit from the low interest rate environment, given that a large share of outstanding loans for house purchase was granted at a floating rate. While in 2017 the weight of new bank loans for house purchase with initial rate fixation period of up to one year decreased,[114] in 2018 it rose by around 5 p.p., to 65%. Despite this increase, which makes households more vulnerable to changes in interest rates in the short term, the weight of these loans in the total is smaller than in the past (the average weight between 2003 and 2016 was 90%).

3.2.2 Non-financial corporations

Net borrowing of NFCs, as a percentage of GDP, deteriorated in 2018, reflecting a decrease in the sector's savings rate and a slight increase in its investment rate

In 2018 net borrowing of NFCs stood at 2.0% of GDP, up by 1.2 p.p. from the previous year. These developments mainly reflected a decrease in the savings rate, to 9.4% of GDP (10.6% of GDP in 2017), against a background in which investment rose slightly compared with the previous

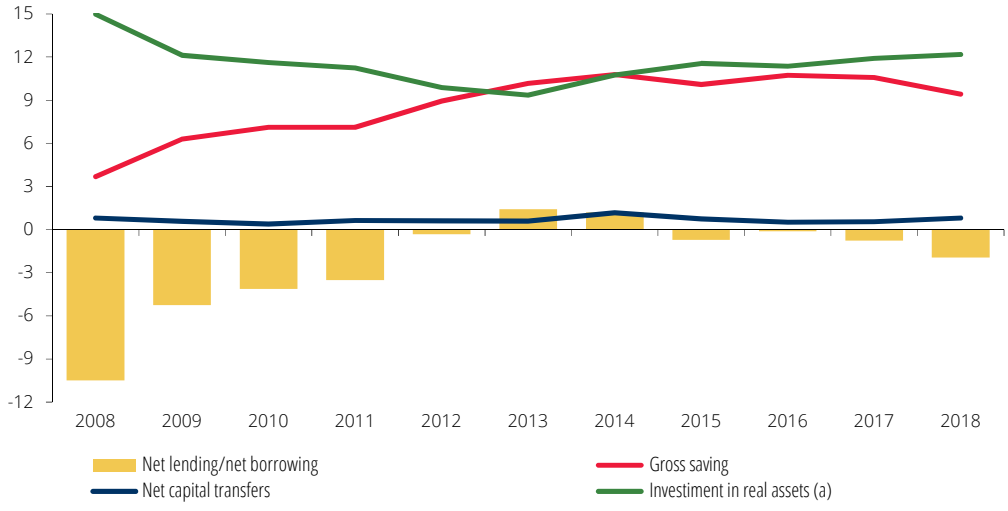
112. The leverage ratio corresponds to the quotient of households' financial debt and total financial assets.
113. The assets considered as liquid were currency and deposits, debt securities, listed shares and investment fund shares/units.
114. These loans are commonly used as a benchmark for floating-rate loans.

year (to 12.2% of GDP) (Chart I.3.16). The decrease in the NFC savings rate was mainly due to an increase in distributed income of corporations (in net terms) and, to a lesser extent, a drop in gross operating surplus. The deterioration in net borrowing of Portuguese NFCs led to an increase in the gap between Portugal and the euro area average, although a slight decline was also observed in the net lending of NFCs in the euro area in 2018 (Chart I.3.17).

Distributed income of Portuguese firms rose following a relative stabilisation since the conclusion of the Economic and Financial Assistance Programme (EFAP). Retained earnings during this period contributed to the increase in the NFC savings rate to historically high levels, although remaining at relatively low levels by European standards (Chart I.3.18). Developments in 2018 are in contrast to the trend seen in the recent past. Indeed, as a percentage of net entrepreneurial income, distributed income of non-financial corporations rose by 4 p.p. in 2018, to 40%, i.e. its highest level since 2012. In most euro area countries, developments were similar, albeit less pronounced (Chart I.3.19).

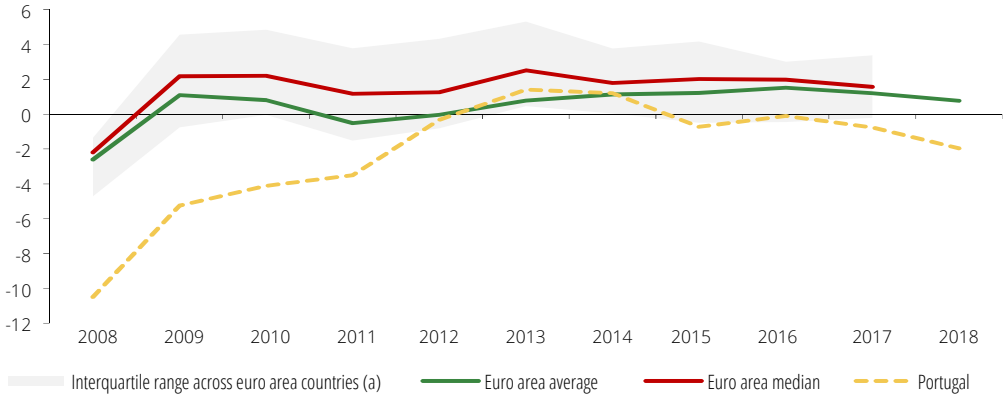
In 2018 NFC investment in real assets was mostly funded with sector's savings and, to a lesser extent, an increase in financial liabilities, most notably the net issuance of shares and other equity. As in previous years, financial assets continued to post positive changes, with a notable increase in currency and bank deposits (Chart I.3.20).

Chart I.3.16 • Savings, investment and net lending/net borrowing of NFCs
| As a percentage of GDP



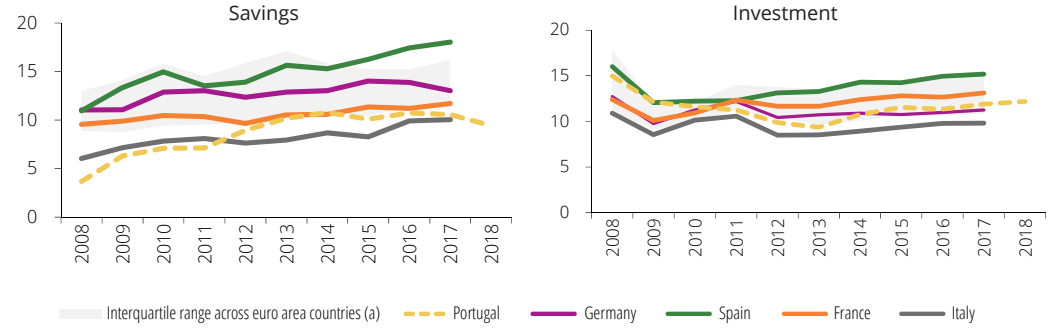
Source: Statistics Portugal (and Banco de Portugal calculations). | Note: (a) Corresponds to the sum of gross fixed capital formation, changes in inventories, acquisitions less disposals of valuables and acquisitions less disposals of non-produced non-financial assets.

Chart I.3.17 • Net lending/net borrowing of NFCs | As a percentage of GDP



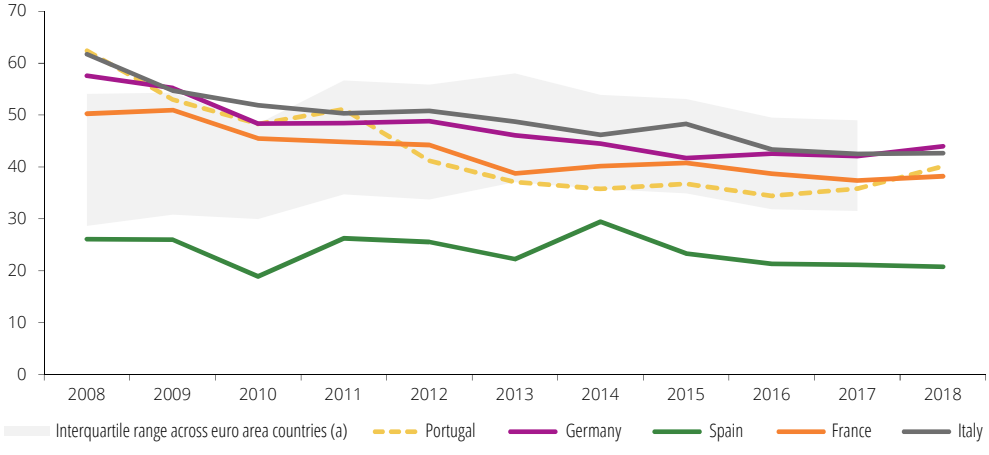
Source: Eurostat (and Banco de Portugal calculations). | Note: (a) The interquartile range was obtained from the distribution of net lending/net borrowing across euro area countries, excluding Malta, for which data are not available.

Chart I.3.18 • Savings and investment of NFCs | As a percentage of GDP



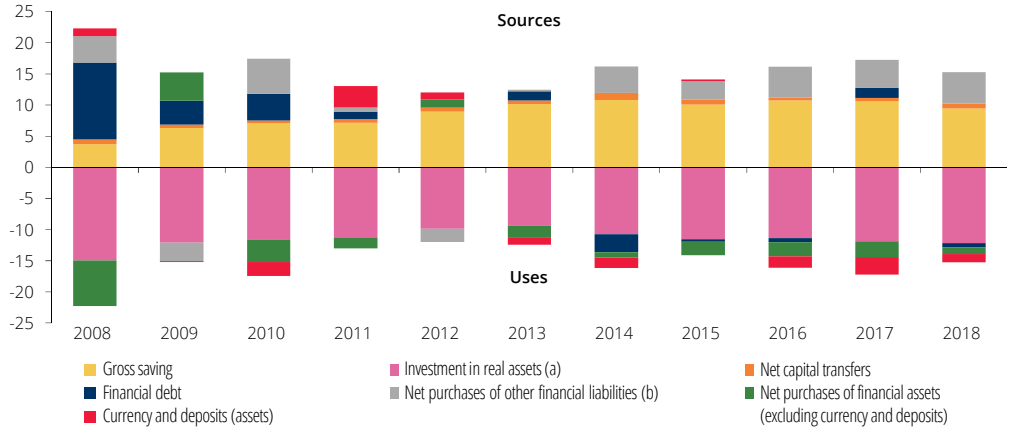
Source: Eurostat (and Banco de Portugal calculations). | Note: (a) The interquartile range was obtained from the distribution of net lending/net borrowing across euro area countries, excluding Malta, for which data are not available.

Chart I.3.19 • NFC distributed income rate | As a percentage of net entrepreneurial income



Source: Eurostat (and Banco de Portugal calculations). | Notes: (a) Similarly to the previous chart, the interquartile range was obtained from the distribution of the distributed income rate across euro area countries, excluding Malta, for which data are not available. The NFC distributed income rate corresponds to the ratio of distributed income of corporations to net entrepreneurial income. In turn, net entrepreneurial income corresponds to the balance of primary income added to uses for distributed income of corporations and reinvested earnings of foreign direct investment firms (entrepreneurial income) net of taxes on income and wealth.

Chart I.3.20 • Sources and uses of funds by NFCs I As a percentage of GDP



Sources: Banco de Portugal and Statistics Portugal. | Notes: Consolidated figures. (a) Corresponds to the sum of gross fixed capital formation, changes in inventories, acquisitions less disposals of valuables, and acquisitions less disposals of non-produced non-financial assets. (b) Other financial liabilities include liabilities associated with all financial instruments, on the basis of the National Financial Accounts, excluding loans and debt securities (financial debt). It also includes the statistical discrepancy between net lending/net borrowing computed within the scope of the capital and financial account.

In 2018 corporate investment continued to benefit from favourable economic growth prospects

In 2018 NFC investment in real assets grew by 6% from the previous year, in nominal terms, reaching the highest value since 2008. The recovery in corporate investment continued to benefit from an overall positive economic environment and favourable financing conditions, amid capacity utilisation rates close to their average prior to the international financial crisis. Although Banco de Portugal's projections[115] point to a slowdown in economic growth during the period 2019-21, GFCF is projected to grow more than in 2018, with a major contribution from the corporate component. However, investment decisions of the Portuguese firms may be significantly constrained in the near future by geopolitical uncertainty, particularly about Brexit, and international trade tensions. Recent qualitative surveys show that entrepreneurs have assessed their prospects less favourably, to a large extent due to increased uncertainty.[116] According to Statistics Portugal's *Investment Survey*,[117] the share of enterprises reporting investment constraints rose to 33.4% in 2018 (30.6% in 2017). These firms reported that the deterioration in sales prospects was the main factor limiting investment, although the percentage of respondents signaling it remained well below the levels seen prior to the financial crisis. It should be noted that the share of firms identifying difficulties in obtaining bank credit as the main factor limiting investment remained relatively low (only 8.8% in 2018).

115. For more details, see *Economic Bulletin*, March 2019.

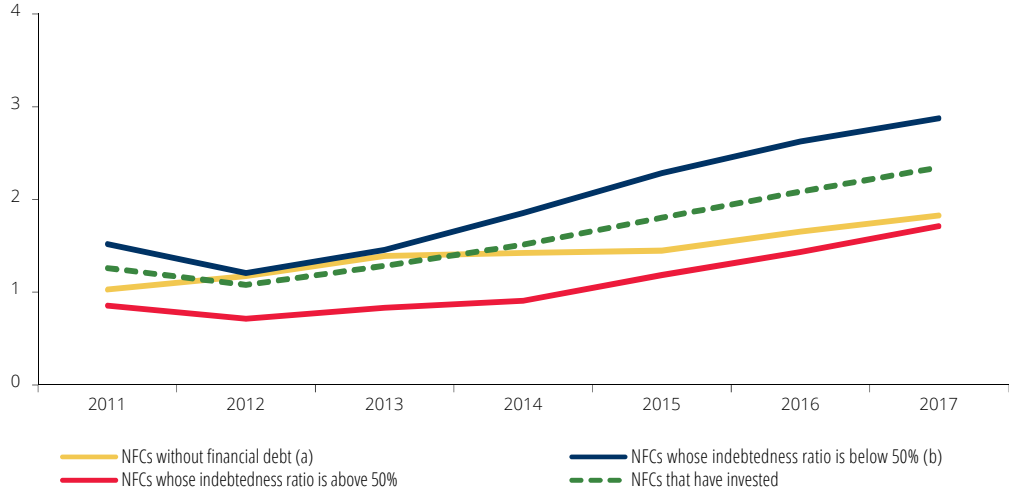
116. The Portuguese firms recently surveyed by the European Investment Bank reported that the main obstacle to investment in 2018 was uncertainty about the future. For more details on this survey, see: https://www.eib.org/attachments/efs/eibis_2018_portugal_en.pdf.

117. For more details on the *Investment Survey*, see: https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=315404122&DESTAQUESmodo=2&xlang=en.

Firms with lower indebtedness ratios have recorded higher investment rates

The increase in corporate investment in 2017 (the last year for which IES data[118] is available) was sustained by enterprises with lower indebtedness ratios in 2016, thus continuing the trend observed in previous years. Less leveraged firms, whose indebtedness ratio (financial debt as a percentage of assets) is below 50%, have systematically posted a higher median (and average) investment rate than that of other firms (Chart I.3.21). The financial strain associated with new investment was reflected in an increase in these firms' financial debt. Nevertheless, their indebtedness ratios declined somewhat, and remained below the median for firms as a whole. Bank loans have been a major source of funding for the firms that have invested more over the past few years. This was particularly associated with small and medium-sized enterprises (SMEs), which, in 2017, had higher investment rates than large enterprises and which typically rely more on bank loans as a source of financing. Over the past few years, SMEs have managed to reconcile increased investment and borrowing with a boost in capitalisation. Finally, it should also be noted that the median investment rate for more leveraged firms (with an indebtedness ratio of more than 50%) has also increased and moved closer to the median investment rate of firms with no financial debt.

Chart I.3.21 • Median investment rate of firms that have invested, by financial debt ratio in the previous year | As a percentage of total assets



Source: Banco de Portugal. | Notes: (a) Includes firms that in a given year (t) and the previous year (t-1) had no financial debt. (b) Includes firms with no financial debt in the previous year (t-1) that recorded financial debt in the following year (in t). The investment rate results from the ratio of investment to total assets of firms that, on any given year, have invested more. Investment was estimated based on a proxy of the gross fixed capital formation (GFCF) of each firm. The indebtedness ratio results from each firm's ratio of financial debt to total assets.

118. IES – Simplified Corporate Information.

The path of net repayment of NFC financial debt, interrupted in 2017, was resumed in 2018

In 2018 the path of net repayment of NFC financial debt[119] (which had started in 2014) was resumed (0.7% of GDP), after having been interrupted in 2017.[120] On the one hand, this reflected the repayment of financial debt to households (0.7% of GDP), which played a major role in corporate funding during the financial crisis. On the other hand, there was also a repayment of financial debt to non-residents (0.4% of GDP), associated with loans granted by shareholders and intra-group firms. Finally, the net flow of credit granted by the resident financial system, most notably the banking sector, was positive in 2018 (0.4% of GDP), for the first time since 2012.

The increase in the recourse of NFCs to credit granted by the resident banking system in 2018 varied by enterprise size. SMEs posted a positive annual rate of change, above its 2017 figure, and mostly boosted by growth in credit granted to microenterprises, while large enterprises continued to record a negative annual rate of change, although accelerating from the previous year (Chart I.2.22). The annual rate of change accelerated across most sectors of activity, with a noteworthy boost to credit granted to the construction and real estate activities sector, whose annual rate of change moved from negative into positive territory and, conversely, developments in credit to trade, accommodation and food services, whose annual rate of change decelerated (from 2.3% at the end of 2017 to 1.1% at the end of 2018). The annual rate of change of credit granted to manufacturing and mining and quarrying was positive, standing slightly above that seen at the end of 2017.

Higher recourse of NFCs to bank loans in 2018 was also reflected in the increase in gross flows of new loans, mostly associated with operations with an agreed maturity of over one year. In line with these developments, according to the Portuguese banks participating in the *Bank Lending Survey*,[121] in 2018 NFCs demand for loans increased further, particularly long-term loans, mostly driven by the need to fund investment.

The gross flow of new bank loans increased in the wake of the marked fall recorded between 2013 and 2017. However, this decrease was greatly influenced by the substantial increase in the average maturity of new loans during that period (Chart I.3.23), which seems to be related to an upturn in corporate investment after 2013. The weight of new loans with an agreed maturity of over one year rose from approximately 18% in 2013 to 43% in 2018. In this respect, it should be noted that the annualised gross flow of new bank loans[122] was relatively stable between 2013 and 2017, and increased markedly in 2018 (Chart I.3.24).

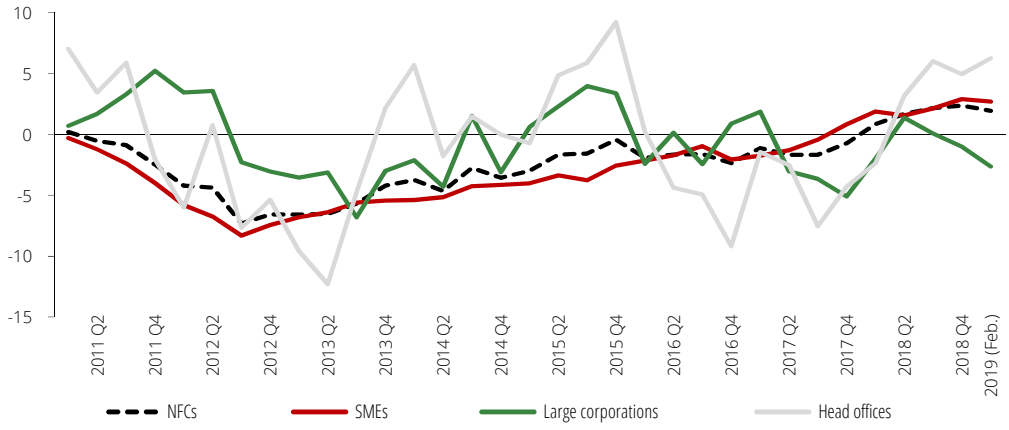
119. NFC financial debt corresponds to the sum of debt securities and loans.

120. The net flow of loans in 2017 was significantly influenced by a set of intra-group financing transactions of a large enterprise in the electricity, gas and water sector. Excluding these transactions, there would also have been a repayment of NFC financial debt in 2017.

121. For more details on the *Bank Lending Survey*, see: https://www.bportugal.pt/en/publications/banco-de-portugal/all/114.

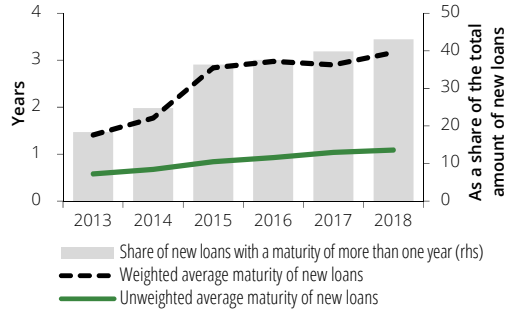
122. The annualised gross flow for each new loan was calculated by multiplying, for loans with a maturity of less than one year, the loan amount by its annualised maturity. The annualised loan maturity was calculated as the ratio of the number of days of the loan to 365. As such, for a €1,000 loan with a 90-day maturity, the annualised gross flow is 246.58 (1000*(90/365)). In the case of a €1,000 loan with a 2-year maturity, the annualised gross flow is €1,000.

Chart I.3.22 • Annual rate of change in bank credit to NFCs | Per cent



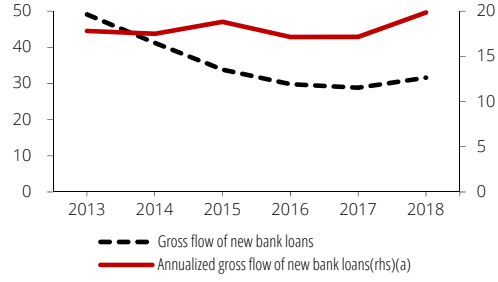
Source: Banco de Portugal. | Notes: The annual rate of change in credit is calculated on the basis of the ratio of end-of-month outstanding amounts to monthly transactions. Monthly transactions are calculated on the basis of the differences between end-of-month outstanding amounts adjusted for reclassifications, write-offs, sales of loan portfolios, price and exchange rate revaluations and for any other changes that are not due to financial transactions.

Chart I.3.23 • Average maturity of new bank loans to NFCs



Source: Banco de Portugal.

Chart I.3.24 • Annualised gross flow of new bank loans to NFCs | EUR billions



Source: Banco de Portugal. | Notes: (a) The annualised gross flow of each loan was calculated by multiplying the loan amount, for loans with a maturity of less than one year, by its annualised maturity. The annualised loan maturity results from the quotient of the number of days in a loan and 365.

The indebtedness ratio of NFCs, as a percentage of GDP, continued on a downward path in 2018, mostly reflecting GDP growth

The indebtedness ratio[123] of NFCs, as a percentage of GDP, decreased by around 5.0 p.p. in 2018, reaching its lowest level since 2005 (96% of GDP). The decline in the sector's indebtedness ratio reflected GDP growth in nominal terms (-3.4 p.p. contribution) and, to a lesser extent, the write-off of bank loans (-2.0 p.p. contribution).

The reduction in the indebtedness ratio of NFCs between 2011 and 2014 was closely associated with the net repayment of bank credit, although it was partly offset by the net flow of credit granted by non-residents and other resident non-banking financial institutions. Nevertheless, the

123. Total debt of NFCs includes debt securities, loans and trade credits.

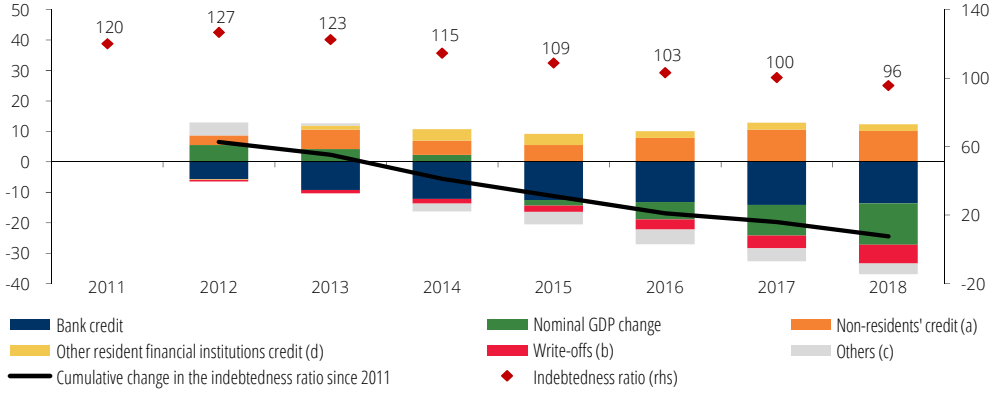
reduction in this ratio since 2016 has mostly benefited from nominal GDP growth and, to a lesser extent, the write-off of bank loans (Chart I.3.25).

In parallel with the reduction in the indebtedness ratio of NFCs, there has been an increase in sector's liquidity levels (measured as the balance of currency and deposits) which, at the end of 2018, reached a new historical peak (23% of GDP). By sector of activity, and taking 2012-17 as the reference period (the last year for which IES data[124] are available), we note that this increase was broadly based across most sectors of activity. In particular, there was a more substantial increase in real estate activities and accommodation and food services. This liquidity increase was more pronounced in smaller enterprises (Chart I.3.26).

The build up of liquidity buffers by NFCs has been generalised across in several euro area countries, possibly for precautionary reasons, in a context where the opportunity cost of holding liquid assets is very low. A possible lack of investment opportunities with an adequate return may also, at least in the short run,[125] help explain developments in the stock of liquidity. According to the latest data from Statistics Portugal's *Investment Survey*, from the set of firms reporting investment constraints, the share of firms identifying return in investments as the main factor limiting investment has remained at historically high levels since 2014, at around 20%. By sector of activity, this factor has affected relatively more the accommodation and food services and manufacturing sectors.

Between 2013 and 2016, liquidity increased particularly in less indebted firms. Despite the significant heterogeneity across firms, with less indebted firms posting, on average, higher liquidity levels than more indebted firms, between 2016 and 2017 liquidity increased mostly for more indebted firms. The increase in NFCs' liquidity, in parallel with the reduction in their indebtedness, signals a decrease in the level of risk associated with the NFC sector (Chart I.3.27).

Chart I.3.25 • Contributions to the cumulative change in the indebtedness ratio of NFCs since 2011 | As a percentage of GDP

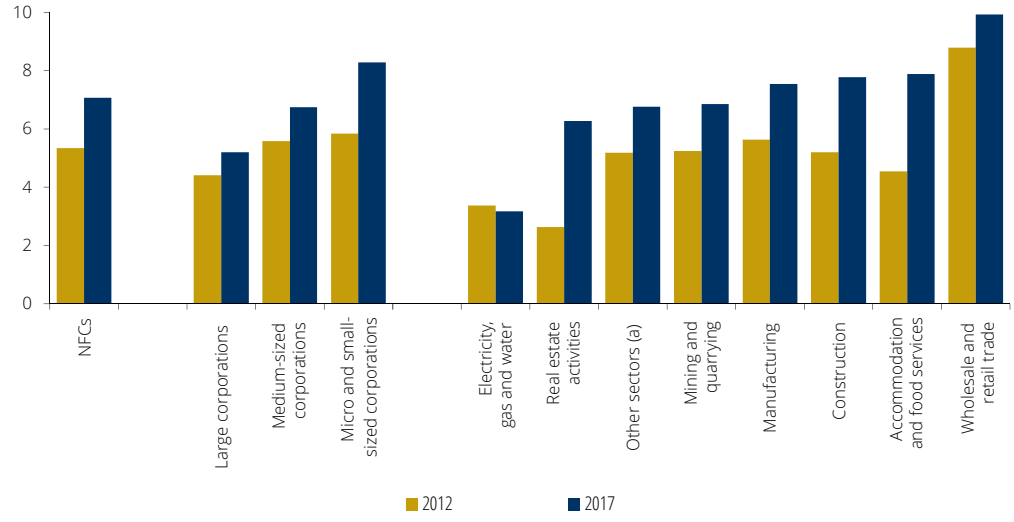


Sources: Banco de Portugal and Statistics Portugal. | Notes: Consolidated figures. (a) Non-residents' credit includes liabilities on account of loans and debt securities held by non-residents. (b) Corresponds to credits written off against assets in the balance sheet of resident monetary financial institutions. (c) Includes household loans, general government loans, trade credits and advances and other changes in volume and value. (d) Includes loans granted by resident non-banking financial institutions.

124. IES – Simplified Corporate Information.

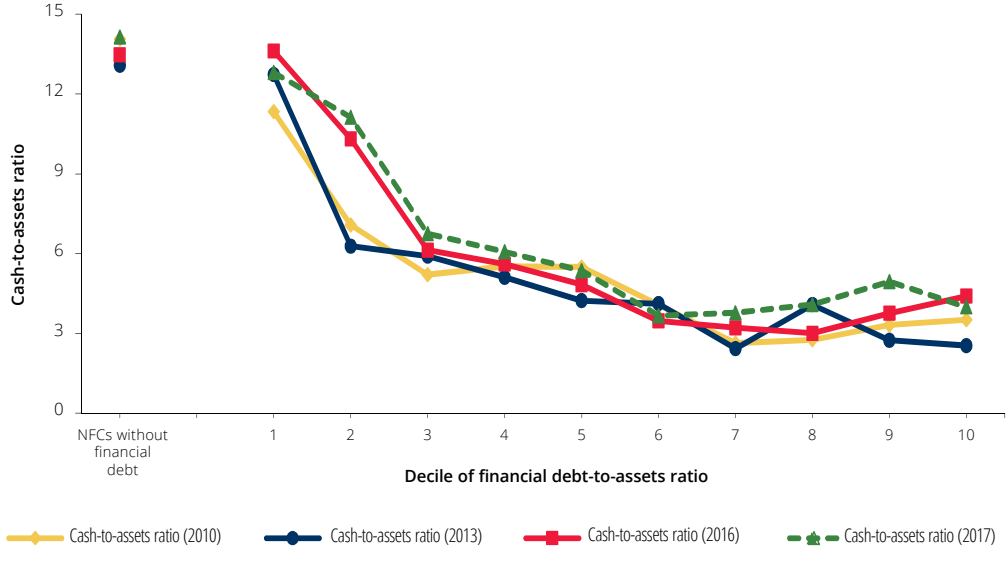
125. In economic literature, the existence of growth opportunities is correlated to a lower distribution of dividends (Fama and French, 2001). Conversely, the lack of investment opportunities should lead to an increase in profit distribution by firms in the future. In turn, higher profit distribution will lead to a reduction in the liquidity levels of firms.

Chart I.3.26 • Ratio of available cash to total assets | Per cent



Source: Banco de Portugal. | Notes: Available cash includes liquid financial assets of the firm (currency and bank deposits). (a) 'Other sectors' includes all sectors of economic activity that are not individually displayed in the chart.

Chart I.3.27 • NFCs' available cash, by decile of the financial debt ratio | As a percentage of total assets



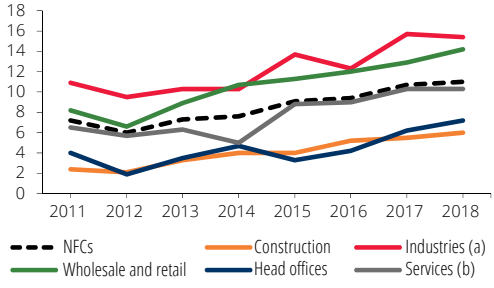
Source: Banco de Portugal. | Notes: The cash-to-assets ratio is defined as the ratio of the firm's liquid financial assets (currency and bank deposits) to total assets. The ratio of financial debt to assets is defined as the ratio of the firm's financial debt to total assets. Decile 1 includes the less indebted firms (with the lowest ratio of financial debt to assets), while decile 10 includes the most indebted firms.

In 2018 there was a further boost in capitalisation and a reduction in financial debt of NFCs

In 2018 the financial situation of Portuguese NFCs improved further. The average financing cost of firms[126] continued to decrease (from 3.0% in 2017 to 2.8% in 2018) while the profitability ratio[127] remained on an upward path (from 10.7% in 2017 to 11.0% in 2018), amid increasing economic activity and historically low interest rates. Accordingly, the interest coverage ratio[128] reached a new historical peak at the end of 2018 (8.3, after 7.0 at the end of 2017) (Charts I.3.28 and I.3.29).

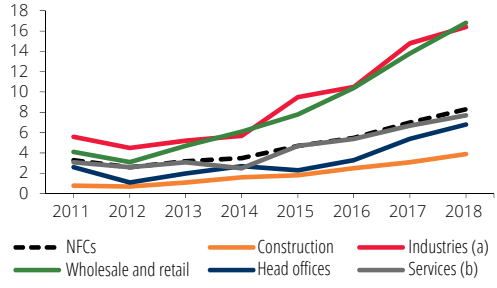
The financing structure of Portuguese firms in 2018 continued to favour equity to the detriment of debt, despite the increase in distributed income and the greater buoyancy of bank credit. Indeed, the equity ratio, defined as the ratio of equity to assets, rose to 38% at the end of 2018, which corresponds to a peak since 2006. The improvement in the financial situation of firms was broadly based across sectors of activity and enterprise sizes.[129] It should be noted that since 2012 the leverage ratio of Portuguese firms, assessed by the weight of financial debt in the financing structure (equity plus financial debt), has progressively narrowed. Underlying these developments is, however, considerable heterogeneity across enterprise sizes.[130] The leverage ratio of large enterprises was stable between 2012 and 2017, followed by a marked decrease in 2018, while the leverage ratio of SMEs has progressively decreased since 2012 (Chart I.3.30). NFC leveraging in Portugal is still well above that seen in most euro area countries (Chart I.3.31).

Chart I.3.28 • Profitability ratio of NFCs | Per cent



Source: Banco de Portugal. | Notes: The profitability ratio is calculated as the ratio of EBITDA (earnings before interest, taxes, depreciation and amortisation) to equity plus obtained funding. (a) Industry includes the manufacturing and the quarrying and mining sectors. (b) Services includes sections I, J, L, M (excluding head offices), N, P, Q, R and S of NACE - Rev. 3.

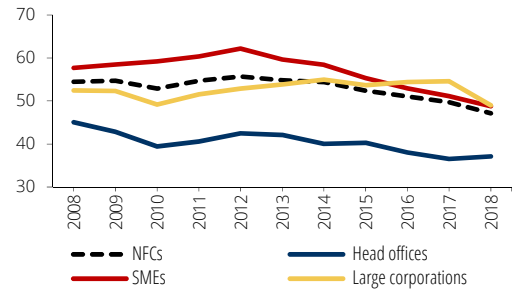
Chart I.3.29 • Interest coverage ratio of NFCs I In number of times



Source: Banco de Portugal. | Notes: The interest coverage ratio is calculated as the ratio of EBITDA (earnings before interest, taxes, depreciation and amortisation) to interest expenses. (a) Industry includes the manufacturing and the quarrying and mining sectors. (b) Services includes sections I, J, L, M (excluding head offices), N, P, Q, R and S of NACE - Rev. 3.

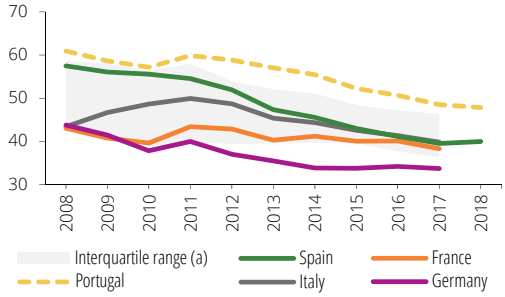
126. The average financing cost is defined as the ratio of interest expenses to obtained funding. Obtained funding includes loans and debt securities issued.
127. The profitability ratio is calculated as the ratio of EBITDA (earnings before interest, taxes, depreciation and amortisation) to equity plus obtained funding. Obtained funding includes loans from financial institutions, subsidiaries and shareholders, and debt securities issued.
128. The interest coverage ratio is calculated as the ratio of EBITDA (earnings before interest, taxes, depreciation and amortisation) to interest expenses.
129. For more details, see Chapter G (Statistics on non-financial corporations from the Central Balance Sheet Database) of Banco de Portugal's *Statistical Bulletin*.
130. For more details on developments in NFC deleveraging between 2010 and 2016, by size and sector of activity, see Box 2 "Deleveraging of Portuguese firms" in the Special issue, *Economic Bulletin*, May 2018.

Chart I.3.30 • Leverage ratio of NFCs, by enterprise size | Per cent



Source: Banco de Portugal. | Notes: The leverage ratio was defined as the quotient of financing obtained and the sum of equity and financing obtained. Financing obtained includes loans and debt securities issued. Equity and financing obtained are measured at book value. Figures are calculated on the basis of the statistics on non-financial corporations from the Central Balance Sheet Database (based on IES information).

Chart I.3.31 • NFC leveraging in the euro area | Per cent



Source: Eurostat (and Banco de Portugal calculations). | Notes: (a) The interquartile range was calculated on the basis of the distribution of leverage ratios of NFCs in euro area countries. The leverage ratio was defined as the quotient of financial debt and the sum of equity and financial debt. The value of financial debt corresponds to the stock of loans and debt securities, while the value of equity corresponds to the stock of shares and other equity (liabilities) of NFCs. Figures are calculated on the basis of the National Financial Accounts. Quoted financial instruments, according to the National Account methodology, are measured at market value.

Reducing the vulnerability of the NFCs to adverse shocks hinges on the continuation of the sector's deleveraging and enhancement of capitalisation

Over the past few years, Portuguese firms have benefited from a favourable environment, particularly the high buoyancy of domestic demand and robust external demand growth. The reduction in indebtedness and the decline in financing costs have contributed to substantially dampen the debt servicing burden of NFCs. Against a background of expected prolongation of the low interest rate environment, the main risk factors for the sector are associated with the possible escalation of trade tensions and the expectation of a slowdown in economic activity in Portugal and its main trade partners.

In periods of economic recession, more indebted firms tend to reduce investment and employment to a larger extent than those less indebted,[131] thus contributing to deeper recessions.[132] Strengthening the NFC sector's resilience to adverse shocks requires continuing the deleveraging process and increasing the sector's capitalisation.

131. In this respect, see the *Financial Stability Report*, Issue No 44, Bank of England, November 2018.

132. Jordà et al. analyse the effect of leveraging on financial crisis and show that high indebtedness is associated with lower economic growth and investment.

4 Banking system

In 2018 the profitability of the banking system was positive for the second consecutive year. This improvement was justified by lower credit impairment losses and a higher recurring operating result, mitigated by a decrease in income from financial operations. At the same time, operational efficiency continued to improve. Non-performing loans (NPLs) declined significantly and impairment coverage ratios increased again. The concentration of exposures in certain asset classes, in particular public debt securities and real estate, remained high. The liquidity position improved, remaining at comfortable levels. The total capital ratio stabilised in 2018, benefiting from the issuance of Additional Tier 1 (AT 1) and Tier 2 instruments.

Despite favourable developments in recent years, the Portuguese banking system continues to face a number of challenges, driven by a slowdown in economic activity and a continuation of the low interest rate environment. First, the low volumes of new credit and interest margin in new business hampers net interest income growth. Second, the need to meet MREL requirements may justify the need to issue highly subordinated debt instruments, increasing the vulnerability of the banking system to changes in risk perception in international financial markets. Third, the convergence of asset quality indicators towards international standards requires the further reduction of the stock of non-performing loans and, in certain cases, the recording of impairments and/or recognition of losses from the disposal of these assets. Finally, there are still challenges related to improving operational efficiency, in particular keeping the downsizing of operating cost structures and the investment in technology infrastructures under the current paradigm of digitalisation of financial services.

The recent adoption of IFRS 9 will likely result in a faster recognition of impairment losses in the context of a slowdown in the economic activity. Also in this regard, the implementation of the addendum to the ECB guidance on provisioning of non-performing loans[133] and the introduction of the Regulation (EU) No 575/2013 (Capital Requirements Regulation) create a significant incentive for recognising more promptly impairment losses in credit agreements which become non-performing.

Against this background, Portuguese institutions should promote the adoption of prudent profit allocation, particularly with regard to dividend distribution. In addition, the efforts to improve efficiency by reducing operational costs must not hinder the adoption of suitable policies for controlling the risks inherent to banking activity. In particular, institutions must ensure suitable assessment and control not only of the financial risks, but also operational risk, namely in regard to combating money-laundering and terrorist financing, and the mitigation of cyber risk.

133. For more information on the addendum to the ECB guidance on provisioning of non-performing loans see: https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.npl_addendum_201803.en.pdf.

4.1 Profitability

Despite the decrease in income from financial operations, profitability has increased significantly in 2018, supported by the reduction in provisions and impairments

In 2018 the profitability of the Portuguese banking system remained positive for the second consecutive year (Table I.4.1). In annual terms, there was a significant increase in the return on assets (ROA), which stood at 0.66% (0.31% in 2017), and return on equity (ROE),[134] which was around 7% (3% in 2017). This improvement was mainly determined by a significant reduction in provisions and impairments and, to a lesser extent, by improving recurring operating result, only partially offset by a reduction in income from financial operations and other income. For the aggregate of institutions with significant international activity,[135] profitability in 2018 also reflected a positive contribution from this activity.

Table I.4.1 • Banking system's statement of profit or loss

	EUR million			In percentage of average assets			Contributes to change in ROA (pp)
	2016	2017	2018	2016	2017	2018	2018
1. Net interest income	5,886	6,109	6,292	1.48	1.59	1.64	0.05
2. Income from services and commissions (net)	2,714	2,855	2,943	0.68	0.74	0.77	0.02
3. Income from financial operations	791	840	10	0.20	0.22	0.00	-0.22
4. Other operating income	87	1,001	52	0.02	0.26	0.01	-0.25
5. Operational costs	-5,628	-5,707	-5,600	-1.41	-1.48	-1.46	0.03
6. Provisions and impairments	-6,791	-4,255	-1,803	-1.70	-1.11	-0.47	0.64
7. Other results	216	260	569	0.05	0.07	0.15	0.08
Profit or loss before tax and minority interest	-2,340	1,184	2,512	-0.59	0.31	0.66	0.35
Memorandum items:							
Recurring operating result [=1+2-5]	2,972	3,256	3,635	0.75	0.85	0.95	0.10
Total operating income [=1+2+3+4]	9,478	10,804	9,298	2.38	2.81	2.43	-0.39
Impairment on credit	-4,700	-2,464	-1,045	-1.18	-0.64	-0.27	0.37
Profit or loss for the year	-1,590	-228	1,252	-0.40	-0.06	0.33	0.38
Average of total assets	398,469	384,587	382,753				0.00

Source: Banco de Portugal. | Note: Return on assets (ROA) is computed using Profit or Losses before taxes, as percentage of average assets.

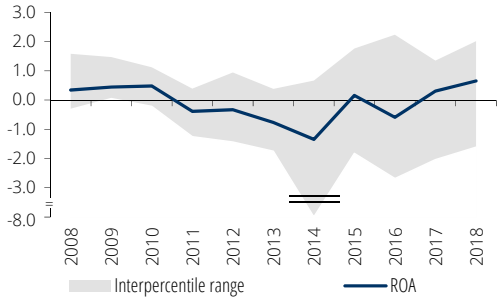
134. Return on assets (ROA) and return on equity (ROE) correspond to the ratios between annualised earnings before tax and average assets and average equity respectively.

135. International activity is deemed significant when the non-domestic share of the total exposure is above 10%.

Although the increase in profitability has been broadly based across the different institutions, there was an increase in heterogeneity (Chart I.4.1). This trend is partly explained by the fact that the institutions are at different phases of adjustment in relation to restructuring plans and plans to reduce non-performing assets.

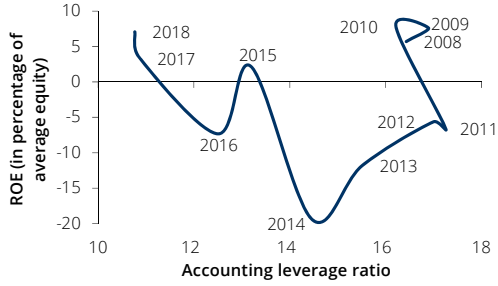
In 2018, the profitability of the Portuguese banking system was higher than in 2008, in a context of lower leverage (10.8 compared to 16.4 in 2008).[136] In fact, deleveraging in the Portuguese banking system in the period 2011-14 took place in a context of negative and decreasing ROE, with a profitability recovery process initiated in 2014 without jeopardising the decrease in leverage (Chart I.4.2). However, the positive income from the last two years is still below the total accumulated losses in the post-financial crisis period.

Chart I.4.1 • Return on assets | Percentage of average assets



Source: Banco de Portugal. | Notes: Return is measured by profit or loss before tax. The interpercentile range was obtained by the difference between the 95th and 5th percentile of the indicator's asset-weighted distribution.

Chart I.4.2 • ROE and accounting leverage ratio



Source: Banco de Portugal. | Note: The leverage ratio corresponds to the ratio of average total assets to average equity.

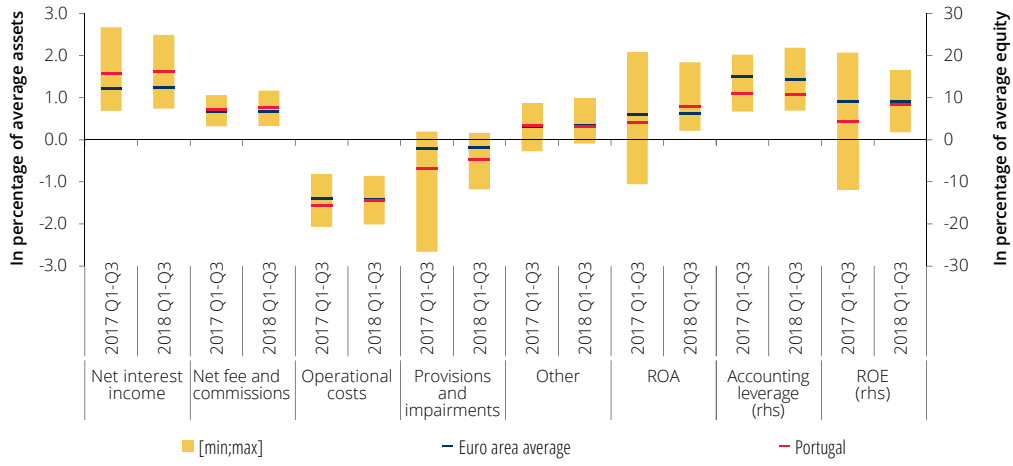
Between January and September 2018, return on assets of the Portuguese banking system was above the euro area average

In the first three quarters of 2018[137] the Portuguese banking system's ROA was above the euro area average. The relative position of the Portuguese banking system has benefited from the contribution from net interest income, which is higher than that observed for the euro area average. At the same time, Portuguese banks had a lower level of leverage and an ROE in line with the euro area average (Chart I.4.3). The improvement in profitability resulted mainly from the significant reduction in the provisions and impairments component which, however, remains above the euro area figures and, albeit to a lesser extent, the convergence observed in operating costs. However, the still high stock of non-performing loans of some Portuguese banks suggests that the recognition of impairment losses is likely to continue in the near future, despite the sharp reduction observed in recent years. In 2018, the Portuguese banking system's ROA was 0.66%, lower than in the first three quarters of 2018, which might affect Portugal's relative position in the year as a whole.

136. The accounting leverage is measured by the ratio of total assets to equity.

137. On the date of publication of this Report, ECB's "Consolidated Banking Data" information does not include data for the year as a whole.

Chart I.4.3 • ROA, ROE and leverage – international comparison (1Q-3Q 2018) | Per cent

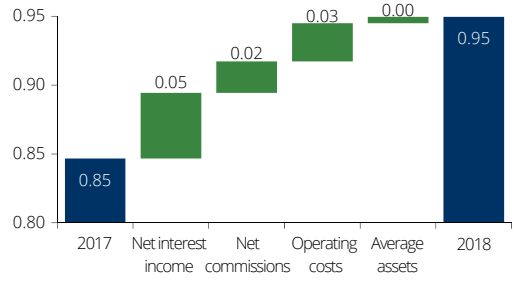


Source: European Central Bank (Consolidated Banking Data). | Notes: The 'Other' item includes negative goodwill, appropriation of income from subsidiaries, joint ventures and associates, and income from non-current assets held for sale and not qualifying as discontinued operations. Data for some items are unavailable for certain countries. However, this should not affect the analysis substantially. Annualized figures.

Profitability benefited from the positive contribution from different components of recurring operating result

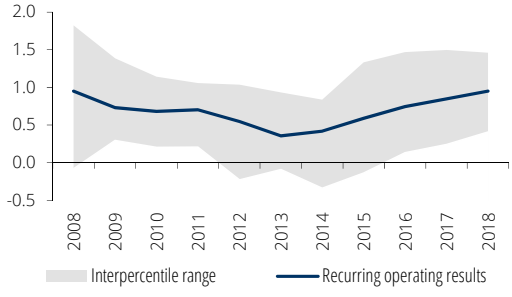
Recurring operating result,[138] as a percentage of average assets, increased by 0.10 p.p., supported by the positive contribution from all components, in particular net interest income (Chart I.4.4). These developments were determined chiefly by institutions with lower recurring operating result as a percentage of average assets (Chart I.4.5).

Chart I.4.4 • Recurring operating results - Level and contributions to change | Percentage of average assets



Source: Banco de Portugal. | Notes: Recurring operating result is aggregate net interest income and net fees and commissions less operational costs. The blue bars correspond to recurring operating result as a percentage of average assets. The other bars correspond to contributions made to changes in the ratio. Annualized figures.

Chart I.4.5 • Recurring operating results | Percentage of average assets

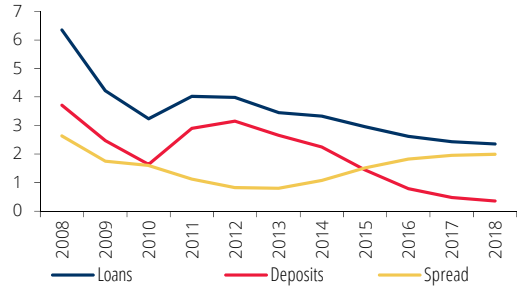


Source: Banco de Portugal. | Note: The interpercentile range was obtained by the difference between the 95th and 5th percentile of the indicator's asset-weighted distribution.

138. Recurring operating result is defined by aggregate net interest income and net fees and commissions less operational costs.

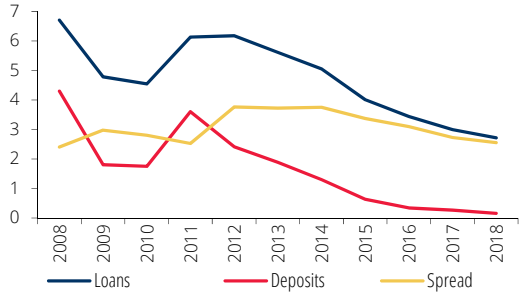
As in previous years, the fall in the implicit interest rate on deposits from customers and liabilities represented by debt securities allowed to reduce the implicit interest rate on liabilities by 0.19 p.p., with a positive impact on net interest income, in line with the observed in domestic activity (Chart I.4.6). In addition, developments in net interest income have also benefited from an increase in customer deposits, to the detriment of liabilities represented by debt securities, which is typically a more costly source of funding (4.5 Liquidity and funding). These dynamics allowed for the mitigation of the negative impact on net interest income of the reduction in the loan portfolio and the implicit interest rate on assets (-0.10 p.p.). However, as the possibility of additional reductions in interest rates applied to new deposits is already very limited (both in magnitude and in the set of institutions for which this is possible) and the composition effect in liabilities may be limited within the need to issue debt instruments to comply with the MREL requirements, a continuation of a low level of interest rates is likely to hamper an improvement in earnings through net interest income, as already evidenced by the fall of the margin in new business with customers since 2014 (Chart I.4.7).

Chart I.4.6 • Interest rates on outstanding loans and deposits, private non-financial sector – Domestic activity | Per cent



Source: Banco de Portugal. | Notes: Includes loans to non-financial corporations and households. Annual average of interest rates weighted by stocks of loans and deposits. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

Chart I.4.7 • Interest rates on new loans and deposits, private non-financial sector – Domestic activity | Per cent



Source: Banco de Portugal. | Notes: Includes loans to non-financial corporations and households. Annual average of interest rates weighted by amounts of new loans and deposits. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

Total operating income made a negative contribution of 0.39 p.p. to change in ROA. On the one hand, the decline in profits from financial operations justified a negative contribution of 0.22 p.p. to change in ROA. This decline was largely associated with lower gains from financial assets compared to the period 2015-17, as well as recognition of losses on non-performing loan sales carried out by some institutions and registration of losses on financial derivatives. In 2018 the contribution from income from financial operations to ROA was virtually nil, the lowest figure historically. On the other hand, in 2017 the amount corresponding to the triggering of the contingent capital mechanism laid down in the agreements concluded under the sale of Novo Banco (CCA) was recorded in other operating income, while in 2018 it was registered in equity. Thus, this change had a negative effect of 0.21 p.p. to change in ROA.

Net fees and commissions increased by 3.1%, accounting for 0.77% of average assets (0.74% in 2017). This was the result of a more significant increase in fee and commission income compared to fee and commission expenses. Fee and commission income increased across the main institutions, which is partly explained by the increase in fees and commissions for payment services, accounting for 22% of all fee and commission income at the end of 2018.

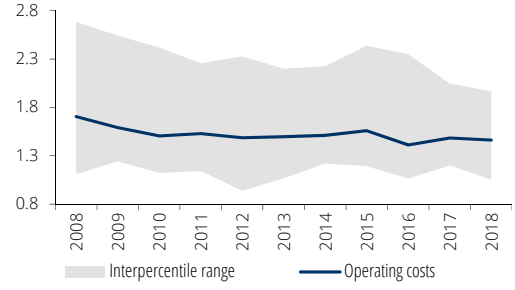
Operating costs continued their downward trend

Operating costs decreased by 1.9% and contributed to the increase in ROA (Chart I.4.8). This decrease reflects the similar reduction in staff costs and depreciation for the year. A reduction of staff costs took place in the main institutions, which continued to reduce branches and employees.

The decrease in total operating income interrupted the downward trend of the cost-to-income ratio[139] observed since 2013. The ratio increased by 7.4 p.p. in 2018, to 60.2%, converging virtually to the euro area median (Chart I.4.9). However, cost-to-core-income ratio maintained the downward trend started in 2014, mainly driven by the increase in recurring operating income[140] (1.9 p.p.), but also a reduction in operating costs (1.2 p.p.).

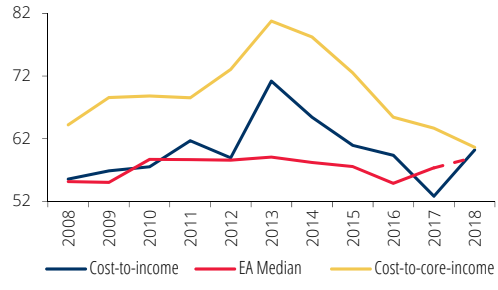
Although the banking system shows efficiency levels in line with the euro area median, investments required for a transition to a more intensive digital component of banking activity must continue. This transition should not impair a further improvement in operating efficiency, or jeopardise the appropriate allocation of resources to supervisory and control functions, particularly those regarding the prevention of money laundering and terrorist financing, as well as cyber-risk mitigation. Therefore, improving operating efficiency should remain a priority for Portuguese banks (1.1 Risks and vulnerabilities).

Chart I.4.8 • Operating costs | Percentage of average assets



Source: Banco de Portugal. | Note: The interpercentile range was obtained by the difference between the 95th and 5th percentile of the indicator's asset-weighted distribution.

Chart I.4.9 • Cost-to-income and cost-to-core-income ratios | Per cent



Source: Banco de Portugal. | Notes: The cost-to-income ratio corresponds to the ratio operational costs and total operating income. The interpercentile range was obtained by the difference between the 95th and 5th percentile of the indicator's asset-weighted distribution. The cost-to-core-income ratio corresponds to the ratio between operating costs and the sum of net interest income and net commissions. The median of the euro area corresponds to the median of cost-to-income.

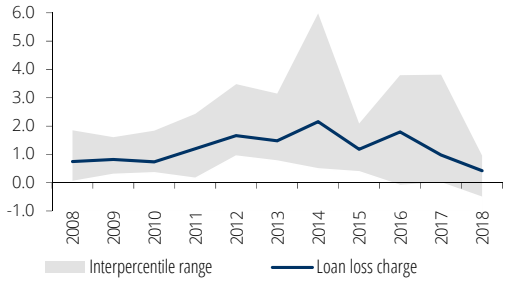
139. Ratio of operational costs to total operating income.

140. Recurring operating income corresponds to the aggregate net interest income and net fees and commissions less operational costs.

Significant decrease in loan loss charge in a context of still high non-performing loans

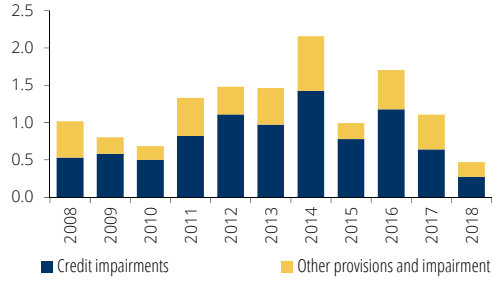
In 2018, the loan loss charge fell by 0.6 p.p., to 0.4%, which is lower than in 2008 (Chart I.4.10). The reduction in loss charge resulted mainly from the decrease in credit impairments and, to a lesser extent, the decrease in impairments for non-financial assets (Chart I.4.11). Although broadly based, the loan loss charge fell more sharply among the institutions for which this indicator was higher in 2017. In addition, some institutions already show a negative loan loss charge due to reversals net of credit impairments.

Chart I.4.10 • Loan loss charge | Per cent



Source: Banco de Portugal. | Notes: The loan loss charge corresponds to the flow of credit impairments and provisions as a percentage of total average gross credit granted to customers. The interpercentile range was obtained by the difference between the 95th and 5th percentile of the indicator's asset-weighted distribution.

Chart I.4.11 • Impairment and provisions | Percentage of average assets



Source: Banco de Portugal.

In a context of economic expansion, increasing real estate prices and low interest rates, the flow of impairment losses (net of reversals) declined in 2018. On the one hand, this was the result of a lower materialisation of credit risk, i.e. from a lower flow of new non-performing loans, resulting in a lower need for recording impairments on the credit portfolio. On the other hand, the favourable economic situation will tend to switch loans from non-performing to performing status (termed 'cures'), due to an improvement in the debtors' financial position. Similarly, the current context has facilitated the increase in value of real estate collateral, reducing the expected loss.

However, there are signs of a positive relationship between economic growth and the decrease in the flow of impairments. Hence, the current dynamics may flatten out or reverse should the economy deteriorate.[141] Furthermore, the effects of applying IFRS 9 and the addendum to the ECB guidance on provisioning of non-performing loans may lead to a faster recording of impairments. Finally, the convergence of asset quality indicators towards international standards requires the continuation of the reduction effort of the stock of non-performing loans and, in certain cases, the recording of impairments and/or recognition of losses from the disposal of these assets.

141. For more details on the influence of the macroeconomic factors on the banking sector's profitability, see Special Issue "Profitability of the Portuguese banking system – determinants and prospects", Banco de Portugal, *Financial Stability Report*, June 2017, and Martinho et al (2017), "Bank profitability and macroeconomic factors", Financial Stability Papers, Banco de Portugal.

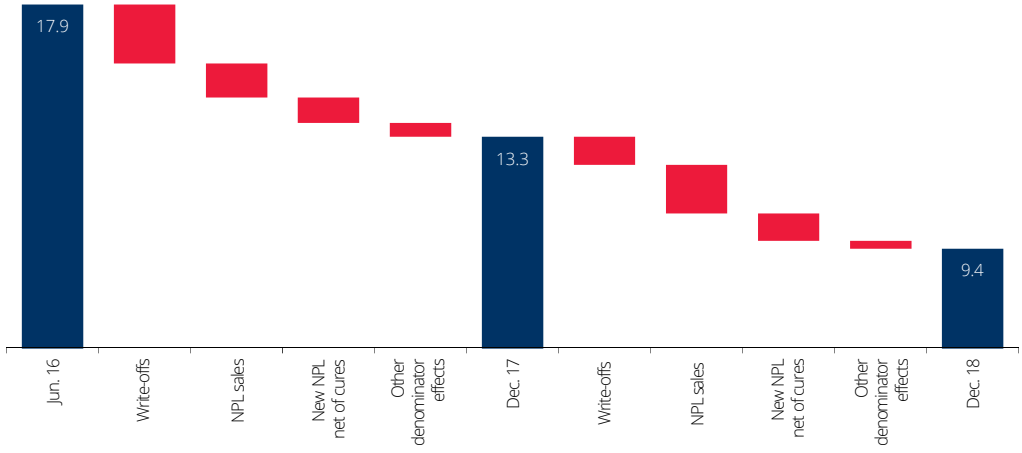
With a view to applying the accounting principles laid down in IFRS 9 consistently, Banco de Portugal published a Circular Letter[142] giving its understanding of the benchmark criteria and principles supporting the assessment of the calculation methodologies for expected losses on credit for institutions under its supervision.

4.2 Asset quality

In 2018 the NPL ratio recorded a gross value of less than 10%, and less than 5% net of impairments, but still ranks as one of the highest in the euro area

The decline in the gross NPL ratio in 2018 was 3.8 p.p. to 9.4% at the end of the year, the lowest value since the European Banking Authority (EBA) introduced the definition of NPLs into supervisory reporting templates. This was driven by the sharp decrease in the stock of non-performing loans and, to a lesser extent, to the increase in performing loans. In 2018 NPLs decreased by 30%, mainly due to the sale of these assets. NPL sales are estimated to have contributed 1.7 p.p. to the decline in the NPL ratio while write-offs and net cures accounted for 1.0 p.p. each (Chart I.4.12).

Chart I.4.12 • NPL ratio – Contributions to change | Per cent and percentage points



Source: Banco de Portugal (internal calculations). | Notes: NPLs according to the EBA definition. NPL sales include securitisations. The 'New NPLs, net of cures' item reflects all the NPL inflows and outflows for reasons other than write-offs, sales and securitisations, namely new NPLs net of cures, amortisations and foreclosures. Other denominator effects reflect changes in the stock of loans that are not related with the NPL stock (e.g. net flow of performing loans).

The Portuguese banking system has significantly reduced the level of NPLs in recent years. Since its peak in June 2016 the total stock of non-performing loans decreased by 49% (NFCs: 49%; households: 46%), corresponding to a €24.6 billion reduction (NFCs: -€16.1 billion; households: -€5.9 billion). This, combined with an increase in performing loans over the last two years, resulted in an 8.5 p.p. decline in the NPL ratio (NFCs: -11.9 p.p. households: -4.1 p.p.) to 9.4%. This decrease in the ratio was mainly the result of the write-offs and sales of non-performing loans.

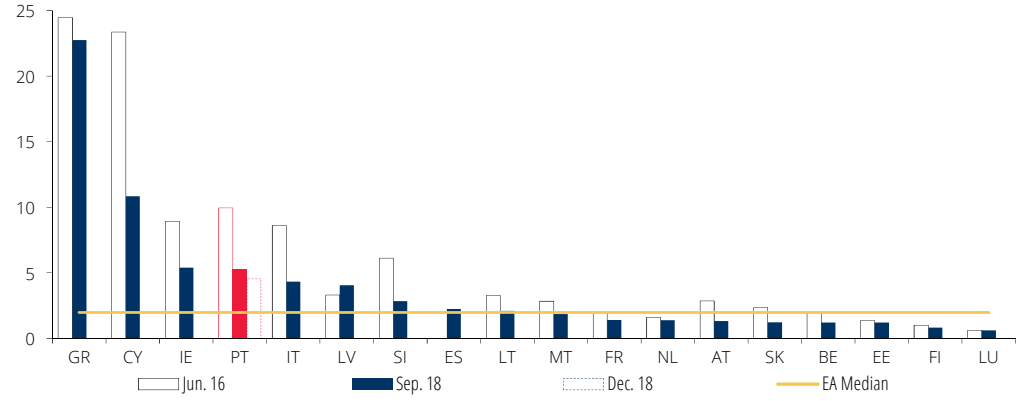
142. Circular Letter No CC/2018/00000062, issued on 15 November 2018.

In 2018, the NPL ratio net of impairments[143] decreased by 2.2 p.p. to 4.5%. This reduction was mainly due to a decline in the gross NPL ratio[144] and, to a lesser extent, to an increase in the coverage by impairment ratio[145]. The reduction in the NPL ratio net of impairments was dispersed across the institutions of the banking system, although more pronounced in those with the highest ratios in 2017.

The NPL coverage by impairment rose 2.5 p.p. in 2018, standing at 51.9% at the end of the year. This stems from a decrease in the NPL stock that was much sharper than the decrease in their impairments.

Despite the significant progress already achieved, the level of NPLs net of impairments in the Portuguese banking system remains one of the highest within Europe (Chart I.4.13). In September 2018, net NPLs in the euro area represented 2.4%, a 1.8 p.p. reduction compared to June 2016.[146] This reduction was mainly found in countries that were above the median in June 2016. Thus it is important that the current NPL reduction trend is maintained in accordance with the NPL reduction plans that have been submitted to the supervisory authorities and are being implemented by the institutions.

Chart I.4.13 • NPL ratio net of impairments – international comparison (September 2018)
| Per cent



Source: European Central Bank (Consolidated Banking Data). | Notes: NPLs according to the EBA definition. Certain countries are not represented due to lack of data.

The decline in the NPL ratio of NFCs was broad-based across the different activity sectors

NFCs' NPL ratio net of impairments was 8.1% at the end of 2018, a drop of 3.5 p.p. in the course of the year. This decrease was the result of the sharp decline in the gross NPL ratio (by 6.7 p.p. to 18.5%), which was mainly caused by the reduction of non-performing loans (Chart I.4.14). The evolution of the NFCs' NPL ratio net of impairments also reflected an increase

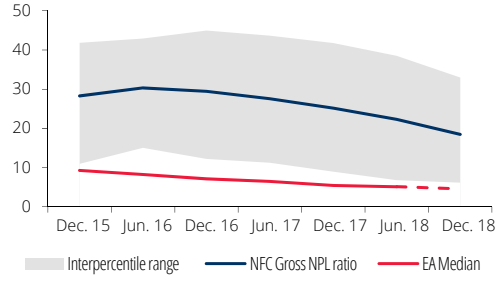
143. Ratio between the value of NPLs net of impairments and the total gross value of the loans.
144. Ratio between the value of NPLs and the total gross value of the loans.
145. Ratio between impairments recorded for NPLs and the NPL gross value.
146. Germany and Spain were not considered in the calculation of the average NPL ratio net of impairments in the euro area, for both periods, due to insufficient information in the Consolidated Banking Data (ECB) database.

in the coverage ratio (of 2.4 p.p.), which reflected a greater reduction in non-performing loans than in impairments.

The reduction in the NFCs' gross NPL ratio was widespread across the banking sector as a whole, with the credit institutions that had a higher ratio recording a greater decline, leading to a reduction of heterogeneity. The 6.7 p.p. reduction of NFCs' gross NPL ratio has resulted mainly from sales of NPLs, with an estimated impact of 3.3 p.p. (Chart I.4.15).

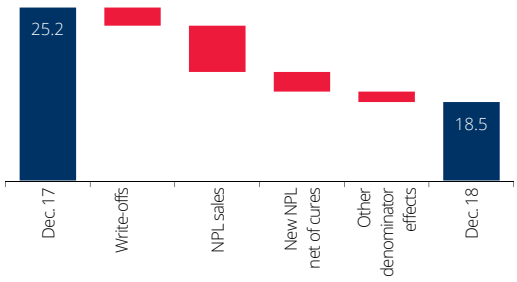
Loans switching from non-performing to performing status (termed 'cures') and write-offs contributed to the decline in NPLs 1.7 p.p. and 1.0 p.p. respectively. At European level, the NFCs' gross NPL ratio continued to get closer to the euro area median.

Chart I.4.14 • NFC Gross NPL ratio | Per cent



Source: Banco de Portugal and European Central Bank (Consolidated Banking Data). | Notes: NPLs according to the EBA definition. The interpercentile range was obtained by the difference between the 95th and 5th percentile of the indicator's asset-weighted distribution. The December 2018 euro area median refers to the September 2018 figure since end-2018 data are not available.

Chart I.4.15 • NFC Gross NPL ratio - Contributions to change | Per cent and percentage points

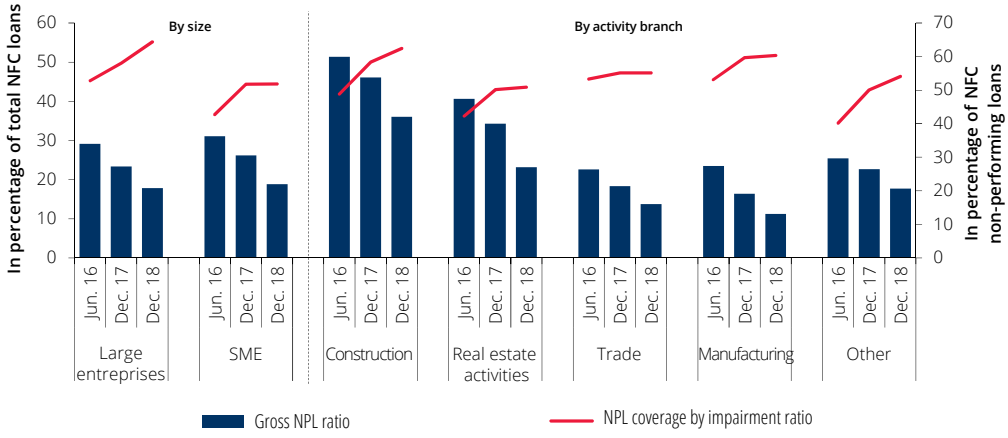


Source: Banco de Portugal (internal calculations). | Notes: NPLs according to the EBA definition. NPL sales include securitisations. The 'New NPLs, net of cures' item reflects all the NPL inflows and outflows for reasons other than write-offs, sales and securitisations, namely new NPLs net of cures, amortisations and foreclosures. Other denominator effects reflect changes in the stock of loans that are not related with the NPL stock (e.g. net flow of performing loans).

The reduction of NFCs' NPLs since June 2016 has been observed across different activity sectors. This reduction was more pronounced in those sectors that, in June 2016, had a larger stock of these loans in the total portfolio of loans to NFCs. The coverage by impairments of these loans also registered an increase across the activity branches. In 2018, the gross NPL ratios of Construction and Real estate activities dropped 10 p.p. and 11 p.p., compared to 2017, standing at 36% and 23% respectively, representing the largest reductions of the NPL ratio in the portfolio of loans to NFCs (Chart I.4.16). These reductions reflected the sharp fall in NPLs, which in turn led to a decrease in the total portfolio of loans to these activity branches. These activity branches' loan portfolios showed the largest reduction of the NPL ratio in 2018, surpassing the reductions observed in previous years.

SMEs posted the largest decline in NPLs per enterprise size since June 2016. Gross NPL ratios of large enterprises and SMEs fell by 5.5 p.p. and 7.4 p.p., to 17.8% and 18.8% respectively, in 2018.

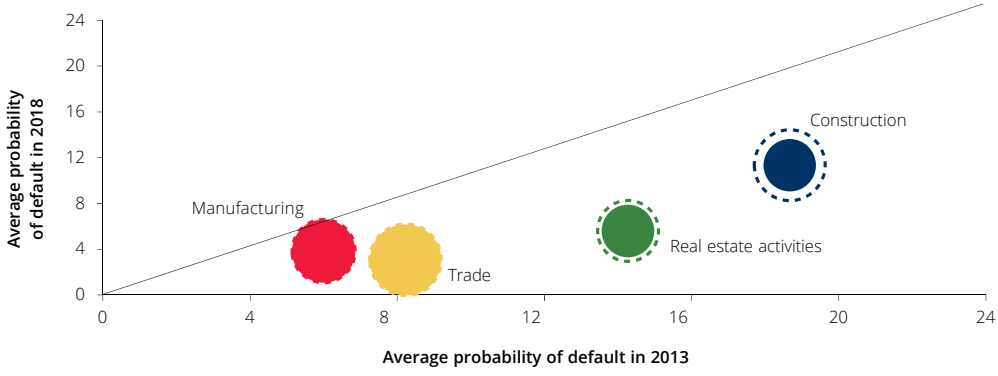
Chart I.4.16 • NFC non-performing loans by firm size and activity sector



Source: Banco de Portugal. | Notes: The activity branch "Trade" corresponds to the aggregate of the branches "wholesale and retail trade; repair of vehicles" and" accommodation and food service activities". The "Industry" branch includes the "manufacturing industries" and the "mining and quarrying". "Other" includes branches of activity not individually represented in the chart.

Since 2013 against a backdrop of economic and housing market recovery, the improvement of Portuguese enterprises' financial situation and the reduction of NPLs have resulted in a reduction of the credit granted to enterprises with low productivity[147] and in a decrease in the average probability of default for the stock of loans granted to NFCs by the resident financial system (Chart I.4.17).

Chart I.4.17 • Average probability of default of loan stocks granted by the resident financial system (2013 vs. 2018) | Per cent



Source: Banco de Portugal. | Notes: The activity branch "Trade" corresponds to the aggregate of the branches "wholesale and retail trade; repair of vehicles" and" accommodation and food service activities". The "Industry" branch includes the "manufacturing industries" and the "mining and quarrying". The dimension of the circle is proportional to the stock of non-overdue loans granted by the resident financial system to companies in the sector. The solid circle corresponds to the stock in end-2018 and the dashed circle corresponds to the stock at end-2013. Firms that are in default or do not have an attributed rating were not taken into account in calculating the average default probability of the sector in which they are inserted. The probability of default associated to each company was estimated based on the methodology presented in the article by Antunes, Gonçalves and Prego (2016) "Firm default probabilities revisited", Economic Studies, Banco de Portugal.

147. See Azevedo, Mateus and Pina (2018), "Bank credit allocation and productivity: stylised facts for Portugal", Working Paper No 25, Banco de Portugal.

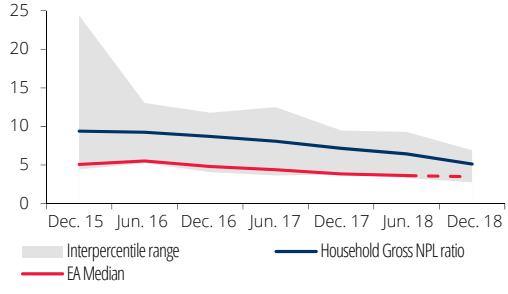
With the introduction of IFRS 9[148] at the beginning of 2018, the loan portfolio is classified in three stages depending on the quality of the loan: stage 1 – performing; stage 2 – underperforming; stage 3 – credit-impaired. In 2018, 69% of NFCs' loans were in stage 1, 13% in stage 2 and 18% in stage 3.

Reduction of households' NPL ratio in a context of increased coverage by impairments

In 2018, households' NPL ratio net of impairments decreased by 1.5 p.p., to stand at 3.0% at the end of the year. This essentially reflects the decline in the gross NPL ratio on account of lower NPLs (Chart I.4.18). The coverage by impairment ratio increased by 3.8 p.p. to 40.9%, reflecting a higher decrease in non-performing loans than the decrease in associated impairments.

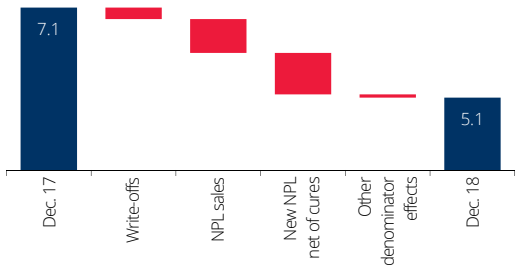
Households' gross NPL ratio stood at 5.1%, 2 p.p. less than at the end of 2017. This development was mainly driven by net cures and sales of these loans. Net cures and sales' impact on the reduction of the ratio is estimated at 0.9 p.p. and 0.8 p.p. respectively (Chart I.4.19). At euro area level, the NFCs' gross NPL ratio continued to converge to the median.

Chart I.4.18 • Gross NPL ratio, households | Per cent



Sources: Banco de Portugal and European Central Bank (Consolidated Banking Data). | Notes: NPLs according to the EBA definition. The interpercentile range was obtained by the difference between the 95th and 5th percentile of the indicator's asset-weighted distribution. The December 2018 euro area median refers to the September 2018 figure since end-2018 data are not available.

Chart I.4.19 • Households Gross NPL ratio – Contributions to change | Per cent and percentage points



Source: Banco de Portugal (internal calculations). | Notes: NPLs according to the EBA definition. NPL sales include securitisations. The 'New NPLs, net of cures' item reflects all the NPL inflows and outflows for reasons other than write-offs, sales and securitisations, namely new NPLs net of cures, amortisations and foreclosures. Other denominator effects reflect changes in the stock of loans that are not related with the NPL stock (e.g. net flow of performing loans).

The reduction of NPLs in the institutions' portfolio throughout 2018 was dispersed across loans for house purchase and loans for consumption and other purposes. The gross NPL ratio of loans to households for house purchase decreased by 2 p.p. to 3.7% as a result of a 35% decrease in the amount of NPLs. Similarly, the gross NPL ratio of loans for consumption and other purposes dropped by 2.5 p.p. to 10.6%. Ratios have decreased across the banking system's institutions. In addition, there was also a reduction of heterogeneity.

In 2018, 86% of the households' loan portfolio was classified as stage 1 of the IFRS 9 impairment model, 9% was in stage 2 and 5% in stage 3.

148. Special issue 2 "IFRS 9 – Main changes and impacts anticipated for the banking system and financial stability", *Financial Stability Report*, June 2017.

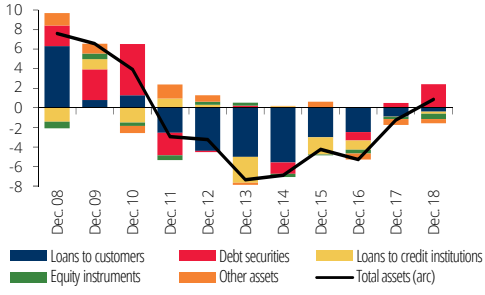
4.3 Concentration of exposures

Exposures to government bonds and real estate remained high in 2018

The Portuguese banking system is characterised by high exposure to certain asset classes, notably to government debt, to real estate, and to intra-sectoral exposures in the financial system.

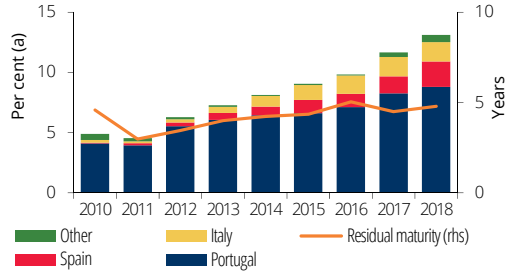
In 2018 the increase in the value of the government bond portfolio made the largest contribution to the 0.9% growth in the banking system's total assets. The other items contributed negatively to changes in assets (Chart I.4.20). Exposure to Portuguese government debt represented around 9% of total assets, making it an important channel for the transmission of sovereign risk to the banking system (1.1 Risks and vulnerabilities). Since 2011 the Portuguese banking system has also increased its exposures to government bonds issued by other euro area countries, most notably Spain and Italy (Chart I.4.21). At the same time, the average residual maturity of government bonds in the banks' portfolios increased.

Chart I.4.20 • Total assets – Year on year rate of change and contributions | Per cent and percentage points



Source: Banco de Portugal.

Chart I.4.21 • Sovereign debt securities – Domestic activity | Per cent



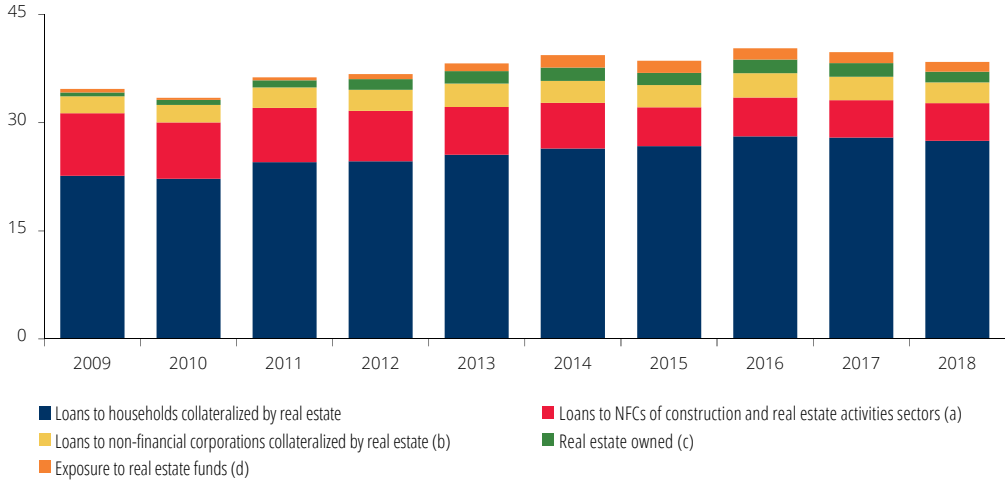
Source: Banco de Portugal. | Notes: (a) As a percentage of other monetary financial institutions total assets. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

Despite the slight reduction observed since 2016, Portuguese banks continue to concentrate a significant proportion of their exposures on the real estate market (Chart I.4.22), accounting for approximately 38% of total assets in 2018, 27% of which corresponds to housing loans.

In 2018 the residential real estate market in Portugal remained buoyant, leading to growth in prices and volume of transactions. However, some moderation was observed from the second half of 2018 onwards, with lower growth in prices, transactions and, more strikingly, in new housing loans, as well as an increase in the average time needed to sell real estate (2.3 Real estate market).

The buoyancy of the housing market in recent years has had a positive impact on the banking system. The increase in demand for real estate facilitated the sale of foreclosed assets and contributed to the decrease in NPLs linked to loans secured by real estate (1.1 Risks and vulnerabilities).

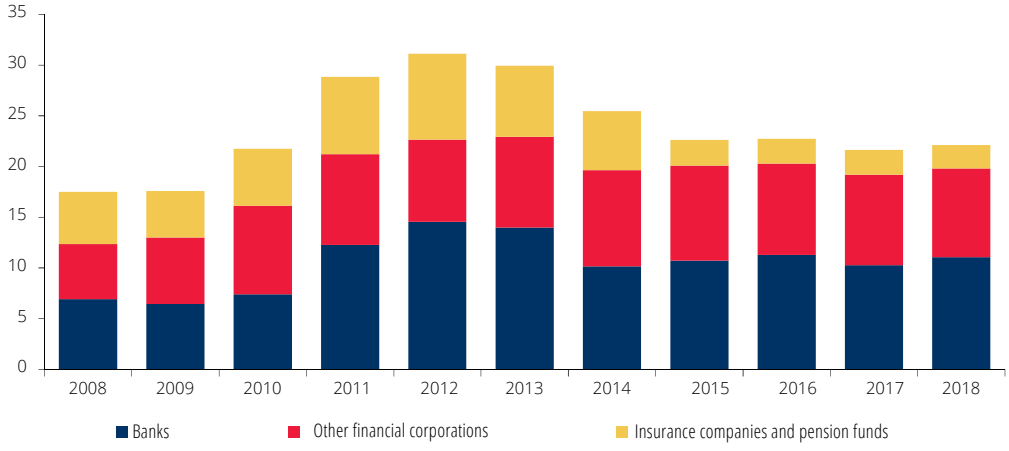
Chart I.4.22 • Banking system exposure to real estate assets | Percentage of total assets



Source: Banco de Portugal. | Notes: (a) it does not exclude loans granted to projects not related to the real estate sector, as public works; (b) excludes loans to NFCs in the construction and real estate activities sectors; (c) gross values; (d) Includes loans and shares.

The intra-sectoral exposure in the financial system, although smaller than during the economic and financial crisis, reflecting, among other things, a weaker interlinkage with the insurance sector, is still relevant, in particular regarding intra-group activity[149].[150] In 2018 taking full account of financial assets, banks'[151] exposure to the financial sector[152] (including banks themselves) increased slightly from 21.7% in 2017 to 22.1% of financial assets (Chart I.4.23). This reflects the increase in exposure to resident banks mainly through the increase in debt securities and in investments in deposits.

Chart I.4.23 • Banks exposure to the financial sector | Percentage of financial assets



Source: Banco de Portugal. | Notes: The subsector "Other financial intermediaries" also includes financial auxiliaries. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

149. This comprehends domestic activity on an individual basis.
150. See the Special issue "Direct and indirect interlinkages in the Portuguese financial system", *Financial Stability Report*, June 2018.
151. The word "banks" in this section means "other monetary financial institutions".
152. In addition to other monetary financial institutions, the financial system also comprises insurance companies, pension funds, investment funds and other intermediaries and financial auxiliaries.

In 2018 banks' funding from the financial sector increased, mainly reflecting intra-bank financing, as other intermediaries and financial auxiliaries reduced their exposure. Still, the remaining sub-sectors of the financial sector, i.e. excluding banks, remain an important source of funding for banks.

Exposure to some developing economies particularly dependent on commodity exports remains significant for the largest institutions in the banking system. Although the exposure is heterogeneous between institutions, direct exposures to these economies in general take the form of loans to the economy and investment in government bonds, amounting to approximately 3.1% of the total assets of the banking system in 2018. However, exposures to developing economies are mainly indirect in nature, i.e. credit and credit lines to Portuguese enterprises whose activity is concentrated on these economies.

4.4 Credit standards

4.4.1 Non-financial corporations

In 2018 interest rate spreads on new loans to NFCs continued to be differentiated according to their credit risk and new loans continued to be directed to lower-risk enterprises

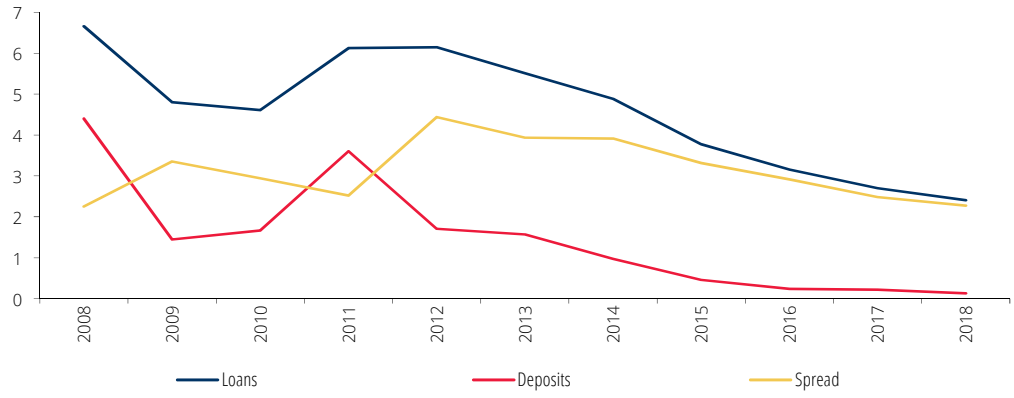
According to the *Bank Lending Survey* (BLS) of 2018,[153] the credit standards and terms and conditions on new loans to NFCs remained largely unchanged throughout 2018 and in the first quarter of 2019. As regards the NFCs' demand for credit, some institutions reported a minor increase in the last quarter of 2018, in both the SME and large enterprises segments, particularly in long term loans. Underlying these developments, some banks pointed to a slight increase in the need to finance investment. In the first quarter of 2019 enterprises' demand for credit remained virtually unchanged compared to the last quarter of 2018.

In domestic activity, the gross flow of new bank loans to NFCs increased in 2018 after a sharp fall between 2013 and 2017. This decrease was strongly influenced by the significant increase in the average term of new loans during the period (3.2.2 Non-financial corporations).

In a context where the spread between the interest rates on new loans and deposits with NFCs was similar to that seen before the financial crisis, the average interest rate of new loans to NFCs is substantially lower (Chart I.4.24).

153. *Bank Lending Surveys* of July and October 2018 and January and April 2019, Banco de Portugal.

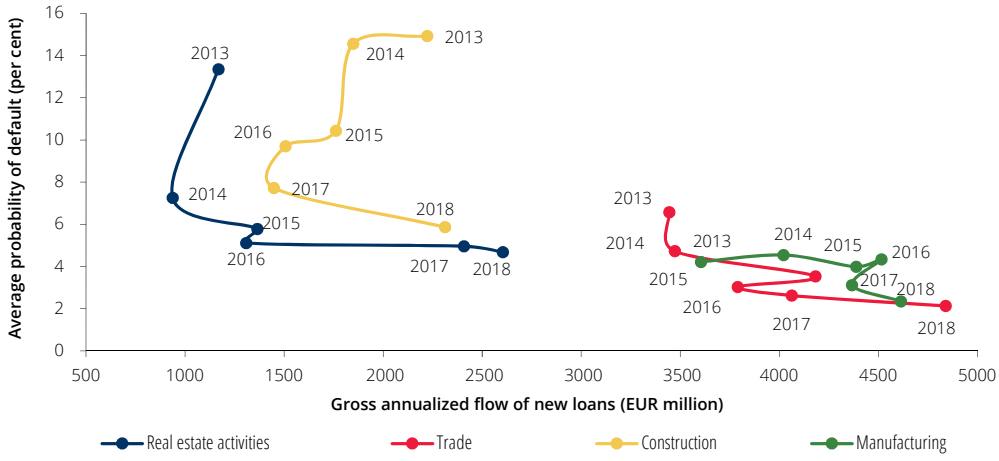
Chart I.4.24 • Interest rates on new loans and deposits – non-financial corporations | Per cent



Source: Banco de Portugal. | Notes: Annual average of interest rates weighted by amounts of new loans. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

In recent years, new bank loans have been preferably granted to enterprises with a lower risk of default at the expense of riskier enterprises.[154] Indeed, the average probability of default on new bank loans to NFCs has decreased significantly since 2013, to which the positive development in the business cycle also contributed (Chart I.4.25).

Chart I.4.25 • Average probability of default and gross annualized flow of new bank loans, by activity sector and year

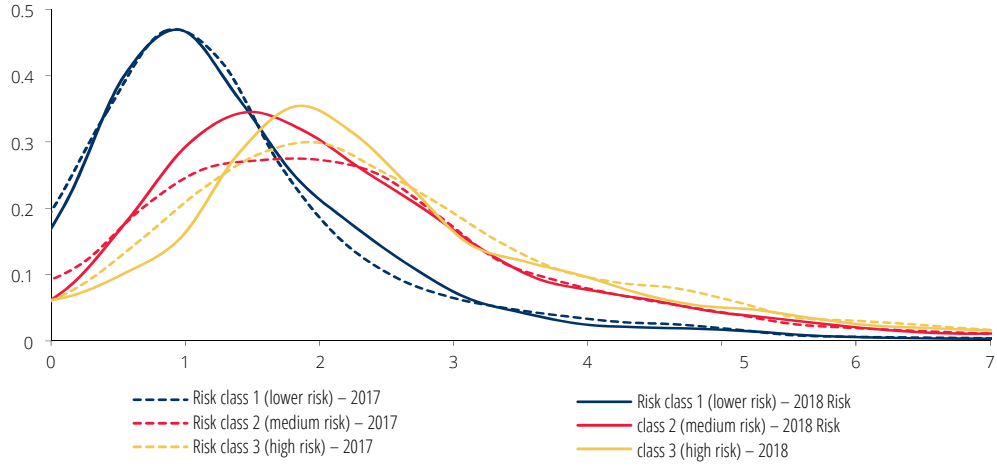


Source: Banco de Portugal. | Notes: The activity branch "Trade" corresponds to the aggregate of the branches "wholesale and retail trade; repair of vehicles" and" accommodation and food service activities". The "Industry" branch includes the "manufacturing industries" and the "mining and quarrying". The annualized gross flow of each new loan is obtained by multiplying the loan amount, if the loan has a term of less than one year, by the respective annualized term. The annualized loan term results from the quotient between the number of days of the loan and 365. Firms that are in default or that do not have an assigned rating were not considered in the calculation of the average probability of default (PD) of the sector in which they are inserted. The PD associated to each company was estimated based on the methodology presented in the article by Antunes, Gonçalves and Prego (2016) "Firm default probabilities revisited", Economic Studies, Banco de Portugal.

154. See Chapter I.3.2 of the May 2019 issue of the *Economic Bulletin*.

In 2018 interest rate spreads on new loans to NFCs continued to be differentiated according to their credit risk (Chart I.4.26). In the case of new loans to lower-risk enterprises (risk class 1), the distribution at the end of 2018 did not change significantly compared to the previous year. With regard to other risk classes, spreads' distributions have become more concentrated.

Chart I.4.26 • Spreads on new bank loans to private NFCs - Empirical distribution
| Percentage points



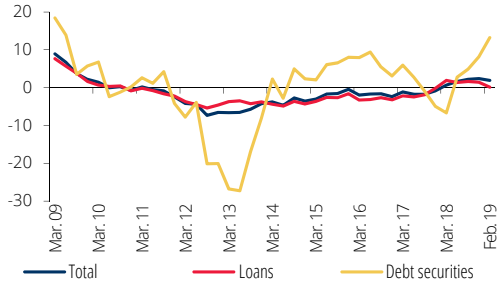
Source: Banco de Portugal. | Notes: Kernel Epanechnikov with a bandwidth of 0.3. Distribution truncated below 0% and above 10%. Loans granted by the seven largest banking groups operating in Portugal. Spreads weighted by loan amounts. The attribution of risk information to each enterprise follows the methodology of Antunes, A. et al. (2016), "Firm default probabilities revisited", Economic Studies, Banco de Portugal. New operations regarding enterprises are used, with the risk information available, to calculate the shares of each risk class and the total new operations series. Lower risk class (risk class 1) corresponds to the enterprises with a probability of default (PD) in one year of 1% or less; risk class 2 corresponds to enterprises with a PD in one year of above 1% and below or equal to 5% and the higher risk class (risk class 3) corresponds to the enterprises with a PD in one year of above 5%. Interest rates on new operations performed by monetary financial institutions resident in Portugal (excluding central bank) with residents in the euro area. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

Credit to NFCs granted by resident banks provided a positive adjusted annual rate of change[155] in the course of 2018 (Chart I.4.27). The acceleration of the credit granted to NFCs was supported, as of the second half of the year, by the debt securities issued by NFCs and held by the banks, while the annual rate of change in loans decreased from 2.0% in January to 1.4% in December 2018.

With regard to the banking system's activity on a consolidated basis, gross values of performing loans to NFCs increased by 4.7% (Chart I.4.28). Despite this increase, the portfolio of loans to NFCs continued to drop due to the aforementioned reduction of non-performing loans (4.2 Asset quality).

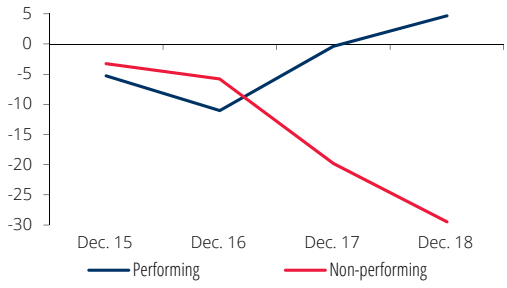
155. Annual rate of change adjusted for securitisation operations, reclassifications, write-offs and exchange rate and price revaluations and, where relevant, for the effects of credit portfolio sales.

Chart I.4.27 • Bank credit granted to private NFCs – Annual rate of change | Per cent



Source: Banco de Portugal. | Notes: Annual rates of change adjusted for securitisation operations, reclassifications, write-offs and exchange rate and price revaluations and, where relevant, for the effects of credit portfolio sales. Bank credit to non-financial corporations includes debt securities held by banks. Credit granted by monetary financial institutions resident in Portugal to residents in the euro area. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

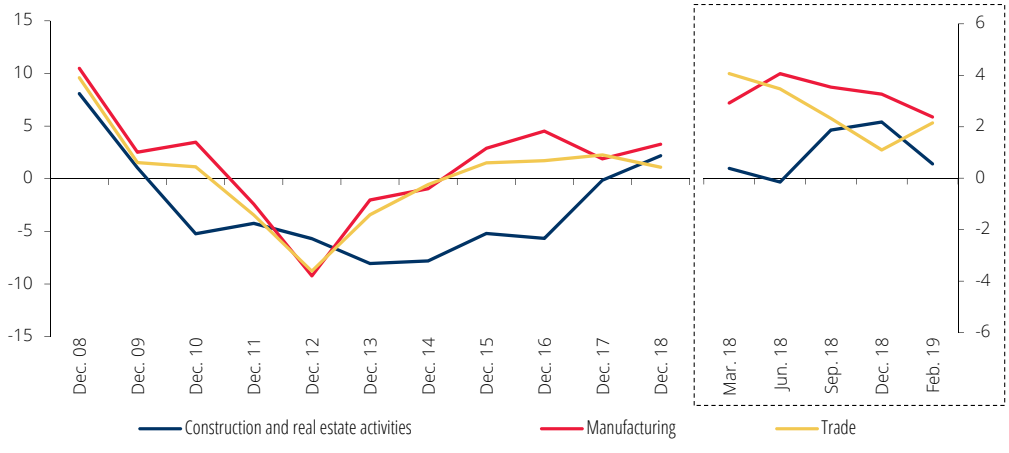
Chart I.4.28 • Loans granted to the non-financial corporations – Year on year rate of change | Per cent



Source: Banco de Portugal. | Note: NPLs according to the EBA definition. Consolidated activity.

Despite the credit recovery, performance by activity branch remains somewhat heterogeneous. On the one hand, loans to Industry[156] and Trade[157] NFCs have recorded positive change rates since 2015 (Chart I.4.29). On the other hand, the recovery of credit granted to enterprises in Construction and Real estate is linked to the buoyancy of the real estate market. However, loans to enterprises continued to decrease only in Construction.

Chart I.4.29 • Loans granted by the banking sector to NFCs by activity sector – Annual rate of change | Per cent



Source: Banco de Portugal. | Notes: The activity branch "Trade" corresponds to the aggregate of the branches "wholesale and retail trade; repair of vehicles" and" accommodation and food service activities". The "Industry" branch includes the "manufacturing industries" and the "mining and quarrying". Annual rates of change adjusted for securitisation operations, reclassifications, write-offs and exchange rate and price revaluations and, where relevant, for the effects of credit portfolio sales. Bank credit to non-financial corporations includes debt securities held by banks. Credit granted by monetary financial institutions resident in Portugal to residents in the euro area. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

156. Includes 'manufacturing' and 'mining and quarrying'.

157. Includes 'wholesale and retail trade; repair of motor vehicles and motorcycles' as well as 'accommodation, food services and the like'.

4.4.2 Households

Banks reported tighter credit standards on loans to households, associated with Banco de Portugal's macroprudential recommendation, but interest rates for housing loans remained at record lows

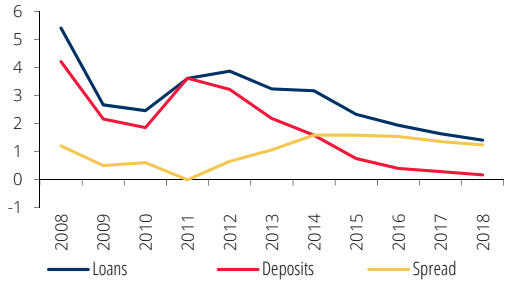
Credit standards and terms and conditions on credit agreements for households remained the same during the first half of 2018. According to the October BLS, in the third quarter of 2018 most institutions reported that tighter credit standards applied to household loans, for both house purchase and consumption. This tightening had already been foreseen by the banks in the July 2018 survey and reporting banks linked it to compliance with Banco de Portugal's recommendation on new credit agreements for consumers, which entered into force on 1 July 2018. Regarding terms and conditions on housing loans, institutions reported a further tightening of the required guarantees, loan-to-value and other limits to amount and maturity (Box 4).

In the last quarter of 2018 and first quarter of 2019, credit standards remained broadly unchanged. In addition, according to the BLS results, there was a slight reduction in demand for housing loans in the first quarter of 2019, also linked to Banco de Portugal's recommendation.

New housing loans have been slowing down, particularly in the second half of 2018 and early 2019. In the first quarter of 2019 new housing loans increased by 7.5% year on year, remaining at a much lower level than before the financial crisis (3.2.1 Households). The spreads between the interest rates on new housing loans to households and those on household deposits are slightly above their levels in 2008, although they are on a downward path (Chart I.4.30).

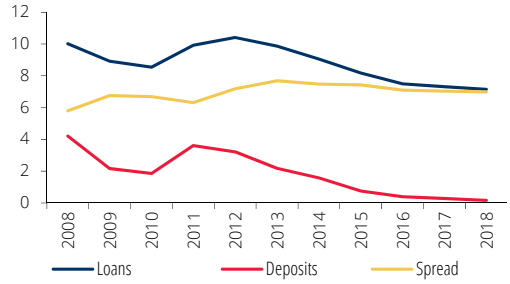
New consumer loans have been slowing down in the second half of 2018 and first quarter of 2019. This development reflected the deceleration of the main segments of consumer loans (personal loans and car loans) (3.2.1 Households). The interest rate on new loans is at a record low, although in a context of low inflation compared to the period preceding the financial crisis. However, the spread between the interest rates on new consumer loans to households and those on household deposits are above their levels in 2008, stabilising in 2018 (Chart I.4.31).

Chart I.4.30 • Interest rates on new loans and deposits – households, house purchase | Per cent



Source: Banco de Portugal. | Notes: Annual average of interest rates weighted by amounts of new loans and deposits. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

Chart I.4.31 • Interest rates on new loans and deposits – households, consumption | Per cent

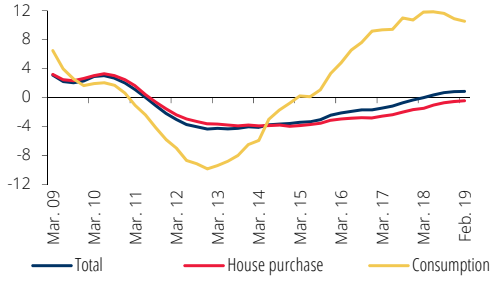


Source: Banco de Portugal. | Notes: Annual average of interest rates weighted by amounts of new loans and deposits. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

In 2018 household loan balances posted a 0.8% increase, up from the previous year. In the course of 2018 and in the first few months of 2019, there was a slowdown in consumer loan balances, while the annual rate of change in housing loans increased, although it remained negative (Chart I.4.32).

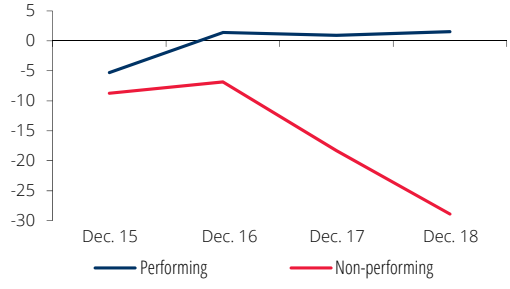
Regarding the banking system's activity on a consolidated basis, gross values of performing loans to households increased by 1.5% (Chart I.4.33). However, the household loans portfolio continued to decrease due to the aforementioned drop in non-performing loans (4.2 Asset quality).

Chart I.4.32 • Bank credit granted to households – Annual rate of change | Per cent



Source: Banco de Portugal. | Notes: Annual rates of change adjusted for securitisation operations, reclassifications, write-offs and exchange rate and price revaluations and, where relevant, for the effects of credit portfolio sales. The series refer to the reporting on an individual basis of the other monetary financial institutions resident in Portugal.

Chart I.4.33 • Loans granted to households – Year on year rate of change | Per cent



Source: Banco de Portugal. | Note: NPLs according to the EBA definition. Consolidated activity.

4.5 Liquidity and funding

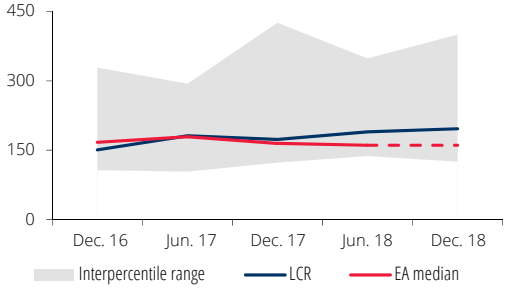
The liquidity position has been strengthened and has become less heterogeneous among institutions

In 2018, the liquidity coverage ratio (LCR)[158] of the Portuguese banking system increased by 23 p.p. in aggregate at the end of 2017 to 196.4%, considerably above the minimum requirement of 100% and above the euro area median. In addition, half the banking system's institutions had a ratio above 200%, in terms of assets, in a context where dispersion has been reduced (Chart I.4.34).

The evolution of the LCR mainly reflects the change in the liquidity buffer[159], which increased by 14.4%. The government debt component increased by 24.5% at the end of 2017, representing 69% of the liquidity buffer, partly offset by the reduction in central bank reserves, which decreased by around 15%. As a whole, in September 2018, assets representing claims on or guaranteed by central banks and public sector entities[160] accounted for more than 95% of the liquidity buffer, slightly above the euro area median (91%).

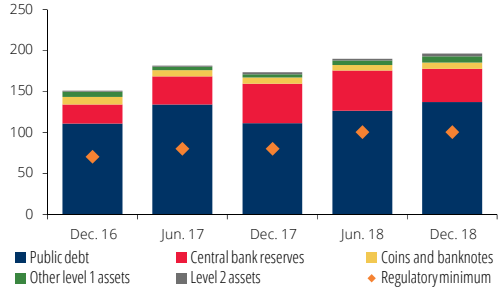
Government bonds issued by public administrations of the Member States of the European Union are particularly attractive to meet the LCR as they are not subject to weighting in the calculation of the liquidity buffer. In this context, in December 2018 Portuguese banks held a sufficient amount of public debt per se to fully comply with the LCR minimum requirement (Chart I.4.35).

Chart I.4.34 • Liquidity coverage ratio
| Per cent



Sources: Banco de Portugal and European Central Bank (Consolidated Banking Data). | Notes: The LCR corresponds to the ratio of available liquid assets and net cash outflows calculated under a 30-day stress scenario. The interpercentile range was obtained by the difference between the 95th and 5th percentile of the indicator's asset-weighted distribution. The December 2018 euro area median refers to the September 2018 figure since end-2018 data are not available.

Chart I.4.35 • Liquidity buffer – Structure
| Percentage ot net liquidity outflows



Source: Banco de Portugal. | Note: The liquidity buffer comprises the liquid assets held by credit institutions that satisfy requirements set in the Commission Delegated Regulation (EU) 2015/61 of 10 October 2014.

158. The LCR corresponds to the ratio of unencumbered high-quality liquid assets to net cash outflows calculated for a 30-day stress scenario (i.e. a scenario with significant liquidity needs for a period of 30 days).

159. The liquidity buffer comprises the liquid assets held by credit institutions that satisfy requirements set in the Commission Delegated Regulation (EU) 2015/61 of 10 December 2014.

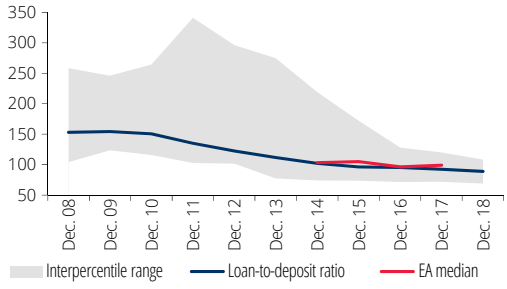
160. It includes, but is not limited to, reserves available at central banks and assets representing claims on or guaranteed by government.

The asset encumbrance ratio[161] fell by 2.9 p.p. in 2018 to 17.5%, slightly above the euro area median. This reflected a 15.4% reduction of encumbered assets and collateral assets received and re-used to obtain liquidity. Central bank funding is the main source of asset encumbrance, corresponding to around 43% of the funding obtained with collateral. Among the assets available for encumbrance, the eligible fraction for monetary policy operations increased by 3.8 p.p. to 24.4%.

Deposits of NFCs and households increased, while debt securities fell

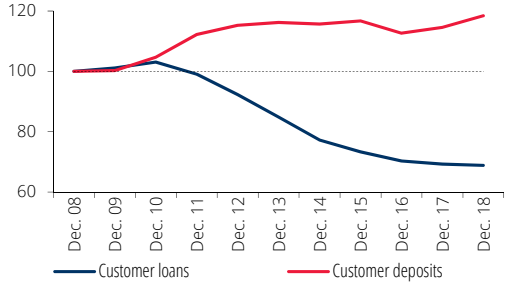
During 2018 the loan-to-deposit ratio[162] continued to fall, although it appears to be stabilising (Chart I.4.36). At the end of the year, the loan-to-deposit ratio stood at around 89% in aggregate terms, 3.6 p.p. lower than in December 2017. At the same time, the dispersion of this indicator among the institutions decreased. As in 2017 the main contribution to the reduction of the loan-to-deposit ratio came from the increase in customer deposits (3 p.p.), in particular from households' deposits (Chart I.4.37). The contribution of loans to customers to the LtD ratio reduction was significantly smaller than in 2017, justified to a large extent by the decrease in the stock of loans to non-financial corporations (linked to the aforementioned reduction in the stock of non-performing loans).

Chart I.4.36 • Loan-to-deposit ratio | Per cent



Sources: Banco de Portugal and European Central Bank (Consolidated Banking Data). | Notes: The Loan-to-deposit ratio corresponds to the ratio between loans to customers and customer deposits. The interpercentile range was obtained by the difference between the 95th and 5th percentile of the indicator's asset-weighted distribution.

Chart I.4.37 • Loans and deposits – Business with customers | Index 2008 = 100



Source: Banco de Portugal.

In the first half of 2018, the banking system's liabilities increased by 1.3% from December 2017. This stems mainly from the increase in customer deposits (representing a 2.2 p.p. variation in liabilities and equity) and, to a lesser extent, from the increase in deposits of other credit institutions (0.6 p.p. of variation in liabilities and equity). Conversely, the variation in funding

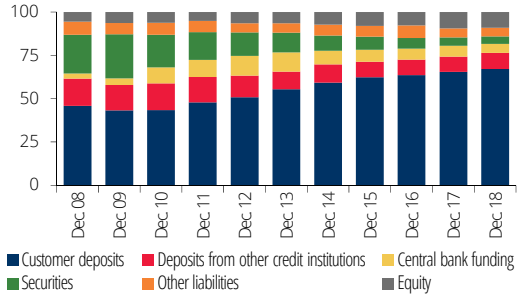
161. The asset encumbrance ratio measures the share of total assets (and collateral received) that is used as collateral to obtain liquidity. For more information on indicators to assess systemic liquidity risk, see the Special issue "Monitoring systemic liquidity risk in the Portuguese banking system – some indicators", *Financial Stability Report*, June 2018.

162. Ratio of customer loans to customer deposits. Customers are households, non-financial corporations, general government and non-monetary financial institutions.

obtained from central banks and in liabilities represented by debt securities represented -0.9 p.p. and -0.5 p.p. of liabilities and equity respectively. These changes reflect the continuation of the re-composition trend of the banking system's financing structure observed since 2010 (Chart I.4.38). Simultaneously, the reduction of interest rates implicit in funding sources continued, reflecting the continuation of the low interest rate environment (Chart I.4.39).

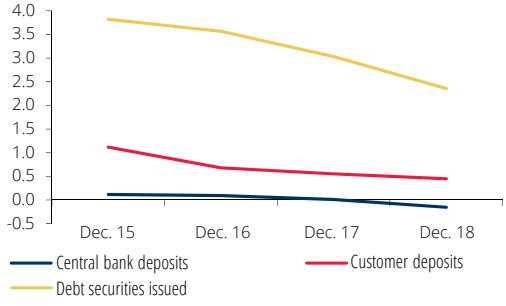
The dynamics of the financing structure in 2018 resulted in a reinforcement of the importance of customer deposits to asset financing, standing at 67% of total assets. Despite the current context of very low interest rates, households' deposits have increased markedly compared to December 2017 (3.7%), and contributed 2.5 p.p. to the rate of change of customer deposits. NFC deposits increased by 7.6%, contributing 1.6 p.p. to the rate of change of customer deposits. At the same time, demand deposits continued to increase, and time deposits continued to fall, reflecting the low opportunity cost of holding demand deposits.

Chart I.4.38 • Funding structure | Percentage of total assets



Source: Banco de Portugal.

Chart I.4.39 • Implicit interest rates of liabilities | Per cent



Source: Banco de Portugal. | Note: Implicit interest rates on liabilities correspond to the ratios between the interest paid in each class of liabilities and the respective outstanding amounts.

Net interbank funding[163] increased by 9.8% in 2018, stemming mainly from an increase in deposits of other credit institutions. At the end of 2018 net interbank funding represented 6.1% of assets net of investments and claims in other credit institutions.

The financing obtained from central banks pursued a downward trend in the course of 2018, standing at 5.3% of total assets in December. This represents a decrease of 7.3 p.p. from the record high reached during the EFAP, in June 2012. At present, funding from central banks consists mainly of funds from the second series of targeted longer-term refinancing operations (TLTRO II), reaching maturity between June 2020 and March 2021. At the beginning of March 2019, the European Central Bank announced a new TLTRO series that will start in September 2019 and end in March 2021, with each operation having a maturity of two years. However, the terms and requirements for access to TLTRO III are not yet known, in particular the cost of these operations (2.2 Financial markets).

163. Net interbank funding corresponds to funding from credit institutions net of investments and claims in such institutions.

Debt securities as a percentage of assets in the banking system fell 0.6 p.p. to 4.2% from December 2017. This took place against a backdrop where some of the banking system's main institutions issued instruments eligible for both own funds and MREL (4.6 Capital). On 13 March 2019 Law 23/2019 was published in the Portuguese Official Gazette, transposing Directive (EU) 2017/2399 amending Directive 2014/59/EU as regards the ranking of unsecured debt instruments in the insolvency hierarchy, enhancing the protection of bank deposits in insolvency or resolution situations. This type of instrument is eligible for MREL but not for own funds (Special issue "Review of the resolution framework: what is new?").

4.6 Capital

The total capital ratio remained stable

In 2018 the total capital ratio[164] remained stable at 15.1% (Table I.4.2). This development was caused by a reduction in total own funds of similar magnitude to the decrease in risk-weighted assets. The reduction in total own funds reflects a decrease in Common Equity Tier 1 capital (CET1), mitigated by the increase of Additional Tier 1 capital (AT1) and Tier 2 capital (Tier 2).

Table I.4.2 • Composition of banking system own funds | EUR million

	Dec. 2014	Dec. 2015	Dec. 2016	Dec. 2017	Dec. 2018	Δ Dec. 2014 Dec. 2018	Δ Dec. 2017 Dec. 2018
Own funds	29,480	31,083	26,449	30,640	29,434	-46	-1,206
Tier 1 capital	27,421	29,371	25,230	29,193	27,084	-337	-2,109
Common equity tier 1	27,150	28,966	24,583	28,062	25,614	-1,536	-2,448
Additional tier 1	270	405	647	1,131	1,470	1,200	339
Tier 2 capital	2,060	1,712	1,220	1,448	2,350	291	903
Risk weighted assets	240,564	233,242	215,502	202,306	194,511	-46,053	-7,795
Memorandum item: *Common equity tier 1 – fully phased in*	19,506	24,896	20,778	26,305	24,963	5,457	-1,343

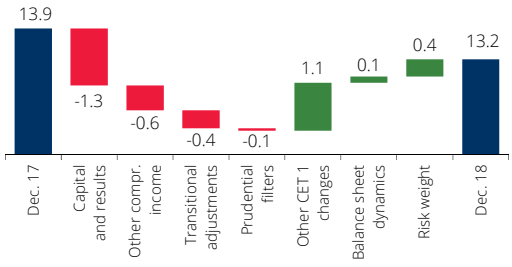
Source: Banco de Portugal

The CET1 ratio[165] decreased by 0.7 p.p. to 13.2% at the end of 2018 (Chart I.4.40). This development partly reflected a number of relevant extraordinary events, including the change at the end of 2018 of the parent company of the group to which Novo Banco belongs (to become LSF Nani Investments S.à.r.l.) for purposes of prudential supervision. The decline in the CET1 ratio was accompanied by the increase in heterogeneity among banking system institutions (Chart I.4.41). In the period between January and September 2018 the ratio was closer to the euro area's median, which also fell, the same being true for the total capital ratio.

164. Ratio of total own funds to risk-weighted assets.

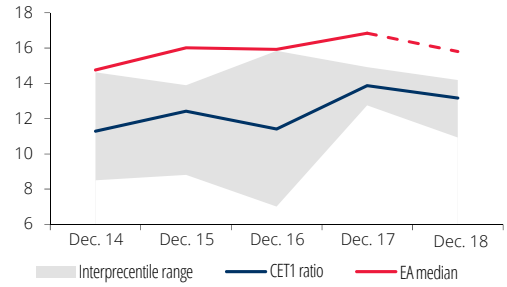
165. Ratio between Common Equity Tier 1 capital and risk-weighted assets.

Chart I.4.40 • CET 1 ratio – Contributions
| Per cent and percentage points



Source: Banco de Portugal. | Note: The CET 1 ratio corresponds to the ratio between Common Equity Tier 1 capital and risk-weighted assets.

Chart I.4.41 • CET 1 ratio
| Per cent



Sources: Banco de Portugal and European Central Bank (Consolidated Banking Data). | Notes: The interpercentile range was obtained by the difference between the 95th and 5th percentile of the indicator's asset-weighted distribution. The December 2018 euro area median refers to the September 2018 figure since end-2018 data are not available.

For the regular business of the banking system, the 'Capital and earnings' component made a negative contribution to the change in the CET1 ratio due to the lag in the recognition of positive results attributable to the parent company of some institutions. This results from the regulatory provisions stating that losses are recognised in own funds in the current period and profits must meet a set of conditions for them to be recognised in own funds, namely the financial statements must be approved at a general meeting and by the auditor (Article 26(2) of the CRR). Thus, part of the (positive) 2018 results are already reflected in own funds, but a significant part of the results generated could be recognised in the first quarter of 2019, depending on the dividend policy adopted by the institutions.

The capital and earnings component was further affected by the reclassification of part[166] of the financial assets in accordance with IFRS 9, implying the recognition of losses in retained earnings. The increase in fair value losses accumulated in the 'Other comprehensive income' item had a negative impact on the banking system's CET1 ratio, partly explained by the reclassification of financial instruments under IFRS 9 and fair value losses in some financial assets.

The elimination of most of the transitional provisions on own funds, established under the CRR and Directive 2013/36/EU (Capital Requirements Directive – CRD IV), which ended on 1 January 2018, had a 0.4 p.p. negative impact on the CET1 ratio in the 'Transitional adjustments' item.

The decrease in the CET1 ratio has been mitigated by the positive contribution of 'Other CET1 changes'. The evolution of this component partly reflects the triggering of the contingent capital mechanism laid down in the Novo Banco sale contracts, totalling around €1,149 million, with an impact of 0.6 p.p. on the banking system's CET1 ratio. As in 2017 this amount compensates the losses incurred by Novo Banco with the non-performing assets covered by this mechanism.

The increases observed in the AT1 and Tier 2 have essentially reflected the issues of eligible instruments completed in 2018. Haitong Bank issued instruments eligible for AT1 totalling USD 130 million. Caixa Geral de Depósitos issued €500 million of debt instruments, concluding their recapitalisation plan. Novo Banco put instruments eligible for Tier 2 on the market worth €400 million. At the beginning of 2019 BCP issued €400 million eligible for AT1. In addition to

166. Losses associated with the reclassification of financial assets for fair-value portfolios through other comprehensive income are recognised under accumulated other comprehensive income.

reinforcing the institutions' own funds, these instruments are important for the fulfilment of future MREL requirements.

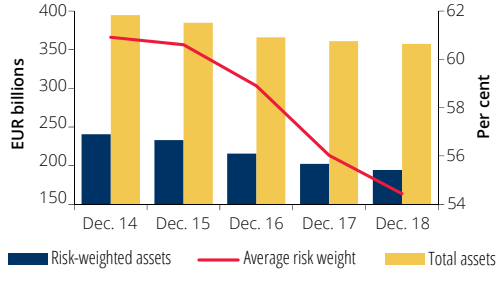
The prudential leverage ratio[167] decreased by 0.5 p.p. to 7.3%, reflecting the aforementioned lower Tier 1 capital, above the slight decrease in total banking system exposure. Despite this decrease, this percentage was far above the minimum benchmark defined by the Basel Committee on Banking Supervision (3%). Considering the sample of institutions considered in the Risk Dashboard published by the EBA, the Portuguese banking system was slightly above the median.

The average risk weight dropped against a background of decreases in risk-weighted assets

The average risk weight[168] continued the decreasing trend observed in recent years, decreasing by 1.6 p.p. in 2018 to 54.4% (Chart I.4.42). This reduction reflected the decrease of risk-weighted assets (RWA) by around 3.9%. The decrease of the latter results, on the one hand, from a reduction in corporate exposures and defaulted exposures,[169] namely from the past-due component of non performing loans. On the other hand, the higher weight of euro area government debt on assets, the risk weight of which is zero, contributed around 1.0 p.p. to the average risk weight decrease.

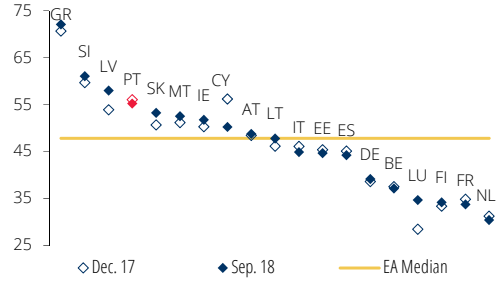
Despite the decrease in the average risk weight, the Portuguese banking system still has one of the highest euro area weights (Chart I.4.43). In September 2018, the Portuguese banking system had the fourth highest average risk weight. However, among the banking systems above the median, only Portugal and Cyprus recorded a reduction in this indicator.

Chart I.4.42 • Average risk weight – Contributions



Source: Banco de Portugal. | Note: The average risk weight corresponds to the ratio between the risk-weighted assets and total assets.

Chart I.4.43 • Average risk weight – International comparison | Per cent



Sources: Banco de Portugal and European Central Bank (Consolidated Banking Data). | Note: The average risk weight corresponds to the ratio between the risk-weighted assets and total assets.

167. The prudential leverage ratio is the ratio of Tier 1 capital to total exposure.

168. The average risk weight corresponds to the ratio of risk-weighted assets to total assets.

169. Exposures for which capital requirements are calculated are assigned to the exposures classes set out in Article 112 of the EU Regulation 575/2013 (Capital Requirements Regulation – CRR).

Box 1 • Brexit: Risks and mitigating factors from the viewpoint of financial stability

This analysis makes use of information available up to 31 May 2019. Subsequent developments are not reflected in the text.

Following the United Kingdom's decision to leave the European Union (EU) and the start of procedures to implement it (known as "Brexit"), the EU began a process of identifying the main sources of risk to financial stability arising therefrom and adopting mitigation measures for those risks. The timing of the United Kingdom's withdrawal from the EU is highly uncertain[170], as are the terms under which this withdrawal could take place. Also, there is no precedent for reversing such deep political and economic integration, which could inform an estimate of the structural impact on the UK and EU-27 economies (i.e. the 27 Member States of the European Union, considering the United Kingdom as a third country).

Among the possible forms that Brexit might take, the United Kingdom's withdrawal from the EU without a previous agreement of its terms between the two parties (a scenario commonly called "no-deal Brexit") will undoubtedly be the most disruptive situation and could involve higher costs, which are also more difficult to estimate[171]. Therefore, many mitigation measures adopted by the EU and United Kingdom authorities address this worst-case scenario. Naturally, the EU's initiatives were taken without prejudice to any contingency measures at national level.

The impact of Brexit on the Portuguese economy could materialise mainly through two channels. On the one hand, through trade, given the direct relationships between the two countries, since the United Kingdom is one of the main destination markets for Portuguese exports. On the other hand, in a no-deal scenario, through increased turbulence in the financial markets. This increased turbulence could lead to the reversal of (i) the low risk premia environment, (ii) the high valuations in the capital markets and (iii) the low volatility in various segments of the financial markets, with a possible impact on the banking system and possible contagion to the sovereign debt markets, thereby intensifying risks to financial stability. The countries with higher public indebtedness levels (such as Portugal) are particularly vulnerable to reassessments of risk premia. However, to date, regarding risks linked to turbulence in the financial markets, the impact has appeared mainly in the foreign exchange market (through the devaluation of sterling)[172].

170. In its 10th of April 2019 meeting, the European Council decided to extend the deadline for the exit of the United Kingdom (UK) from the European Union until the 31st of October of 2019, given the following conditions: (i) In the event that the United Kingdom had not held elections to the European Parliament and had not ratified the withdrawal agreement by 22 May 2019, the withdrawal would take place on 1 June 2019; and (ii) if the United Kingdom ratifies the agreement before 31 October 2019, the withdrawal will take place on the first day of the month following the completion of the ratification procedures. Note that the transition period foreseen in the withdrawal agreement is the end of 2020.

171. Additionally, please see two editions of the Banco de Portugal's Economic Bulletin, in October 2016 Box 2.1 – "The economic impact of the United Kingdom's withdrawal from the European Union" (Brexit) and Box 1 – "Developments in the United Kingdom's departure from the European Union (Brexit) and its impact on the British economy so far", published in May 2019.

172. In this regard, the European Central Bank (ECB) and the Bank of England have signed a cooperation agreement guaranteeing liquidity supply, respectively, in euros and sterling, in case of turbulence in the foreign exchange market.

Furthermore, adverse effects may also be expected on economic agents' confidence. In addition to these direct effects, the second-order impacts, through the effect that Brexit could have on other countries of importance to the Portuguese economy, should also be considered.

In terms of the risks that originate from euro area financial institutions' direct exposures to the United Kingdom, an analysis by the ECB[173] concludes that if these risks materialised they would have a limited immediate impact, affecting specific institutions. In the case of the financial institutions with head office in Portugal, in December 2018, direct exposures represented 0.7% of total assets. Thus, Brexit is not expected to have a material direct impact[174], even in the case of no deal.

Regarding the continuity of the existing contracts at the time of the United Kingdom's withdrawal from the EU, various segments of the financial system are at stake. The aforementioned ECB analysis refers in particular to the following risks: (i) the clearing of derivatives through central clearing counterparties (CCPs) located in the United Kingdom; (ii) derivative contracts between counterparties of the United Kingdom and the EU and not cleared through CCPs, often known as uncleared derivatives; (iii) the eligibility of the financial instruments issued under British law, which are used by the euro area financial institutions to comply with the minimum requirement for own funds and eligible liabilities (MREL); (iv) insurance contracts; and (v) data transfer.

In regard to the financial instruments' eligibility for compliance with MREL, currently underpinned by the common regulatory resolution framework[175], financial institutions have been asked to issue these instruments with clauses under the law of the EU-27 countries or to introduce new clauses with these characteristics into the existing contracts. Furthermore, the Single Resolution Board (SRB) will use a case-by-case approach, allowing the extension of the transitional periods for the most affected banks.

In terms of insurance contracts, the national supervisors and firms have implemented measures to mitigate the risks, including customer portfolio transfers, establishment of third-country branches and the termination of contracts. The great majority of contracts between residents in the United Kingdom and the EU-27 will thus be covered by contingency plans and the residual risks will be chiefly in the non-life segment.

173. Please refer to the analysis published in the ECB *Financial Stability Review*, Box 6 – "Assessing the risks to the euro area financial sector from a disruptive hard Brexit".

174. Regarding the direct exposure of the financial system to residents in the UK, immediate, direct impacts could arise from the increase in capital requirements associated with those exposures or from the loss of the preferential treatment attributed to exposures to the UK's Central Government, in particular, regarding large exposure limits. In addition, in the event of a severe economic recession in the UK, an increase in the default rates of those exposures could be observed.

175. In particular, given the transposition into the UK Law of the European Directive that establishes the framework for the recovery and resolution of credit institutions and investment companies, namely the BRRD, acronym for Banking Recovery and Resolution Directive, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0059&from=EN.

Regarding the transfer of data, no material disruptions to personal data flows within the financial sector are expected, as the institutions have taken precautions and intend to use the mechanisms provided for in the legal framework, such as the use of standard contractual clauses.

The ongoing provision of services by the CCPs located in the United Kingdom is the most significant systemic risk to financial stability in the EU

The process of identifying the risks posed by Brexit, in particular in a no-deal scenario, led to the conclusion that the ongoing provision of services by the CCPs located in the United Kingdom is the most significant risk to financial stability in the EU. Indeed, taking into account the very high concentration of transactions in CCPs located in the United Kingdom, especially of interest rate derivatives, any disruptions to these operations would lead to market disturbances with a possible impact on financial stability. However, with regard to bilateral transactions, despite the importance of London as a financial hub, it has been considered that that service could be provided by institutions located in the EU-27, after an appropriate transition period.

In regard to contract continuity, the European authorities have followed various lines of action to mitigate the aforementioned risks, including: (i) urging the parties involved to take timely action to prepare for the United Kingdom's withdrawal from the EU; (ii) taking decisions conducive to the mitigation of the uncertainty over the political outcome; (iii) linking up with the UK authorities, in particular the Bank of England (BoE), to ensure a suitable transition. Table C1.1 presents some of the most significant decisions in financial services relating to preparations for Brexit.

Table C1.1 • Summary of the EU's decisions over Brexit in the area of financial services

Date	Authority	Scope
Feb. 2018	European Commission (EC)	Preparedness Notices from the EC regarding the legal repercussions of the United Kingdom transitioning to third country status.
Apr. 2018	EC/UK Treasury	Creation of a joint technical working group for risk management in the area of financial services around the date of the United Kingdom's withdrawal from the EU, chaired by the ECB's President and the Governor of the Bank of England, with representatives from the EC and the UK Treasury as observers.
Jun. 2018	European Banking Authority (EBA)	Urges financial institutions to be proactive in drawing up plans and finding solutions in the event of a no-deal Brexit.
Nov. 2018	European Commission	EC's communication on the need for a contingency action plan for a no-deal Brexit. In the field of financial services, areas identified as key include derivatives cleared through CCPs and services provided by the United Kingdom's Central Securities Depositories. The EC mandated the European supervisory authorities[176] to start preparations for cooperation agreements with the United Kingdom's supervisory authorities, so that information could be exchanged immediately after the withdrawal date in the absence of a deal.
Dec. 2018	European Commission	The EC communicates that in order to safeguard financial stability in the EU, only a low number of contingency measures need to be adopted.[177] The EC adopted the following, which will be applied from the withdrawal date, in the case of a no-deal Brexit: • Temporary and conditional equivalence decision, for 12 months, to ensure that there will be no disturbance in the central clearing of derivatives. This measure will allow ESMA to recognise temporarily central counterparties currently established in the United Kingdom.[178] • Temporary and conditional equivalence decision, for 24 months, to ensure that there will be no disturbance in the service provided by the United Kingdom's central securities depositories, allowing them to continue to provide notary and central maintenance services for EU operators.[179] • Two delegated regulations facilitating the novation, for a fixed period, of certain derivatives contracts, replacing counterparties established in the United Kingdom with counterparties established in the EU. These acts allow these (pre-EMIR) contracts to be transferred to EU-27 counterparties maintaining their exemption status, i.e. without becoming subject to clearing obligations or having margins imposed by EMIR.[180]
Feb. 2019	European Securities Markets Authority (ESMA)	Following the EC decision on the temporary and conditional equivalence of CCPs established in the United Kingdom and the establishment of the Memoranda of Understanding between ESMA and BoE,[181] ESMA grants equivalence and authorisation to three CCPs with head office in the United Kingdom to provide the respective services to counterparties located in the EU. This authorisation is effective if the United Kingdom's withdrawal from the EU takes place without a deal.[182] The CCPs covered by this authorization are LCH Limited, ICE Clear Europe Limited and LME Clear Limited.
Mar. 2019	EU Council/ European Parliament	As part of the revision of EMIR,[183] a political agreement was reached between the two co-legislators of the EU, over the creation of a supervisory framework for CCPs of third countries deemed systemically relevant to the EU, awarding functions in this regard to the ECB, the ESMA and the ESRB.[184]

176. The European supervisory authorities are the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA).
177. These measures are intended to mitigate the risks only in the areas in which the preparation measures taken by the market operators are insufficient by themselves to prevent those risks at the time of withdrawal.
178. Available at https://ec.europa.eu/info/sites/info/files/c_2018_9139_fisma_9674_en_act.pdf.
179. Available at https://ec.europa.eu/info/sites/info/files/c-2018-9138_fisma_9673_1_en_act_part1_v6.pdf.
180. Available at https://ec.europa.eu/transparency/regdoc/rep/3/2018/EN/C-2018-9122-F1-EN-MAIN-PART-1.PDF and http://ec.europa.eu/transparency/regdoc/rep/3/2018/EN/C-2018-9118-F1-EN-MAIN-PART-1.PDF.
181. Available at https://www.esma.europa.eu/press-news/esma-news/esma-agrees-no-deal-brexit-mous-bank-england-recognition-uk-ccps-and-uk-csd.
182. Available at: https://www.esma.europa.eu/press-news/esma-news/esma-recognise-three-uk-ccps-in-event-no-deal-brexit.
183. European Market Infrastructure Regulation, referring to Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories. The consolidated version of this Regulation is available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012R0648.
184. European Systemic Risk Board.

The decision to grant equivalence to the CCPs established in the United Kingdom mitigates the risk of disruption in derivatives clearing if the United Kingdom withdraws without a deal, up to a year after the date of any such event. In this way, within the one-year time frame, the additional operational risks and costs of a forced large-scale transfer of these positions to alternative CCPs in a short period of time are mitigated.

Regarding the concession of licences for the financial institutions with their head office in the United Kingdom to conduct activity in the EU-27, as well as the activity of the EU-27 institutions in the United Kingdom, the respective authorities have adopted measures to avoid congestion near the date scheduled for Brexit, and to reduce the uncertainty surrounding the necessary administrative procedures. In particular, the ECB and Banco de Portugal websites[185] provide the procedures needed for relocating banks to the EU, as well as the answers to frequently asked questions.

In turn, on 28 October 2018,[186] the BoE released information on the respective regulatory and supervisory policy on the United Kingdom's withdrawal from the EU, including the terms of the temporary authorisation regime,[187] through which the financial institutions holding the so-called "European passport"[188] can continue to operate in the United Kingdom while the legal proceedings of the authorisation request to the British authority take place after the implementation of Brexit.

In both cases, the main goal is to ensure that, in accordance with the EC and EBA recommendations,[189] the institutions prepare the transition in advance and proactively. The EBA's activity included requesting the national supervisory authorities to run surveys in their respective jurisdictions about the institutions' exposures to counterparties residing in the United Kingdom, with a special focus on derivative operations. Below are the results of Banco de Portugal's analysis into the nature of this exposure, as well as the strategies adopted by the institutions to mitigate the risk associated with Brexit.

Results of the survey on institutions resident in Portugal on their OTC derivative exposure to counterparties resident in the United Kingdom

The analysis covers all the domestic credit institutions operating in over-the-counter (OTC) derivatives (as distinct from transactions in organised markets), and it considers all such operations, including those subject to clearing through CCPs and uncleared operations in which the end counterparty is a financial institution (so-called "bilateral" contracts).

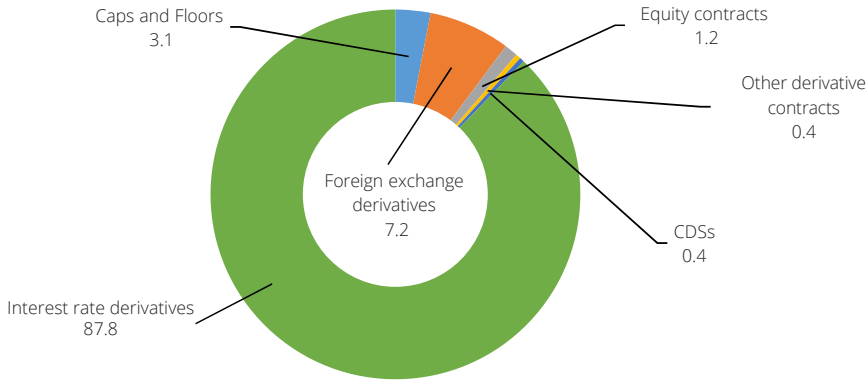
185. Available, respectively, at: https://www.bankingsupervision.europa.eu/banking/relocating/html/index.en.html and https://www.bportugal.pt/page/informacoes-sobre-o-brexit-para-o-setor-financeiro.
186. See: https://www.bankofengland.co.uk/news/2018/october/boes-approach-to-amending-financial-services-legislation-under-the-eu-withdrawal-act-2018.
187. The Temporary Permissions Regime (TPR), is available at: https://www.bankofengland.co.uk/eu-withdrawal/temporary-permissions-regime.
188. The "European passport" allows a financial institution with a licence granted in a given Member State to be authorised to provide financial services in another Member State.
189. Available at: e.

On the survey reference date[190], the positive market value of OTC derivatives operations represented 0.25% of credit institutions' assets at the end of the third quarter of 2018, while the negative market value reached around 0.39% of assets. Furthermore, the five largest banks accounted for over 90% of the total exposure.

Around a third of the contracts were booked for trading purposes, while the rest were signed off to hedge risks in the banking book or from securities issuance (a liability). In terms of trading, the institutions often chose closed-position strategies, limiting risk. With regard to hedging operations, these were largely to hedge interest rate risk on credit operations, to hedge bonds in the securities portfolio (assets) or to hedge interest rate risk on bonds issued (liabilities).

The purpose for which the operations were contracted is also reflected in the distribution of the notional value of the derivatives by type of derivative (Chart C1.1). Thus, the predominance of interest rate derivatives is clear (88%), this category may also comprise derivative contracts with limits on the maximum and minimum interest rate levels (called 'caps and floors'). The analysis also shows that the institutions bought options to hedge risks related to structured deposits, when the remuneration is indexed to the remuneration rate of bundled instruments.

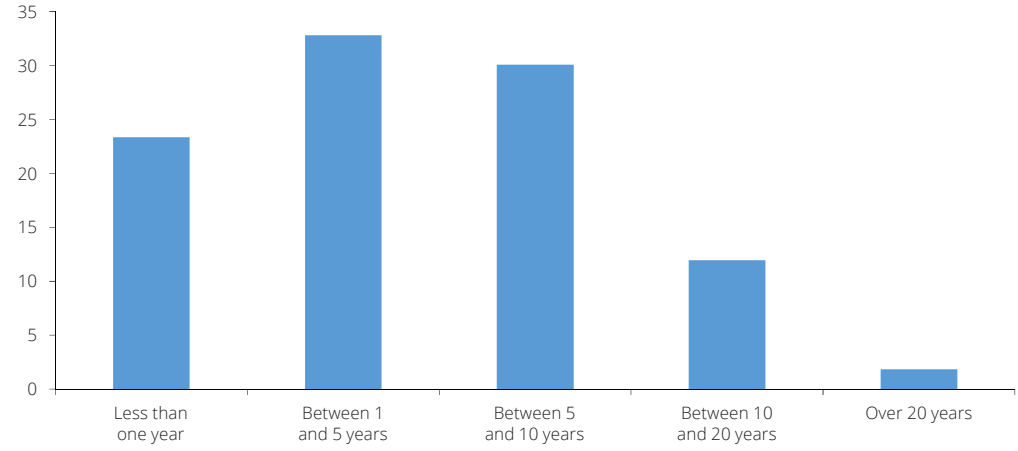
Chart C1.1 • Distribution of the notional value of derivative contracts with United Kingdom counterparties, by type | As a percentage



In terms of the distribution by maturity (Chart C1.2), the contracts reported by the institutions present an initial average maturity of 4.8 years and a residual average maturity of 4.2 years. Again, these contractual maturities reflect their underlying objective, of hedging interest rate risk on the institutions' balance sheet.

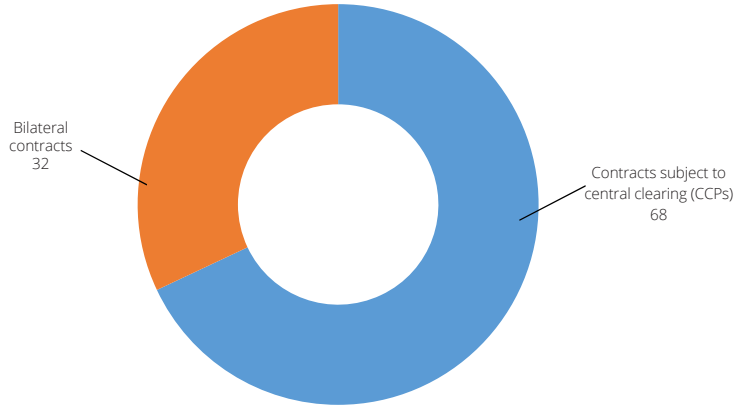
190. Survey reference date is 31 October 2018.

Chart C1.2 • Distribution of the number of derivative contracts with United Kingdom counterparties, by original maturity | As a percentage



The notional value of the operations cleared through CCPs accounted for around 68% of all derivative operations with United Kingdom counterparties, with the remainder carried out bilaterally (Chart C1.3).

Chart C1.3 • Distribution of the notional value of derivative contracts with United Kingdom counterparties – cleared in CCPs or bilaterally | As a percentage



The largest share of Portuguese institutions' exposure to United Kingdom counterparties is in interest rate derivatives (IRD), with the main purpose of hedging balance sheet risk, with around 70% of these operations cleared through CCPs. Given the provisions in the EMIR on compulsory clearing of specific derivatives in CCPs and the subsequent ESMA decisions in this area, which establish that this is compulsory for a set of IRDs, if CCPs located in the United Kingdom would no longer qualify to provide this service this would lead to a negative impact on the institutions activity.

Most of the institutions surveyed that reported the existence of transactions cleared through CCPs are not direct members of CCPs located in the United Kingdom, with the respective transactions cleared through a broker. Various institutions intend to transfer central clearing of new IRD contracts to a CCP located in the EU-27. However, given the equivalence decision taken

by ESMA, in particular regarding existing transactions, other institutions mention that they will continue to use the services of CCPs located in the United Kingdom. The institutions that carry out clearing through brokers are negotiating the transfer of contracts to brokers located in the EU-27, which often belong to the banking groups with which the Portuguese institutions already had contracts before Brexit.

In the case of existing bilateral contracts, some institutions mentioned that they were in the process of transferring these to EU-27 counterparties, allowing these new contracts to retain their exemption status, thus not becoming subject to the clearing obligations and the margins imposed by EMIR[191]. In a few cases, the institutions preferred to maintain their existing contracts. In terms of the strategy for new OTC derivative contracts, the credit institutions surveyed intend to deal with EU-27 counterparties.

As such, it can be concluded that the institutions are aware of the associated risks and the measures adopted by the European authorities. In particular, institutions (i) are undertaking novation of bilateral contracts with EU-27 counterparties and, in many cases, (ii) negotiating the transfer of pre-existing contracts of clearing through brokers between CCPs located in the United Kingdom and CCPs located in the EU-27. However, in a few cases, institutions intend to continue clearing their derivatives through CCPs located in the United Kingdom.

191. Communication of the EC in December 2018 and subsequent decisions of ESMA.

Box 2 • Risks to financial stability resulting from climate change

Since 2015, as a result of the impetus caused by the adoption of the United Nations' 2030 Agenda for Sustainable Development[192] and the Paris Agreement on climate change,[193] the theme of sustainable development has been increasing in importance on the international political agenda and mobilising important efforts in the creation of initiatives to encourage a new model of economic growth on a global scale.

In essence, the model aims for greater integration in economic policy of initiatives intended to promote the lasting prosperity of economies. Initiatives that are centred on an approach that is sensitive not only to economic issues but also environmental and social cohesion policies. In this context, it is important to discuss the responsibility incumbent upon policy-makers in terms of the definition and implementation of economic policies in order to strategically promote certain models of activity and the creation of possible incentives to realise such objectives (e.g. by way of tax legislation). Measures such as a carbon tax, for example, are essential to create a framework of incentives conducive to lower levels of greenhouse gas emissions and thus ensure the gradual transition to a more sustainable economy.

The scale of the challenges that are posed in this process to transform economies implies the transverse involvement of all aspects of society on a global scale – naturally including the financial sector. As a result, political debate has dedicated special attention to the question of the financial resources (public and private) that need to be mobilised in order to achieve this goal. In a context in which political incentives are created, it is expected that sustainable financing[194] gradually gains relevance in the transition to a new economic model and that, in parallel, the financial system is (re)positioned in the pursuit of the sustainability of its business considering the different dimensions of economic sustainability.

The European Commission estimates that the financing of such initiatives will require a high level of involvement by the financial sector in the mobilisation/reorientation of private funds, insofar as the scale (and challenges) of such investment needs greatly exceed the capacity for support by the public sector.[195] In this context, the European Commission presented an action plan in March 2018 aiming to define a comprehensive strategy to narrow the link between the financial system and the pursuit of an economic model based on the European Union's objectives for the climate and sustainable development. Against this background it adopted, in May of that year, a series of legislative initiatives,[196] namely:

- Proposal for a regulation on the establishment of a framework to facilitate sustainable investment, considering the gradual definition of a unified classification system (taxonomy) for activities that can be classified as environmentally sustainable;

192. The UN summit, held between 25 and 27 September 2015 in New York, adopted an ambitious agenda with a view to eradicating poverty whilst promoting economic, social and environmental development on a global scale by 2030. Known as the "2030 Agenda" for Sustainable Development, it includes 17 Sustainable Development Goals, based on the pillars of environment, society and governance - for more information on the "2030 Agenda", see https://www.un.org/sustainabledevelopment/sustainable-development-goals/.
193. The Paris Agreement, signed on 12 December 2015, reaffirmed the goal of keeping the average global temperature increase under 2ºC and making every effort to limit temperature increases to 1.5ºC.
194. Financing provision taking into account environmental, social and governance (ESG) factors.
195. According to the European Commission, approximately €180 billion euros will be needed each year (in 2018, such an amount would correspond to around 1% of the European Union GDP) in additional investment to reach the European Union's target for 2030 as set out in the Paris Agreement, including a reduction of 40% in greenhouse gas emissions.
196. https://ec.europa.eu/info/publications/180524-proposal-sustainable-finance.

- Proposal for a regulation[197] on disclosures relating to sustainable investments and sustainability risks, to subject institutional investors and asset managers to disclosure requirements on the integration of ESG factors in their risk management processes and advice to customers;
- Proposal for a regulation[198] on reference indices, with a view to the creation of a new category of benchmarks (including low carbon and positive carbon impact benchmarks) that provide investors with better information on the environmental footprint of their investments.

Beyond the institutional level, there is also growing interest in this theme from financial market investors (as well as from central banks in areas of reserve management) seeking to mark their investment strategies and decisions with their preferences and motivations when it comes to ESG factors, including interest in the so-called green bonds[199] issued as much by financial and non-financial companies as by sovereigns and supranational entities.[200] This new perspective on investment decisions partly reflects a growing concern with the "footprint" or benefits of investments to the real economy,[201] without neglecting the element of financial return. This profound shift in paradigm also involves a transition to a logic of very long-term investment –patient capital, which the European Commission's expert group on sustainable finance report alludes to[202] – in opposition to the short-termism inherent to the goal of maximising profits in the short term.

From a financial stability perspective, it is essential to proceed with work aimed at understanding the extent and transmission channels of the structural challenges that face the economy and financial system, in particular aiming to ensure the correct identification and corresponding management of risks resulting from climate change. Climate change is effectively a source of financial risk, usually grouped into two categories: physical risks and transitional risks.

Physical risks reflect the occurrence and growing intensity of natural disasters, phenomena able to cause, amongst other things, significant financial losses[203]. Depending on their dimension, these events can affect more circumscribed areas or produce systemic effects across the economy (e.g. damage to productive structures, increased social costs related to healthcare and unemployment) and consequently to the financial system. These events also prove the existence of potential risks that may fall on the sustainability of the financial system and on financial stability, such as a liability for high and unexpected costs with compensation payments, the reduction in value of collaterals or the exposure to certain assets that are more vulnerable to the risks of climate change and consequent materialisation of credit risk, with a potential impact on financial strength. Consequently, this reinforces the need for the financial system to incorporate ESG factors in decision-making, risk assessment and price establishment processes.

197. Proposal for a regulation amending Directive (EU) 2016/2341 of the European Parliament and of the Council of 14 December 2016, on the activities and supervision of institutions for occupational retirement provision (IORPs).
198. Proposal for a regulation amending Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016, on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No 596/2014.
199. Green bonds are financial instruments aimed at financing sustainable projects.
200. Although there is no taxonomy for a green bond, an estimate for the size of its market is mentioned in the Climate Bonds Initiative report, which states that at a global level, issues between 2007 and 2018 totalled approximately USD 521 billion, of which 36% were in the European market (excluding supranationals). See https://www.climatebonds.net/resources/reports/green-bonds-state-market-2018.
201. So-called "impact investing".
202. High Level Expert Group on Sustainable Finance (2018). "Financing a Sustainable European Economy" - see https://ec.europa.eu/info/sites/info/files/180131-sustainable-finance-final-report_en.pdf.
203. Over the last ten years, the number of natural catastrophes (physical risks) and their average economic cost at a global level exceeded that of the last 30 years. For further detail, please refer to Munich Reinsurance Company (2019), "Natural Catastrophe Review 2018" Geo Risks Research, NatCatSERVICE.

Transition risks largely reflect the uncertainty in relation to the way in which the change to a low-carbon economy will occur and in particular the speed of transition (soft vs hard landing). In this respect, we highlight possible fiscal changes relating to carbon taxes and the stipulation of CO2 emissions that may alter the rate of technological changes tending towards a significant reduction in emissions. To a greater or lesser extent, all these changes are capable of bringing about material changes to the financial system (e.g. through sudden variations in asset value), with such changes being greater the faster the process is. However, in a benign scenario, this transition will be gradual and predictable in such a way as to avoid disruptions (e.g. sudden revaluation of certain asset prices and mass sales), guaranteeing that adjustment costs are bearable. It should nevertheless be noted that the longer the transition period, the more significant the materialisation of physical risks will tend to be.

It is important to mention that, in the current framework, an assessment of the potential implications of this type of adjustment on financial stability is not yet very developed at European level, with many associated challenges. In addition to the aforementioned issues related with the poor quality and lack of information available (e.g. levels of CO2 emissions by sector) and with its (non-)existent taxonomy, the integration of climate factors in the traditional models of economic projections and scenario analyses cause practical difficulties, beginning with the characteristics of those factors themselves (e.g. associated with very long time horizons, such as decades, the non-linearity of impacts). Furthermore, not having observed such adjustments in the past, it is very difficult to make assumptions with regard to: (i) the progressive reconversion of selected activity sectors to a low-carbon economy and (ii) changeover speeds conditioned either by technological developments or by economic policy decisions. Despite such difficulties, the first studies have started to appear that aim to quantify the impact of certain energy transition scenarios on the financial sector.[204]

There are also important challenges in terms of the prudential regulation of the financial system. As the European Commission[205] and the report by the expert group formed by the Commission[206] have highlighted, it is important to reflect on the possible existence of provisions in the legislation and prudential regulation – as well as at an accounting standards level – which may create unjustified obstacles to long-term investments and therefore to sustainable development goals. It is of particular interest to evaluate (and quantify) whether the prudential rules allow an adequate reflection on the capital requirements of the institutions exposed to the financial risks resulting from climate change (e.g. exposure to more vulnerable sectors) or if changes to the framework are necessary and justified – without distorting or jeopardising the credibility and suitability of the prudential rules, based on the definition of risk-adjusted requirements.

204. See Robert Vermeulen & Edo Schets & Melanie Lohuis & Barbara Kolbl & David-Jan Jansen & Willem Heeringa, 2018. "An energy transition risk stress test for the financial system of the Netherlands," DNB Occasional Studies 1607, Netherlands Central Bank, Research Department. See also "A call for action Climate change as a source of financial risk," NGFS, April 2019. Additionally, consider "A call for action Climate change as a source of financial risk," Network for Greening the Financial System, April 2019. This group was created in December 2017 and currently comprises 36 members (central banks and supervisors, of which 13 of the Eurosystem, including Banco de Portugal and the European Central bank), with the central objective of defining and promoting good practices to be implemented and performing or commissioning analytical work on sustainable financing.

205. Communication from the Commission to the European Parliament, the European Council, the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions – Action Plan: Financing Sustainable Growth, 8 March 2018 – see https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN.

206. High Level Expert Group on Sustainable Finance (2018). "Financing a Sustainable European Economy" – see https://ec.europa.eu/info/sites/info/files/180131-sustainable-finance-final-report_en.pdf.

Box 3 • A cyclical systemic risk indicator in Portugal

Systemic risk is commonly described as 'a risk of disruption in the financial system with the potential to have serious negative consequences for the internal market and the real economy'.[207] Against this background, monitoring systemic risk developments is crucial to the conduct of macro-prudential policy. This risk is usually assessed from a structural or a cyclical perspective. An assessment of structural systemic risk is based on the analysis of risk distribution among financial agents, focusing inter alia on the risk of failure of systemically important institutions or linkages between financial institutions. In turn, an assessment of cyclical systemic risk is based on the analysis of a build-up of systemic risk over time, capturing the tendency of financial institutions to take excessive risk during favourable economic periods and to display considerable risk aversion in periods of economic recession in a way that considerably affects the supply of credit to the economy. This potential excessive constraint on the supply of credit during unfavourable economic periods may affect the financing of viable investments by non-financial corporations and further slow down private consumption, possibly hampering economic growth in the medium term. In turn, excessive risk-taking in 'favourable' periods may lead to the build-up of macro-financial imbalances in other institutional sectors.

Cyclical systemic risk indicator

This box assesses cyclical developments in systemic risk in the Portuguese financial system using a composite indicator developed by Lang et al. (2019). This domestic systemic risk indicator (d-SRI) aims to capture the build-up of cyclical imbalances in the non-financial private sector of a given country in a timely manner.

On the basis of evidence from euro area countries, the d-SRI is defined as a weighted average of several normalised sub-indicators which individually have good signalling properties for the build-up of cyclical vulnerabilities before systemic banking crises.[208,209,210] This early warning property is extremely important for macro-prudential policy, as it helps identify periods where the resilience of the financial system may have to be enhanced in order to limit the impact of a possible materialisation of cyclical systemic risk. Another important property of this indicator is that it easily identifies the drivers behind developments in cyclical systemic risk at each point in time.

In order to cover different sources of potential build-up of cyclical systemic risk in the Portuguese financial system, at least one indicator was selected out of four of the seven risk categories suggested in Recommendation ESRB/2014/1 of the European Systemic Risk Board to monitor cyclical systemic risk.[211] The categories of the Recommendation considered are: (a) credit developments, (b) potential overvaluation of property prices, (c) external imbalances, and (d) private sector debt burden. In its essence, the d-SRI, as proposed by Lang et al. (2019), also

207. Definition of systemic risk pursuant to Regulation (EU) No 1092/2010 of the European Parliament and of the Council.

208. The composite indicator is formally defined as $IRSD_t = \sum_{j=1}^{n} \omega^j \cdot \tilde{x}_t^j$ where t represents the time frequency, ω^j represents the weight of the sub-indicator j in the composite indicator, $\tilde{x}_t^j$ represents the normalised sub-indicator and n represents the number of sub-indicators included in the composite indicator.

209. A systemic banking crisis is a financial stress episode in the banking system resulting in widespread loss for banks that may affect economic activity by tightening credit standards during an economic recession, thereby increasing its intensity and duration.

210. For more details on the properties of the indicators for signalling systemic financial crises, see Lo Duca et al. (2017).

211. For an overview of the recommended risk categories, see Recommendation of the European Systemic Risk Board on guidance for setting countercyclical buffer rates (ESRB/2014/1).

includes the equity price index as sub-indicator in order to cover the 'potential mispricing of risk' category. However, owing to low liquidity in the Portuguese capital market and its reduced size, only the version of the composite indicator that excludes this sub-indicator is analysed. The 'strength of bank balance sheets' category in the list of categories set out in the Recommendation is also excluded as it includes indicators which define the current level of resilience of the banking system against the materialisation of risks, as opposed to the build-up of risk per se. The seventh category of indicators to be monitored according to the Recommendation is made up of measures derived from models that combine the credit-to-GDP gap with indicators of the other categories. This category therefore includes composite indicators – such as the d-SRI – and for that reason was not taken into account when building this cyclical systemic risk indicator. In turn, two indicators were selected for the 'credit developments' category, as opposed to the other categories, for which only one indicator was chosen. This is mostly due to the prominent role played by credit developments in developments in the financial system that resulted in systemic financial crises. The selection of two indicators from this category also took into account potential changes to the funding structure of the non-financial private sector, making it possible to detect a shift from financial intermediation as an exclusively banking activity carried out by resident institutions to financial intermediation by any type of financial institution and/or from any geographical location. To this end, both an indicator based on credit by resident financial institutions and an indicator based on total credit were selected.[212] The five sub-indicators chosen are shown in Table C3.1 in annualised terms.[213]

Table C3.1 • Sub-indicators and d-SRI composition

Risk category	Indicators	Weight
Credit developments	Change in the bank credit-to-GDP ratio over a two-year period	45%
	Rate of change in real total credit (deflated by the harmonised index of consumer prices) over a two-year period	5%
Potential overvaluation of property prices	Change in the residential real estate price-to-income ratio over a three-year period	23%
External imbalances	Current account deficit-to-GDP ratio	22%
Private sector debt burden	Change in the debt service-to-income ratio over a two-year period	5%

Notes: Changes in an indicator over a period of N years equal $x_t - x_{t-N}$. The rate of change in an indicator over a period of N years equals $(\frac{x_t - x_{t-N}}{x_{t-N}}) \times 100$.

Sub-indicators are normalised in order to operationalise the indicator. This normalisation consists in subtracting from each sub-indicator the value of its median and dividing by the standard deviation. These statistics are calculated from a sample including all euro area countries in order not to bias the results in favour of developments specific to the country or time period available, i.e. $\tilde{x}_t = \frac{x_t - {x_t}^M}{{x_t}^{SD}}$ where $\tilde{x}_t$ represents the normalised indicator and ${x_t}^M$ and ${x_t}^{SD}$ represent the median and standard deviation of the indicator respectively. The d-SRI therefore reflects the weighted average deviation of its sub-indicators against their historical

212. Credit includes loans and debt securities.

213. Obtained by dividing the value of the indicator by the number of N years, except for the current account deficit-to-GDP ratio, where the sum of the four more recent quarters for deficit and GDP is used to obtain a ratio of annual flows.

medians as multiples of historical standard deviations.

Weights were chosen by running a linear regression of a vulnerability indicator, which is set to 1 during a vulnerable period and to 0 otherwise, on the sub-indicators chosen for the d-SRI. For the purpose of this exercise, a vulnerable period is defined as the 12 to 5 quarters before a systemic financial crisis.[214] This dependent variable is chosen to provide early warning signals for episodes of financial stress in order to give financial institutions enough time to carry out the adjustments needed to absorb losses during a systemic financial crisis. The coefficients estimated for each sub-indicator are used to define the weight of each one in the composite indicator, imposing a minimum weight of 5%. The weights are shown in the third column of Table C3.1, with a set of three sub-indicators accounting for 90%: bank credit-to-GDP ratio, residential real estate price-to-income ratio and current account deficit-to-GDP ratio. The remaining 10% are equally divided between debt service to income and real total credit. The distribution of weights for the composite indicator highlights the factors behind several of the systemic financial crises that occurred in euro area countries, i.e. credit developments, overvaluation of residential real estate prices and external indebtedness.

Developments in the cyclical systemic risk indicator in Portugal

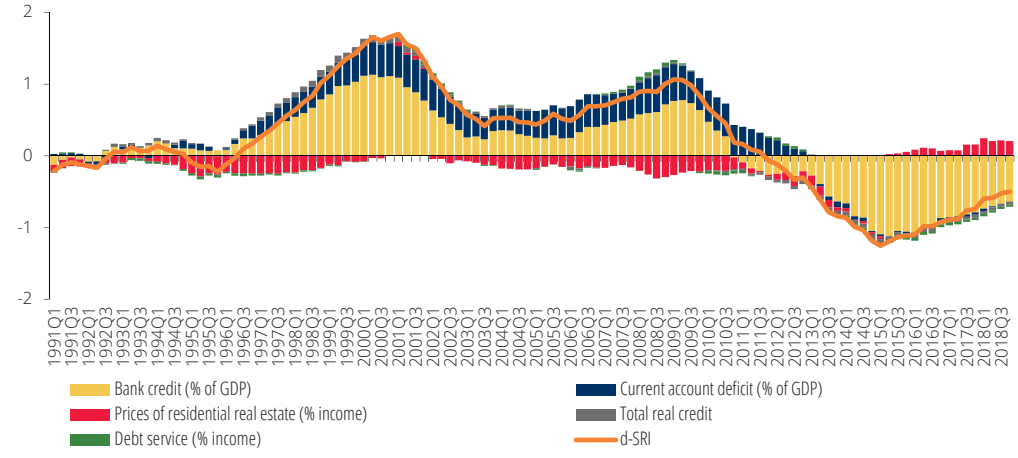
Chart C3.1 shows the d-SRI for Portugal broken down into contributions from its sub-indicators from the start of 1991 to the fourth quarter of 2018.

In Portugal, the start of the 1990s was marked by the completion, in 1992, of the financial liberalisation process that had begun in the mid-1980s. This period was also characterised by high rates of economic growth and the convergence process towards income levels prevalent in the richest countries of the European Union following the country's entry into the European Economic Community (EEC) in 1986. Despite these profound changes in the Portuguese financial system, the composite indicator did not signal the build-up of cyclical systemic risk during this period.

The second half of the 1990s was marked by the nominal convergence of the Portuguese economy in preparation for the country's participation in the euro area. Within this context, fiscal and monetary policies were conducted in order to maintain nominal stability and therefore comply with the convergence criteria. The sharp decline in the inflation rate resulted in a strong fall in long and short-term nominal interest rates, which – together with the liberalisation of the financial sector – provided more favourable financing conditions and reduced liquidity constraints for domestic economic agents. Prospects of greater economic and financial integration and expectations of a sustained increase in per capita income – together with prospects of structurally lower and less volatile interest rates – stimulated households and non-financial corporations to frontload their consumption and investment expenditure. This level of expenditure was mainly funded by bank loans and had a significant impact on the country's external and domestic indebtedness levels during this period, an event detected by the cyclical systemic risk indicator which signals the build-up of vulnerabilities related to the ratios of the current account deficit and bank credit to GDP. Against this background, housing demand by households was particularly buoyant. Nevertheless, the transition to a new economic equilibrium occurred without any signs of an overvaluation of asset prices, in particular residential real estate prices. Indeed, developments in residential real estate prices made a negative contribution to developments in the d-SRI during this period.

214. The systemic financial crises taken into account are systemic crises relevant to macro-prudential policy resulting from purely domestic factors or from a combination of domestic and external factors, as identified in Lo Duca et al. (2017) for the euro area countries, the United Kingdom, Sweden and Denmark.

Chart C3.1 • Developments in the d-SRI and breakdown of contributions by sub-indicator | Standard deviations from the median



Sources: European Central Bank, Bank for International Settlements (BIS) and Banco de Portugal calculations. | Notes: Latest observation: 2018Q4 under the assumption that the sub-indicator for the debt service-to-income ratio remains unchanged from 2018Q3. The contribution of each sub-indicator to developments in the d-SRI is obtained by multiplying the value observed in the sub-indicator by its weight.

From the second half of 2000 onwards, euro area economic activity moderated, reflecting a weakening external demand partly determined by the increase in oil prices in 2000, the signs of a strong deceleration of the US economy from 2001 onwards and instability in international financial markets. Against this background, the process of real convergence of the Portuguese economy was interrupted and domestic demand slowed down as a result of a continued deterioration in consumer confidence and the need to service the debt obtained in previous years. From 2001 to 2003, bank credit to the non-financial private sector tended to decelerate, even though rates of change remained above disposable income and nominal GDP. However, the indebtedness ratio of the non-financial private sector continued to increase, albeit at a slower pace. This slowdown in credit granted reflected both high levels of indebtedness and other factors behind the demand for credit, such as less buoyant economic activity or a climate of uncertainty worldwide. This led to a decrease in consumption and investment, which negatively affected the outlook for economic developments in Portugal. This trend of deceleration in credit was a key factor behind the strong adjustment in the cyclical systemic risk indicator from 2001 to 2003. At the same time, from 2000 to 2003, an adjustment was observed in the current account deficit, mainly reflecting the slowdown in domestic demand, which made a positive contribution to the decline in the level of cyclical systemic risk compared with the previous period. Nevertheless, this adjustment in the deficit still led to a continued accumulation of external deficits, contributing to the maintenance of the upward trend observed in Portuguese external debt.

The period between the end of 2003 and the start of the global financial crisis was characterised by a further intensification of vulnerabilities, albeit at a slower and more gradual pace than observed from 1996 to the end of 2000. Global economic activity strengthened during this period, with domestic demand making a relatively strong contribution in Portugal. This resulted in a sharp worsening of the current account deficit – due to a deterioration of the goods account – and of non-financial private sector indebtedness. Underlying this indebtedness was the decrease in liquidity constraints associated with the historically low level of interest rates prevailing in the euro area. In 2006 the gradual increase in the ECB's key interest rates, which had begun in December 2005, was not fully incorporated in the expectations of economic agents, as bank margins remained compressed. In addition to this compression, credit standards used to assess customers' creditworthiness were eased – e.g. through longer debt maturities or greater flexibility in the loan-to-value ratio – which, together with financial

innovation in the credit market, sustained the increase in non-financial private sector indebtedness. This period of increased vulnerability was captured by the composite indicator, which identified developments in bank credit and in the current account deficit as the factors contributing the most to an environment of increased cyclical systemic risk from 2003 to mid-2009. However, real estate prices were not overvalued during this period, with the cumulative change in the house price index standing at around half of the change in the consumer price index from 2001 to 2007.

The period from 2009 to 2015 reflected a sharp slowdown in global economic activity, amid an intensification of tensions in international financial markets, arising from the global financial crisis and the euro area sovereign debt crisis. During this period, an abrupt correction was observed in the cyclical systemic risk indicator. This indicator, broken down into contributions from its sub-indicators, identifies a change in the main factors behind developments in cyclical systemic risk in Portugal from 2013 onwards, as detailed below. The decline in domestic demand, arising from unfavourable economic conditions, led to a fall in aggregate demand, which resulted in a sharp drop in imports of goods and services. This, together with an increase in exports, helped reach a current account balance in 2013. Indeed, the contribution of this indicator to cyclical systemic risk is very small from this date onwards. The supply of credit continued to be affected by a high level of risk aversion among banks, against a background of high uncertainty and high levels of indebtedness, as well as a deteriorating financial situation of non-financial corporations and households, extending the process of adjustment in the level of indebtedness of the non-financial private sector. Following severe constraints in access to wholesale debt markets by Portuguese banks at the start of this period, the cost of financing for banks remained high, although deposit interest rates declined, benefiting from the ECB's monetary policy measures. Negative developments in the bank credit-to-GDP ratio made a significant contribution to the decline in the level of systemic risk from 2013 onwards. In addition, from the start of the global financial crisis, a correction in residential real estate prices against a background of price undervaluation justified the more pronounced impact of the sub-indicator for the residential real estate price-to-income ratio on the decline in cyclical systemic risk.

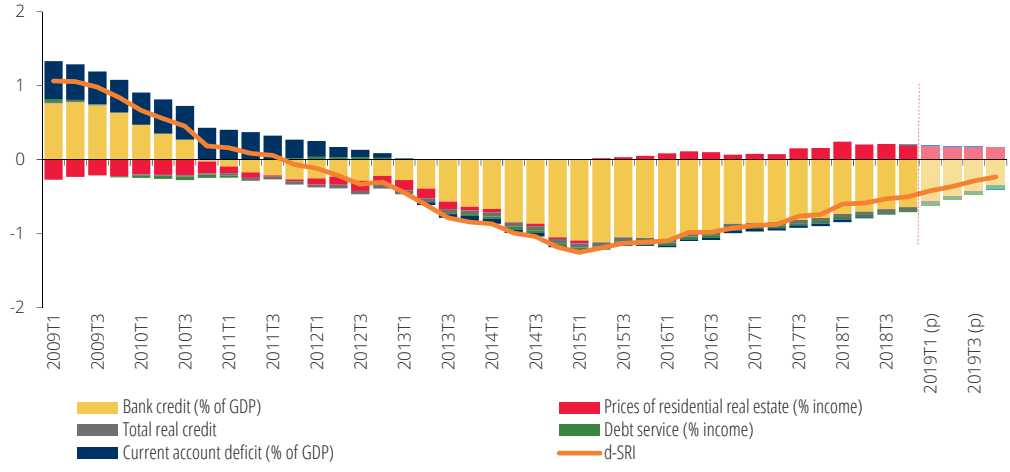
A period of recovery – but not expansion – of the credit cycle began in 2015, following the financial crisis and the sovereign debt crisis in the euro area. This period was characterised by more robust internal and external demand and improved monetary and financial conditions, supported by the set of monetary policy measures adopted by the ECB. In addition, the deleveraging process of the non-financial private sector, which had begun in 2009, continued from 2015 to 2018, but at a slower pace due to the stabilisation of banks' financing conditions, historically low interest rates and the improvement in confidence indicators and the economic growth outlook. These developments are reflected in a reversal of the path of the d-SRI, mainly motivated by developments in the sub-indicator for bank credit. Alongside this recovery in the credit market, the sub-indicator for residential real estate prices – which until 2015 had contributed negatively to the cyclical systemic risk environment – reversed its contribution in line with the recovery in residential real estate prices in Portugal observed since the fourth quarter of 2013 and evidence of a slight price overvaluation in aggregate terms since the first quarter of 2018.[215] Although historically this sub-indicator is not an early warning indicator for signalling cyclical systemic risk in Portugal, this is the case for many euro area countries, and its large weight makes the composite indicator robust to developments in the Portuguese residential real estate market. In turn, the sharp drop in external financing needs – one of the most important aspects of the adjustment process in the Portuguese economy following a strong adjustment in domestic demand and export growth – explains the very small contribution the current account deficit continued to make during this period.

215. For more details on real estate price developments, see the December 2018 issue of the *Financial Stability Report* of Banco de Portugal.

Short-term outlook for the systemic risk indicator

Despite the early warning properties of the d-SRI for signalling risk, its use in monitoring cyclical systemic risk in real time may be conditioned by the time lag (up to three quarters) in the release of a number of underlying indicators. In order to have the indicator in a timely manner, the d-SRI was calculated using the projections of Banco de Portugal for the Portuguese economy published in the December 2018 issue of the *Economic Bulletin*, corresponding to Banco de Portugal's contribution to the Eurosystem's projections published by the ECB. Chart C3.2 shows the version of the d-SRI incorporating one year of projections for the sub-indicators up to the fourth quarter of 2019.

Chart C3.2 • Projection of d-SRI and breakdown of contributions by sub-indicator | Standard deviations from median



Sources: European Central Bank, Bank for International Settlements (BIS) and Banco de Portugal calculations. | Notes: Latest observation: 2018Q4 under the assumption that the sub-indicator for the debt service-to-income ratio remains unchanged from 2018Q3. The dashed red line indicates the start of the projection exercise. Assumptions implied in the projection for the d-SRI are: (i) the contribution of debt service to income remains constant over the projection horizon, and (ii) the rate of change in total credit equals the rate of change in bank credit.

In a context of increasing disposable income and continued low interest rates, the house price index is expected to continue to grow above the consumer price index, although a slight loss of momentum is projected for the residential real estate market. Within the context of the current and projected recovery in disposable income, the loss of momentum in residential real estate prices is reflected in a continued small contribution made by the residential real estate price-to-income ratio to the increase in cyclical systemic risk over a one-year projection horizon. According to the projections, the current account deficit (as a percentage of GDP) will remain at low levels, which explains the equally small contribution made by this sub-indicator to developments in the d-SRI up to the fourth quarter of 2019. In addition, the downward path observed in the indebtedness levels of households and non-financial corporations to disposable income and GDP, respectively, is projected to continue, albeit at a gradually slower pace than in the more recent past. This translates into an increasingly smaller contribution made by the bank credit-to GDP ratio to the decline in the level of cyclical systemic risk.

Although all the uncertainty surrounding forward-looking analyses must be taken into account, this exercise shows that the composite indicator for cyclical systemic risk in Portugal will remain on a path of recovery in the short term, but at levels which are still considerably below those observed before the economic and financial crisis. This situation mainly reflects greater buoyancy in demand for credit by the non-financial private sector following the recovery in economic activity and in confidence levels.

References

Bonfim, D. and Monteiro, N. (2013). "The implementation of the countercyclical capital buffer: rules versus discretion". Banco de Portugal, *Financial Stability Report*, November, pp. 93-118.

Lang, J. H., Izzo, C., Fahr, S., & Ruzicka, J. (2019). "Anticipating the bust: a new cyclical systemic risk indicator to assess the likelihood and severity of financial crises". *ECB Occasional Paper No. 219*.

Detken. C., Weeken, O., Alessi, L., Bonfim, D., Boucinha, M., Castro, C., Frontczak, S., Giordana, G., Giese, J., Jahn, N., Kakes, J., Klaus, B., Lang, J., Puzanova, N., Welz, P. (2014). "Operationalising the countercyclical capital buffer: indicator selection, threshold identification and calibration options". *ESRB Paper Series No. 5*.

Lo Duca, M., A. Koban, M. Basten, E. Bengtsson, B. Klaus, P. Kusmierczyk, J. H. Lang, C. Detken (editor), T. Peltonen (editor) (2017), "A new database for financial crises in European countries". *ECB Occasional Paper No. 194*.

Recommendation of the European Systemic Risk Board (ESRB/2014/1) on guidance for setting countercyclical buffer rates, available at: https://www.esrb.europa.eu/pub/pdf/recommendations/2014/140630_ESRB_Recommendation.en.pdf?5a01834f8acec12b2e6590522871b024.

Box 4 • Assessment of the macroprudential Recommendation within the legal framework of new credit relating to residential immovable property and consumer credit

The *Macroprudential Recommendation on new credit agreements for consumers – progress report* was published on 29 May,[216] as a first analysis of the first few months since this Recommendation entered into force.

In February 2018 Banco de Portugal announced the entry into force of a macroprudential measure to govern the criteria used by the institutions when granting new credit relating to residential immovable property, credit secured by a mortgage or equivalent guarantee, and consumer credit. This measure was implemented in July 2018 and seeks to ensure that credit institutions and financial companies do not take excessive risk when granting new credit and that borrowers have access to sustainable financing. Hence, the Recommendation limits credit to borrowers with a higher risk profile, also making it possible to accommodate the expected rise in interest rates and the likely reduction in the borrower's income upon retirement. The Recommendation does not intend to affect overall credit granted, nor developments in the real estate market per se. However, it may have a mitigating effect on the potential feedback loop risk between credit granted at domestic level and house prices.

This macroprudential measure reinforces the importance of promoting an adequate risk assessment of consumer credit, which has also been addressed by a number of European Union and national legal initiatives. Notice No 4/2017 of 23 June 2017 also sets forth that a credit agreement for consumers should only be concluded where the outcome of the consumer's creditworthiness assessment indicates that the obligations resulting from the credit agreement are likely to be met in the manner required under that agreement's terms and conditions. Requiring collateral can only result from the borrower's creditworthiness assessment, mitigating the risks identified over the course of this assessment.

Given the desired preventive nature of the macroprudential measure, Banco de Portugal took into consideration the environment of low interest rates, economic recovery, higher real estate prices, high indebtedness and low household saving rate. In this context, Banco de Portugal decided to introduce limits: (i) to the ratio of the amount of loans to the value of the property pledged as collateral and the minimum between the purchase price and the appraisal value of the house granted as collateral (LTV– loan-to-value – ratio) (ii) to the ratio of the amount of monthly instalments calculated considering a borrower's total debt to his/her net monthly income, adjusted for the borrower's age at the end of the agreement and his/her occupational status (DSTI– debt service-to-income – ratio); and (iii) to the original maturity of new loans. The Recommendation also establishes that new business should have regular payments of interest and capital (Table C4.1).

The simultaneous implementation of these limits contributes to the reinforcement of the measure's effectiveness. In fact, limits to the LTV ratio may become less restrictive in a context of rising housing prices, which is why they are combined with limits to the DSTI ratio and to the maturity. In effect, limits to the DSTI ratio act as automatic stabilisers, given that they tighten in the expansionary phase of the financial cycle, since real estate prices tend to grow faster than the borrowers' income. On the other hand, for a given loan amount, extending the maturity would make it possible to reduce the related monthly costs. Hence, establishing a limit to maturity makes it possible to prevent limits to the DSTI ratio from being circumvented.

216. Available on Banco de Portugal website: https://www.bportugal.pt/sites/default/files/anexos/pdf-boletim/acompanhamento_recomendacao_macroprudencial_2019_en.pdf.

Banco de Portugal considered these to be the most suitable instruments to promote the Portuguese financial system's sustained adoption of prudent credit standards.

Table C4.1 • Summary of the recommendation on new consumer credit agreements

A LTV limits	New credits relating to residential immovable property for the purchase or construction of own and permanent residence **LTV ≤ 90%**
	New credits relating to residential immovable property or credit secured by a mortgage or equivalent guarantee for other purposes than own and permanent residence **LTV ≤ 80%**
	New credit relating to residential immovable property and credit secured by a mortgage or equivalent guarantee for purchasing immovable property held by the institutions themselves and for property financial leasing agreements **LTV ≤ 100%**
B DSTI limits	Credit contracts should have **DSTI ≤ 50%**, with the following exceptions on the total amount of credit granted by each institution in each year - up to 20%: DSTI ≤ 60% - up to 5%: no DSTI limit For the calculation of the DSTI, monthly instalments of new loans are assumed constant over the entire period of the loan. For variable and mix interest rate contracts, he impact of an interest rate rise should be considered. The DSTI should also take into account the impact of a reduction in the borrower's income, if the borrower's age at the term of the loan contract is higher than 70 years old, except if the borrower is already retired at the time of the creditworthiness assessment.
C Limits to maturity	For credits relating to residential immovable property or credit secured by a mortgage or equivalent guarantee: - Maturity of new credit agreements ≤ 40 years - Average maturity of new credit agreements should gradually converge to 30 years until the end of 2022
	For consumer credit agreements: - Maturity of new loans ≤ 10 years
D Requirement of regular payments	New loans should be granted with regular payments of interest and capital

In accordance with the Recommendation, Banco de Portugal will monitor the implementation of the established criteria at least once a year and monitor the evolution of credit excluded from the scope of the measure. In the months following the entry into force of the Recommendation, Banco de Portugal interacted closely with major institutions in the Portuguese financial system, including institutions specialised in credit for consumption (13 institutions with a higher market share, representing around 93% of new household credit).

Banco de Portugal asked these institutions for a self-assessment report on the implementation of the Recommendation, previously approved by the Board of each institution and covering credit granted between 1 July 2018 and 31 January 2019. Information for the subsequent periods (February and March 2019) was also asked for. The analysis in this Box is based, inter alia, on all quantitative and qualitative information collected from these institutions. In addition, contacts were established with the other credit institutions not analysed in this report with the purpose of ensuring convergence of all the institutions covered by this macroprudential measure towards the limits set in the Recommendation.

The first few months of implementation of the Recommendation were affected by credit business for which the borrower's creditworthiness assessment was carried out prior to the Recommendation's entry into force. This was particularly evident in credit granted for housing, for which the period between the creditworthiness assessment and the release of funds is longer than for consumption loans. Hence, as at July 2018, also due to some difficulties involved in the Recommendation's operational implementation by the institutions, credit agreements were mostly based on solvency criteria that did not coincide with those established in the Recommendation. Therefore, data for July 2018 are used as a starting point to assess the evolution of the borrowers' risk profile throughout the period under review.

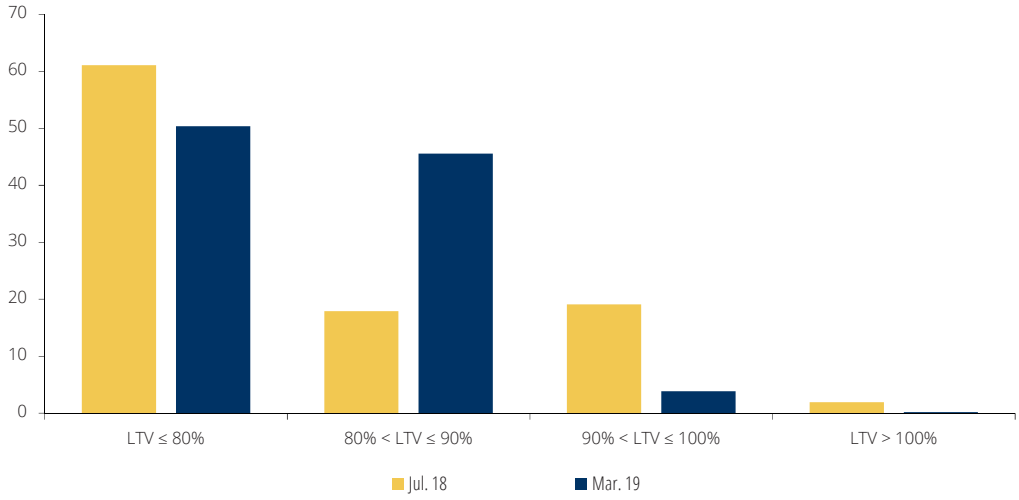
The criteria for granting credit to households, related to the macroprudential measure, became more restrictive. Institutions partially anticipated the entry into force of the Recommendation as far as credit standards were concerned. In July 2018 most institutions that participate in the *Bank Lending Survey* predicted tighter credit standards for households in both credit segments. As expected, in the October 2018 survey regarding household credit, most institutions reported tighter credit standards applied to household loans in the third quarter, both in housing and consumption loans. The main factor indicated by banks to explain the tighter credit to households was compliance with the macroprudential measure applied by Banco de Portugal to new credit agreements relating to residential immovable property and consumer credit agreements. As regards the terms and conditions of housing loans, institutions reported changes towards stricter collateral requirements, the LTV ratio and other limits to amount and maturity. In the last three months of 2018 and the first months of 2019, credit standards remained broadly unchanged, with only a few banks reporting tighter standards. This stabilisation was also observed in housing loans and credit for consumption and other purposes. In addition, according to this survey, in the first quarter of 2019 demand for credit for house purchase declined somewhat, due to the macroprudential measure.

Also, the supply of credit products to households underwent some changes, namely variable-rate credit has continued to lose importance in the housing credit market. In the case of consumption loans, the share of loans with a rate fixation period of less than one year has been declining since 2017, while the proportion of loans with a rate fixation period of over five years rose considerably. In addition, products with a grace period for principal or interest and maturities of over 40 years were withdrawn from the market.

Overall, there is convergence towards the limits set out in the Recommendation and improvement in the borrowers' risk profile.

In March 2019 and comparing to July 2018 there was a considerable decline in new housing loans with an LTV ratio between 90% and 100% (Chart C4.1). In July 2018 more than 20% of credit for permanent residential property was associated with an LTV ratio of more than 90%. In March 2019 this share declined to less than 1%. Whereas in July 2018, 17% of total new housing loans for other purposes showed an LTV ratio above 80%, in March 2019 this share declined to 5%.

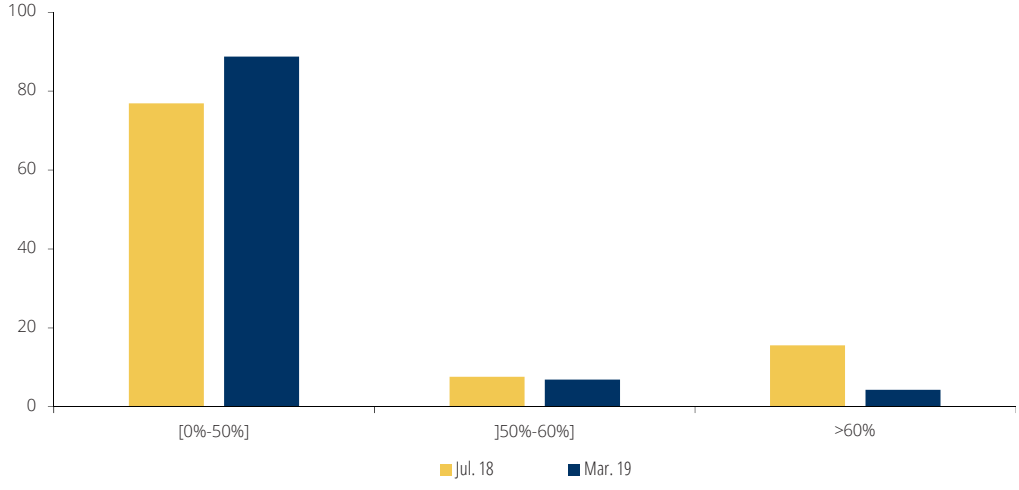
Chart C4.1 • Distribution of new housing loans by LTV ratio | As a percentage of total housing loans



Source: Banco de Portugal. | Note: Based on the self-assessment reports.

In March 2019, 89% of new household loans was granted to borrowers with a DSTI ratio of 50% or less, with a 12 p.p. increase from July 2018 (Chart C4.2). The share of household loans with a DSTI ratio of over 60% declined from 16% to around 4% between July 2018 and March 2019. Credit granted for housing (4.6% in March 2019) and consumption (3.4% in March 2019) are both already within the limits established for the DSTI ratio. In March 2019 only 7% of total new household loans was granted to borrowers with a DSTI ratio of 50% to 60%.

Chart C4.2 • Distribution of new household loans by limit to the DSTI ratio | As a percentage of total credit



Source: Banco de Portugal. | Note: Based on the self-assessment reports.

Institutions consider the DSTI ratio, particularly as regards the 60% limit, the tighter criterion, followed by the LTV ratio, particularly as regards the use of the minimum between the purchase price and the appraisal value.[217] Since the appraisal value tends to be higher than the purchase value, and given that banks predominantly used the former, the LTV limit tightened.

Limits to maturity are generally observed in the two types of credit under review, with the average maturity declining, especially in credit relating to residential immovable property granted for housing (Charts C4.3 and C4.4). In July 2018 the average maturity of housing loans was 33.5 years, while in March 2019 it was 32.7 years. The Recommendation establishes an upper limit of 40 years for housing loans and 10 years for consumption loans. Also, for credit granted for housing it sets convergence towards an average maturity of 30 years by 2022.

Chart C4.3 • Distribution of new housing loans by maturity interval | As a percentage of total housing loans

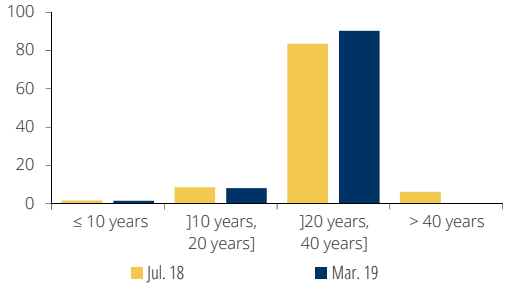
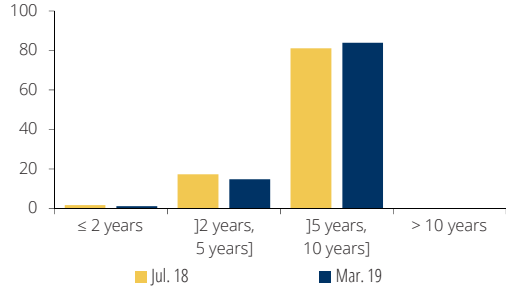


Chart C4.4 • Distribution of new consumption loans by maturity interval | As a percentage of total consumption loans



Source: Banco de Portugal. | Note: Based on the self-assessment reports.

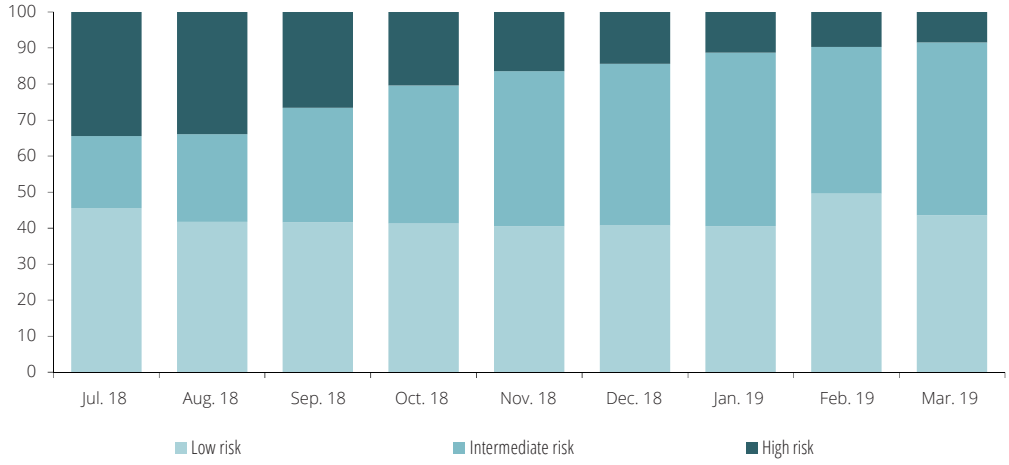
The regular payments requirement shows a high degree of compliance with the Recommendation, with only about 5% of total credit granted not complying with this requirement as at March 2019. Most of the explanations presented by institutions involves the granting of bridging loans (loans with only capital drawdowns).

Between July 2018 and March 2019 there was a considerable decline in the concentration of household loans granted with a DSTI ratio over 60% in all income brackets.

There is a gradual improvement in the risk profile of housing credit borrowers between July 2018 and March 2019 (Chart C4.5), considering the combination of the DSTI and LTV ratios. This improvement is evident from the analysis of the share of credit granted to higher-risk borrowers. From July 2018 to March 2019 the share of loans with a high risk profile declined from 35% to 9%, offset by an increase in the share of housing loans granted to borrowers with an intermediate risk profile. In March 2019 around 48% of total new housing loans was concentrated in the intermediate risk profile, which is an increase of 28 p.p. from July 2018. There was also a reduction in the share of lower-risk credit, but of only 2 p.p., in contrast with the 26 p.p. drop in credit granted to borrowers with a high risk profile.

217. The calculation of the LTV should consider in the numerator the amount of loan(s) secured by the same immovable property, and in the denominator the minimum between the purchase price and the appraisal value of the immovable property pledged as collateral. For more details, see Article 3 of the Recommendation.

Chart C4.5 • Borrowers' risk profile in new housing loans | Per cent



Source: Banco de Portugal. | Notes: Based on the self-assessment reports. Low risk: DSTI≤50% and LTV≤80%; Intermediate risk: 50%<DSTI≤60% and 80%<LTV≤90%; High risk: DSTI>60% and LTV>90%.

Credit excluded from the scope of the Recommendation[218] has also been scrutinised so as to infer whether the measure's effectiveness is being reduced due to this type of credit being granted. The analysis leads to the conclusion that no significant changes have been identified in the pattern of new household credit excluded from the scope of the Recommendation. Also, no significant changes have been seen in the distribution of new housing loans by borrower age.

In conclusion, the analysis shows that the limits established in the Recommendation are appropriate and effective in reaching the objectives established. Hence, the limits to the LTV and DSTI ratios and to the maturity, as well as the exceptions to these limits and the requirement of regular payments of interest and capital in new business, will remain unchanged until the new assessment, which will take place in the first quarter of 2020.

Banco de Portugal will also continue to monitor the implementation of the Recommendation by the institutions covered by this macroprudential measure, so as to prevent potential distortions of competition or actions that may jeopardise the Recommendation's effectiveness.

218. The following credit is excluded from the scope of the Recommendation: (a) credit agreements intended to prevent or address arrears situations; (b) credit agreements concluded under the framework for granting subsidised housing credit for the disabled; (c) credit agreements of an amount equal to or lower than the equivalent to tenfold the guaranteed monthly minimum wage; (d) other credit with no defined repayment schedule (including credit cards and credit lines). For further details, see: https://www.bportugal.pt/sites/default/files/recomendacao_contratocredito_en.pdf.

Box 5 • Sociedades de Investimento e Gestão Imobiliária (SIGIs), the Portuguese Real Estate Investment Trusts (REITs)

Real Estate Investment Trusts (REITs) appeared in the 1960s in the United States of America with the purpose of extending to retail investors the opportunity to invest in real estate assets that generate income. Thus, these investors' ability to invest their savings in commercial real estate was further facilitated, a possibility previously only available to the largest investors. The fast expansion of this activity in the United States led to its appearance in other countries, such as Belgium, the Netherlands, Germany, the United Kingdom, Italy, France and Spain.

Despite the specificities of each jurisdiction's legal framework, REITs generally invest in real estate assets that generate income and its capital is constituted by shares, with no associated management company, in contrast to investment funds. Equity shares are usually listed on a stock exchange, thus being normally subject to specific requirements for capital dispersion.

According to a study published by the ECB in 2018,[219] the market value of REITs in Member States of the euro area has doubled since 2009. An environment of low interest rates over an extended period, in tandem with price growth in the real estate market, have contributed to the attractiveness of investment in shares issued by REITs. Indeed, at euro area level, REITs have been recording rates of return – risk-adjusted for the volatility of results – higher than those of other listed companies, most probably due to the fact that these vehicles are usually associated with a favourable tax regime.

In Portugal, the legal framework for SIGIs entered into force on 1 February 2019, upon the publication of Decree-Law No 19/2019 of 28 January 2019[220] (hereinafter "Decree-Law No 19/2019"). Although (non-resident) REITs were already operating in Portugal,[221] this Decree-Law introduced into the domestic legal system a set of rules similar to those already in place in other jurisdictions.

According to the Decree-Law's preamble, a SIGI is "a new vehicle for promoting investment and boosting the real estate market, in particular the rental market". In addition to that, other stated objectives are: "attracting foreign direct investment", "diversifying funding sources and boosting the momentum and competitiveness of the capital market," as well as, "promoting corporate financing through the use of equity capital and reducing dependence on bank funding".

This box describes the main characteristics of this type of company (Table C5.1) and identifies certain risks to financial stability, as well as the respective mitigating factors.

219. See "Box 2", *Financial Stability Review*, ECB, May 2018, available in English at https://www.ecb.europa.eu/pub/pdf/fsr/ecb.fsr201805.en.pdf?ed91bac6b64b9b4aea7729a513c2f522.

220. In spite of its approval and entry into force, some initiatives for parliamentary review of the legal framework for REITs are still pending.

221. In Portugal, over the course of 2017, the acquisition of commercial real estate by non-resident REITs accounted for approximately 7% of total investment in the commercial real estate market. See section 2.3 entitled "Real Estate Market", *Financial Stability Report*, June 2018, available for consultation at https://www.bportugal.pt/sites/default/files/anexos/pdf-boletim/ref_06_2018_en.pdf.

Table C5.1 • SIGI's main characteristics

Legal nature, minimum share capital and incorporation	• Public limited company (*Sociedade Anónima – S. A.*), with no need for association with a management company, subject to the supervision applicable to SAs;[a)] • Minimum share capital of €5,000,000.00; • A SIGI may be directly incorporated as such, or result from the conversion of another SA or Real Estate Investment Undertaking (REIU), provided that all requirements laid down in Decree-Law No 19/2019 are met.
Corporate object	Primarily: • The acquisition of ownership, surface or equivalent property rights, for rental or other forms of economic exploitation; • The acquisition of shareholdings in other SIGIs or companies with similar object and legal regime; • The acquisition of units or shares in a REIU, real estate investment funds or companies, for rental and with an income distribution scheme similar to that of SIGIs.
Asset composition (cumulative requirements): • Mandatory from SIGI's second year of existence; • 3-year minimum holding period of the rights on real estate and shareholdings.	• Rights on real estate and shareholdings should account for at least 80% of SIGI's asset value; • Real estate subject to rental or other forms of economic exploitation should account for at least 75% of SIGI's total asset value.
Leverage maximum	• Indebtedness is limited to 60% of the asset value.
Admission to trading and capital dispersion requirements	• SIGI's equity shares must be admitted to trading on an open market after a period of 12 months from its incorporation date; • 20% of the equity shares must be dispersed among investors, each holding shares corresponding to less than 2% of the voting rights.
Requirements for profit distribution	• Annual distribution of at least 90% of the annual profits, resulting from dividend payment and income from shares or units distributed by the entities in which they hold shares; • Distribution of at least 75% of the remaining annual distributable profits in accordance with the Portuguese Company Law; • Mandatory reinvestment of at least 75% of net proceeds from the disposal of assets, at the latest within 3 years from the disposal; • The legal reserve may not exceed 20% of the corresponding share capital.

Note: a) Supervision, carried out by the Portuguese Securities Market Commission – CMVM, of compliance with the legal framework applicable to securities offerings, admission to trading of shares, and obligations of information disclosure by issuers of shares traded on a regulated market or multilateral trading facility.

Thus, characteristics generally considered as "attractive" in REITs' legal frameworks were incorporated into the Portuguese legal system, featuring some comparative advantages over traditional forms of real estate investment in Portugal. In addition, this legislative option provides greater legal certainty to investors by introducing an internationally known vehicle into Portuguese legislation and maintaining relatively uniform characteristics.

Similarly to Real Estate Investment Funds (REIFs), SIGIs' profitability stems from developments in the value of real estate asset portfolios, as well as the income they generate. Hence, the results of these companies are dependent on developments in the real estate market, particularly in the rental market.

The requirements for mandatory regular distribution of most of the profits, as well as the low level of legal reserves allowed, ensure that income generated by rents and obtained through shareholdings in similar companies are distributed to shareholders in the form of dividends, guaranteeing some regularity in terms of return. Additionally, the absence of a management company results in a more direct management, which may lead to higher profitability to the investor since it does not entail any intermediary costs.

In turn, the minimal capital dispersion requirement among minority investors may result in the shares' greater liquidity and SIGIs may therefore be a new instrument to attract households' savings leading to a broadening of the range of investor types. Another factor that could boost investment in this type of financial asset arises from a greater transparency associated with investment in listed shares, inter alia, the quarterly requirement for information disclosure to the market, including the publication of reports on their financial situation.

REITs in Portugal, as elsewhere, benefit from a generally favourable tax regime with regard to the absence of double taxation of profits, with the company being exempted from paying the Portuguese corporate tax. The withholding tax tables are also particularly favourable to non-resident investors. In Portugal,[222] this regime coincides with that currently applicable to all other real estate investment companies,[223] although some interpretative uncertainty may arise from the application of a pre-existing regime to a new instrument.

Notwithstanding the potential positive effects in terms of boosting the domestic capital market, as well as the rental market, these vehicles' activity may have an impact on financial stability

In most European countries where REITs operate, although their configuration – theoretically – grants easier access to small savers, shareholders are mostly non-resident institutions[224],[225] and the real estate asset portfolios belong mainly to the commercial segment. Should this be the case in Portugal, with investments by non-residents being significantly linked to search-for-yield behaviour, given the widespread environment of low interest rates observed in recent years, there is a risk that changes in international financial markets conditions might cause that investment to reverse suddenly. Following a possible overheating of the market, this could lead to a sharp reversal of real estate market prices with a significant impact on the economy, due to the wealth and collateral effects.

222. As mentioned in recital 7 of the preamble of the Decree-Law No 19/2019.

223. Thus, Articles 22 and 22A of Decree-Law No 215/89 of 1 July 1989 (Portuguese Statute of Tax Benefits) are applicable to SIGIs, as well as all other tax provisions applicable to CIUs, such as those relating to stamp duty or the Municipal Real Estate Transfer Tax.

224. See "Box 2", *Financial Stability Review*, ECB, May 2018, available in English at https://www.ecb.europa.eu/pub/pdf/fsr/ecb.fsr201805.en.pdf?ed91bac6b64b9b4aea7729a513c2f522.

225. See section 2.3 entitled "Real Estate Market", *Financial Stability Report*, June 2018, available for consultation at https://www.bportugal.pt/sites/default/files/anexos/pdf-boletim/ref_06_2018_en.pdf.

In fact, non-resident investors tend to reduce their exposure faster in case of adverse conditions for the expected return and/or risk perception of the investment, whether in the form of equity (shares) or debt instruments, which may lead to increased price volatility of SIGIs' shares. As SIGIs' return on investment depends directly on real estate price developments, second-order effects arising from the investors' behaviour may occur, especially due to asset fire sales.

Another relevant aspect as regards the SIGIs' legal framework is the maximum level of debt allowed vis-à-vis assets, which in Portugal is 60%,[226] higher than the limit in force for CIUs, such as REIUs. Actually, these are subject to an indebtedness limit of 25% and 33% for open-ended and closed-ended REIUs, respectively, resulting in a higher capital requirement for REIUs when compared to an equal amount of assets.

In European countries where REITs already exist there is no common standard for establishing a leverage maximum, because some countries do not impose any limit at all (Spain, France and Italy), while others do (Germany, Belgium, Ireland and the Netherlands). There is, however, a common trend towards an increase in REITs' leverage level, leading to increased risk associated with these companies.

SIGIs' legal framework provides for the acquisition of rights on real estate for rental or other forms of economic exploitation (a concept not clarified in the legal regime yet), including the development of building construction and rehabilitation projects,[227] where the maximum leverage set for SIGIs is the same for any type of activity they might develop. Indeed, contrary to the Greek legal framework that sets a lower indebtedness maximum, Portuguese legislation does not provide for a leverage limit specific to this type of project.

In case of a sharp decrease in real estate prices, leverage may rise quickly, since realised losses decrease the profit and equity value. This may boost contagion effects through asset fire sales, with a significant impact on asset prices, affecting not only the market participants holding the same assets, but also those holding assets with a price closely correlated with the former. Moreover, SIGIs' legal framework contains no requirements regarding the frequency and methodology for assessing real estate asset portfolios equivalent to those applied to REIFs, which may lead to heterogeneity in terms of the practices adopted by the managers of these companies and to the risk of assets not being evaluated properly and at the appropriate frequency.[228]

By laying down a maximum leverage level, the risk inherent in the direct exposure of credit institutions through the granting of loans and acquisition of debt securities, is bounded. However, in case of adverse market situations accompanied by steep falls in real estate prices, this exposure may result in losses for credit institutions. In terms of exposure through shareholdings, this legal framework clarifies[229] that SIGIs are no exception to the rule contained in the Legal Framework of Credit Institutions and Financial Companies (*Regime Geral das Instituições de Crédito e Sociedades Financeiras*, RGICSF), which determines that credit institutions may not hold, directly or indirectly, for a continuous or non-continuous period of more than three years, shares giving them more than 25% of the voting rights corresponding to the capital of the owned undertaking.[230] However, a sharp unanticipated decrease in real estate prices may have negative effects on the

226. Article 8(4) of Decree-Law No 19/2019 of 28 January 2019.

227. Article 7(2) of Decree-Law No 19/2019 of 28 January 2019.

228. Despite the provision of Decree-Law No 19/2019 that the auditor in charge of the legal certification of the SIGIs accounts is responsible for verifying whether the methodologies and criteria relevant for the assets' valuation are appropriately documented.

229. Article 2(3) thereof.

230. Article 101 of RGICSF approved by Decree-Law No 298/92 of 31 December 1992.

banking sector, due to the contagion effect and loss amplifiers which may result from REITs' interconnections and cross-holdings. On the other hand, the expected geographical dispersion of investors is likely to limit the risk of contagion to the domestic financial system.

SIGIs do not pose a high liquidity risk, as there is no possibility of redemption of the capital invested other than through the sale of the shares, leading the corresponding changes in price to reflect directly in the investors' wealth. This contrasts with REIFs, in particular open-ended REIFs,[231] where participants may be encouraged to redeem their units in order to gain access to the capital invested, causing the management company to sell real estate assets on the portfolio. Thus, this type of behaviour, which promotes fire sales of assets on the balance sheet, putting negative pressure on their prices, is mitigated in the case of SIGIs compared to the Portuguese REIFs. In addition, the possibility that SIGIs, as listed companies, have to increase their capital through the issuance of shares mitigates not only the liquidity risk but also the risk of default.

As has happened in other European countries where REITs are already established, SIGIs' activity may come to focus mainly on the commercial real estate market.[232] In addition, there is evidence that the euro area countries where REITs have expanded most are also those showing relatively higher price increase in the commercial real estate market, although no causal relationship is established between the two events.[233]

Also with regard to the possible impact of SIGIs' activity on real estate prices, the introduction of these companies in Portugal is likely to boost real estate demand and, in the short term, this increase in demand may prompt a rise in prices. However, by potentially also boosting supply through construction and rehabilitation, impact on prices is expected to be ambiguous in the longer term.

Finally, as the legal framework classifies SIGIs as "real estate investment companies",[234] this means that these are, at the same time, companies subject to specific supervision rules and classified as REIUs, and companies which are not subject to this type of supervision, enabling the existence of situations of regulatory arbitrage, especially where the legal framework itself allows for a conversion of the first into any of the other types of companies.[235]

In conclusion, while, on the one hand, benefits are expected from this new regime (such as diversification of funding sources for real estate), on the other hand the possibility of risks associated with the implementation of SIGIs is not ruled out, possibly with some short-term pressure on prices in the commercial real estate market. In the presence of a pattern similar to that observed in the euro area countries where REITs are already established, a link between changes in prices in this market and SIGIs' profitability is expected. In terms of investor profile, non-resident institutional investors are likely to predominate, which can also lead to an increased risk of abrupt reversal of this investment and of the price of underlying assets, given the increased volatility usually associated with this type of investor.

231. In Portugal, most REIFs are closed-ended REIFs, which results in a mitigated liquidity risk associated with the redemption of units. For more details see Special Issue 2 entitled "Investment funds as a source of systemic risk", *Financial Stability Report*, December 2018 at https://www.bportugal.pt/sites/default/files/anexos/pdf-boletim/ref_12_2018_en.pdf.

232. This definition comprises rented real estate for housing purposes, provided that the activity is pursued for commercial purposes. In Spain, for example, the commercial sector clearly prevails in the portfolios held by SOCIMIs (Spanish acronym for Sociedades Anónimas Cotizadas de Inversión en el Mercado Inmobiliario). See Banco de España, *Financial Stability Report*, 11/2018, Box 2.3.

233. See Box 2, *Financial Stability Review*, ECB, May 2018, at https://www.ecb.europa.eu/pub/pdf/fsr/ecb.fsr201805.en.pdf?ed91bac6b64b9b4aea7729a513c2f522.

234. See Article 2(1) of Decree-Law No 19/2019 of 28 January 2019.

235. Article 6 of Decree-Law No 19/2019 of 28 January 2019.

II Special issues

Review of the resolution framework: what is new?

The macroprudential policy experience in the European Union: main challenges of the interaction between macroprudential instruments

Review of the resolution framework: what is new?

1 Framework

On 23 November 2016, the European Commission published a set of legislative proposals to strengthen the resilience of European banks. According to the European Commission, this initiative 'builds on existing EU banking rules and aims to complete the post-crisis regulatory agenda by making sure that the regulatory framework addresses any outstanding challenges to financial stability, while ensuring that banks can continue to support the real economy'[1]. The pieces of legislation under review were: BRRD,[2] SRM Regulation,[3] CRD IV[4] and CRR[5,6].

As regards resolution matters, which are the focus of this Special issue, the existing framework is subject to limited changes, namely:

- **a)** Creation of a new class of debt instruments for credit institutions, called 'non-preferred senior debt instruments', which, in the event of insolvency, are ranked between subordinated claims and other senior debt;
- **b)** Review of the legal and regulatory framework on the Minimum Requirement for Own Funds and Eligible Liabilities (MREL)[7], in order to align this requirement with the international standard on the Total Loss-Absorbing Capacity (TLAC),[8] published by the Financial Stability Board (FSB) in November 2015 and applicable to Global Systemically Important Institutions (G-SIIs)[9], and to improve this framework overall. This review amends the BRRD, the SRM Regulation and the CRR;
- **c)** Creation of a new moratorium tool[10];

1. See Press release, available at http://europa.eu/rapid/press-release_IP-16-3731_en.htm.
2. Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms.
3. Regulation (EU) No 806/2014 of the European Parliament and of the Council of 15 July 2014 establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Resolution Fund.
4. Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms.
5. Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms.
6. For details on changes to the CRR and the CRD IV other than those mentioned in this document, see Special issue "Amendment of the CRD IV-CRR: what is new?", *Financial Stability Report*, December 2018.
7. Instrument used in resolution planning to ensure the resolvability of the credit institution, making sure that, in resolution, the institution has sufficient liabilities to absorb its losses and to restore its capital ratio. For more details, see Box "Minimum Requirement for Own Funds and Eligible Liabilities under the new resolution regime", *Financial Stability Report*, November 2015.
8. A requirement that aims to ensure that G-SIIs in resolution have the loss-absorbing and recapitalisation capacity in an amount sufficient to ensure the implementation of resolution measures in an orderly manner and to limit the impact on financial stability, ensure the continuity of critical functions and protect public funds from having to absorb losses.
9. In the terminology used by the European Union.
10. The power given to a resolution authority to suspend payment or delivery obligations pursuant to any contract to which a credit institution is a party, provided the legal requirements for this suspension are met and in compliance with the requirements on the duration of this power and the claims that may be included under its scope.

d) Review of rules on the contractual recognition of bail-in[11];

e) Introduction of new rules on placing of subordinated instruments eligible for MREL with retail clients.

Following their publication, the legislative proposals that make up the so-called 'banking package' were intensively discussed by the European co-legislators, the Council of the European Union and the European Parliament, first on an individual basis and then during the trilogues.

As seen below, the amendment referred to in point (a) has already been adopted both at European and domestic level with the publication of the respective Directive in the Official Journal of the European Union at the end of 2017 and subsequent incorporation into Portuguese law in March 2019.

The text of the other amendments agreed to by the co-legislators is expected to be published in the Official Journal of the European Union at the end of the first half or the beginning of the second half of 2019. Although the pieces of legislation under review enter into force 20 days following their publication, the provisions of the directive amending the BRRD must be incorporated into national law in order to apply. Member States must incorporate transpose and apply these rules within 18 months following their entry into force[12]. Consequently, the provisions of the regulation amending the SRM Regulation – which, as a regulation, is directly applicable in all Member States and does not need to be incorporated into national law – will also only be applicable 18 months following its entry into force. However, the provisions on the MREL set out in the CRR and applicable to G-SIIs are immediately applicable upon its entry into force, i.e. 20 days following the publication in the Official Journal of the European Union of the regulation amending the CRR.

2 Main amendments to the resolution framework

2.1 Non-preferred senior debt instruments

One of the legislative initiatives of the European Commission was a proposal for the creation of a new class of debt instruments, called 'non-preferred senior debt instruments'.

The TLAC requirement adopted by the FSB sets out as a general rule that G-SIIs must comply with TLAC using subordinated instruments, in order to ensure that the operationalization of bail-in and prevent legal risks arising from potential violations of the 'no creditor worse off' principle.[13] The FSB establishes that the TLAC subordination requirement may be complied with in the following three ways:

11. Resolution tool allowing losses arising from the failure of a credit institution to be directly borne by its shareholders and creditors by reducing their claims or converting them into share capital to the extent needed to restore the institution's ability to comply with the conditions for authorisation and to continue to carry out its activities and to obtain financing autonomously and under sustainable conditions from financial markets. The bail-in tool is therefore different from the bail-out tool, which recapitalises credit institutions using exogenous funds, in particular public funds.
12. See Section 2.2.8 below, for an exception to this rule regarding the entry into force of the MREL disclosure requirements.
13. Principle according to which no creditor shall incur greater losses in resolution than they would otherwise incurred if the institution had been wound up instead of resolved.

- Contractual subordination: the parties agree, in the terms and conditions of the debt instrument, that, in insolvency, the instrument will rank below senior debt;
- Statutory subordination: the law establishes that claims with certain characteristics are subordinated to senior debt in insolvency;
- Structural subordination: in groups with a holding company other than a credit institution as parent undertaking, where debt instruments are issued by the parent undertaking, which does not have on its balance sheet any liabilities to be excluded from bail-in.

Following the publication of the TLAC requirement, several European Union Member States where G-SIIs are established adopted national initiatives to facilitate or allow these banks to comply with the subordination requirement[14] – which will be replicated in MREL, including for banks other than G-SIIs, although with several important differences[15].

In order to avoid the misalignment of solutions adopted by Member States and to provide transparency and clarity to the market, the European Commission considered it pertinent to partially harmonise the hierarchy of claims in insolvency of credit institutions in the European Union on compliance by law with the subordination requirement. To this end, the European Commission put forward a legislative initiative to create a new debt class, which cannot benefit from any preferential ranking or collateral, and has as a distinctive feature the fact that, in insolvency, it would be paid after unsecured unsubordinated claims but before subordinated claims[16]. The seniority of these debt instruments, in the event of the issuer's insolvency, has direct consequences for the order in which losses are absorbed in resolution, given that, as a rule, losses are absorbed in the reverse order to which claims are paid in case of insolvency.

In this class of non-preferred senior debt instruments, only the following may be issued: instruments with an original maturity of at least one year, not containing embedded derivatives and which are not themselves derivatives, and expressly mentioning in their contractual documrntation and, where applicable, their prospectus, that, in insolvency, any claims arising from them will be ranked as described above.

14. In May 2015, Germany approved an amendment to the German Banking Sector Law (Article 46f(5) to (7) of the *Kreditwesengesetz*), according to which claims arising from unsecured debt instruments issued by credit institutions would only be settled, in insolvency, after the other senior claims on the institution had been paid, but before subordinated claims (statutory subordination). The rules in question are only applicable to the insolvency proceedings commencing after January 2017, but affect all instruments within their scope, irrespective of whether these were issued before or after that date.

    In France, the solution adopted in December 2016 (Article L613-30-3 of the *Code Monétaire et Financier*) was the creation by law of a new debt class, subordinated to existing senior debt, but ranking above subordinated debt (contractual subordination with legal recognition). In contrast to the German solution, this legal amendment did not have any retrospective effects, as it did not affect debt that had already been issued.

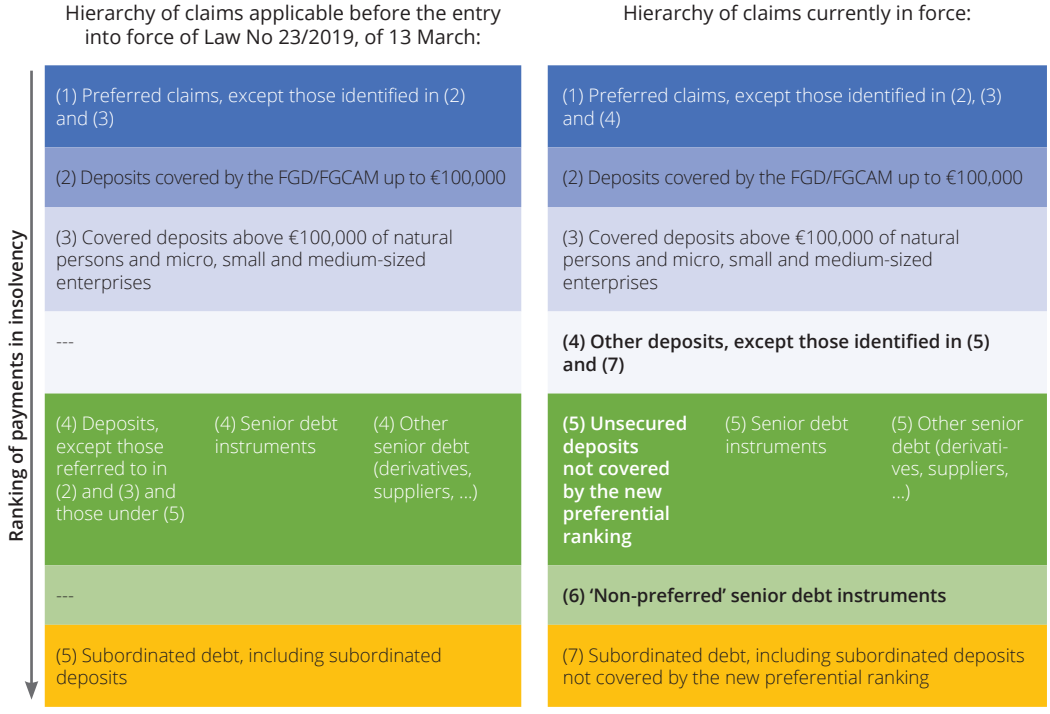
15. See Section 2.2.4 below.

16. The aim is thus to improve the resolvability of credit institutions by differentiating between senior debt resulting from debt instruments or other types of financing agreements (which are typically viewed as an investment by both parties, given their maturity and the risk that is voluntarily and consciously taken by the creditor and then reflected in their remuneration, and which can be bailed-in without any particular operational difficulties, as these have a relatively simple structure and are not usually related to the institution's critical functions and core business lines which must be maintained post-resolution) and other senior debt (in particular, claims of suppliers, claims arising from financial derivatives, which tend to be – but are not always – excluded from the loss absorption and recapitalisation effort of the institution under resolution, given that the application of the bail-in tool is operationally impossible or strongly discouraged in order to safeguard financial stability or the institution's critical operations). If there were no distinction between these claims in the insolvency hierarchy, which would then be reflected in the order of loss absorption in resolution, the resolution authority would be forced to exercise its power to discretionarily exclude these claims from the scope of the bail-in tool. In accordance with the 'no creditor worse off' principle, this might limit the total loss-absorbing capacity of the institution in a specific resolution scenario or require the resolution financing arrangement to pay compensation to affected creditors.

This last requirement is particularly important. On the one hand, it ensures that this legislative amendment does not have any retroactive or retrospective effects, as it only affects instruments concluded after the entry into force of the rules incorporating the directive into national law (or instruments issued at an earlier date but amended by mutual agreement between the parties). On the other, it ensures that, when these debt instruments are marketed, counterparties are aware of the special ranking of their claims in insolvency. Indeed, if there is no explicit reference to this ranking in the contractual clauses governing the debt instrument, claims arising from it will not be subject to this special ranking, and instead must rank pari passu with the remaining senior debt ('preferred' senior debt).

Despite consisting of a proposal to amend the BRRD, the European Commission's initiative was separated from other resolution-related issues in order to fast track it, i.e. separate the discussion and accelerate its approval. As a consequence, this proposal has already led to the approval of a directive which was published in the Official Journal of the European Union[17] and then incorporated into Portuguese law through Law No 23/2019, of 13 March. In addition to transposing this Directive, Law No 23/2019, of 13 March also grants, as a general rule, a preferential ranking to claims in respect of deposits currently ranked as senior or subordinated in the hierarchy of claims in insolvency.

Figure 1 • Simplified comparison between the hierarchy of claims in insolvency of a credit institution before the entry into force of Law No 23/2019, of 13 March and the hierarchy of claims arising from amendments introduced by this Law



17. Directive (EU) 2017/2399 of the European Parliament and of the Council of 12 December 2017, amending Directive 2014/59/EU as regards the ranking of unsecured debt instruments in insolvency hierarchy.

2.2 MREL

2.2.1 Implementation of the TLAC requirement applicable to G-SIIs

Although the MREL requirement applies to all European Union credit institutions, certain provisions resulting from the adoption of the TLAC requirement in the European Union will only affect G-SIIs, given that the TLAC was prepared and calibrated taking into account institutions and groups of their size and systemic relevance. The rules in question are:

- Resolution entities[18] which are either G-SIIs or subsidiaries of G-SIIs must comply on a permanent basis with a Pillar 1 MREL requirement (i.e. a requirement with a minimum threshold and rules for calculation which are directly set out by law), which corresponds to 18% of the total risk exposure amount[19] and to 6.75% of the total exposure measure from 1 January 2022 onwards[20]. Up to the end of 2021, the Pillar 1 MREL requirement to be complied with by these resolution entities corresponds to 16% of the total risk exposure amount and to 6% of the total exposure measure;
- Resolution entities that are G-SIIs or subsidiaries of G-SIIs must comply with the Pillar 1 MREL requirement solely relying on own funds and subordinated instruments (including the 'non-preferred' senior debt instruments referred to in Section 2.1 above). However, where allowed by the resolution authority, these entities may use ('preferred') senior debt to comply with part of this requirement (to an amount not exceeding 2.5% and 3.5% of the total risk exposure amount up to the end of 2021 and from 2022 onwards respectively), provided this does not entail a significant legal risk as regards compliance with the 'no creditor worse off' principle;
- Resolution entities that are G-SIIs or subsidiaries of G-SIIs are required to deduct from their amount of eligible liabilities relevant for compliance with MREL any eligible liabilities instruments that they hold and were issued by other G-SIIs.

Together with the rules on eligibility requirements, these provisions are laid down in the CRR – instead of the BRRD or the SRM Regulation – and will be applicable after the entry into force of the regulation amending the CRR, as the vacatio legis period of 18 months established for the BRRD and in the SRM Regulation does not apply here.

2.2.2 Eligibility criteria

The review of the MREL framework adds a considerable number of eligibility criteria for liabilities which – in addition to own funds and the share of Tier 2 instruments with a remaining maturity of more than one year that are no longer qualified as own funds items – may be used by credit institutions to comply with the MREL requirement. This was due to the need to incorporate the eligibility criteria for compliance with the TLAC requirement into European legislation and, mainly, to align the framework with the eligibility criteria that must be met by Tier 2 instruments in order to give more credibility to their loss-absorbing availability in the event of resolution.

18. Concept set out in Section 2.2.5 below and that mainly refers to the group entity that will be subject to resolution action.
19. Commonly known as total risk-weighted assets and calculated under Article 92(3) and (4) of the CRR.
20. Used as denominator in the calculation of the leverage ratio, referred to in Article 429(4) of the CRR.

Of the new eligibility criteria, the following are particularly important:

- The instruments are not owned by an entity included in the same resolution group or by an undertaking in which the institution has the ownership, direct or indirect, of 20% or more of the voting rights or capital;
- The instruments are not subject to set-off or netting arrangements ;
- The contractual provisions that govern the instruments do not include any incentive to early repayment by the institution or any early repayment option conferred on their holder; where the instruments contain these clauses, their maturity is considered to be the date from which these options may be exercised for the first time or from which the incentives are effective[21], for the purpose of assessing compliance with the criterion establishing a remaining maturity of more than one year;
- Liabilities may only be repaid early where the issuing institution has obtained prior permission from the resolution authority (a permission granted on an ad hoc basis or a general prior permission);
- The provisions governing the instruments do not give their holder the right to accelerate the future scheduled payment of interest or principal, other than in the insolvency or winding-up of the resolution entity.

In order to safeguard the eligibility of instruments issued on a prior date which do not comply with the new eligibility criteria introduced by the review of the MREL framework and to prevent institutions from being faced with the immediate ineligibility of a set of instruments – which may be more or less relevant – with the entry into force of the rules in question, the European legislator established grandfathering provisions for these instruments. Essentially, instruments issued before the entry into force of the regulation amending the CRR and which comply with existing eligibility criteria but do not comply with a number of new criteria will continue to be eligible for compliance with MREL.

2.2.3 Calibration

In general, the calibration of the MREL requirement – i.e. the determination of the amount of own funds and eligible liabilities institutions are required to have on their balance sheets – did not change significantly. In this respect, MREL must be set at an amount that is sufficient to allow the institution to: (i) bear all its losses ('loss-absorption amount'), (ii) be recapitalised to the extent necessary to continue to comply with the requirements for continuing authorisation ('recapitalisation amount')[22], and (iii) sustain the confidence of financial markets to ensure its access to funding autonomously and under sustainable conditions from these markets and the continued provision to the economy of critical functions ('market confidence buffer').[23]

21. In order to be eligible for MREL, a liability must have a remaining maturity of more than one year, a criterion that still applies following the amendment under review.
22. Both the loss-absorption amount and the recapitalisation amount are defined with reference to the Pillar 1 prudential requirements, set out under Article 92(1)(c) of the CRR, and to the Pillar 2 prudential requirements, laid down in Article 104-A of the CRD.
23. The market confidence buffer is defined with reference to the combined buffer requirement referred to in Article 128(6) of the CRD, less the institution-specific countercyclical capital buffer.

Nevertheless, the review of the framework changes how the MREL requirement is expressed. This requirement is no longer set as a percentage of the total liabilities and own funds of the credit institution, but rather as a percentage of the total risk exposure amount and, in parallel, the total exposure measure.

More importantly, the amendments under review expressly introduce the need for the resolution authority to comply with objective and transparent criteria when calibrating MREL, which require the authority to take into account the resolution strategy set out in the resolution plan of each institution, as well as the characteristics of the institution. As a result, the recapitalisation amount and the market confidence buffer now expressly take into account the situation of the credit institution following resolution or the exercise of write-down or conversion powers in relation to capital instruments and eligible liabilities. This is both in terms of the total risk exposure amount and the total exposure measure, which are the basis for calculating it, and in terms of the Pillar 2 prudential requirements and the combined buffer requirement, which will be applicable to the institution after resolution has been applied and these powers have been exercised.

In addition, when MREL is calculated and expressed in the credit institution's total exposure measure, the resolution authority must take into account, where applicable, the requirements for access to resolution financing arrangements, more specifically, the minimum requirement on the contribution to loss-absorption and recapitalisation of the institution, equivalent to 8% of total liabilities, including own funds.

In parallel with the Pillar 1 MREL requirements set out in the CRR for resolution entities that are G-SIIs or subsidiaries of G-SIIs, the BRRD and the SRM Regulation establish minimum MREL requirements, corresponding to 13.5% of the total risk exposure amount and to 5% of the total exposure measure, applicable to resolution entities that:

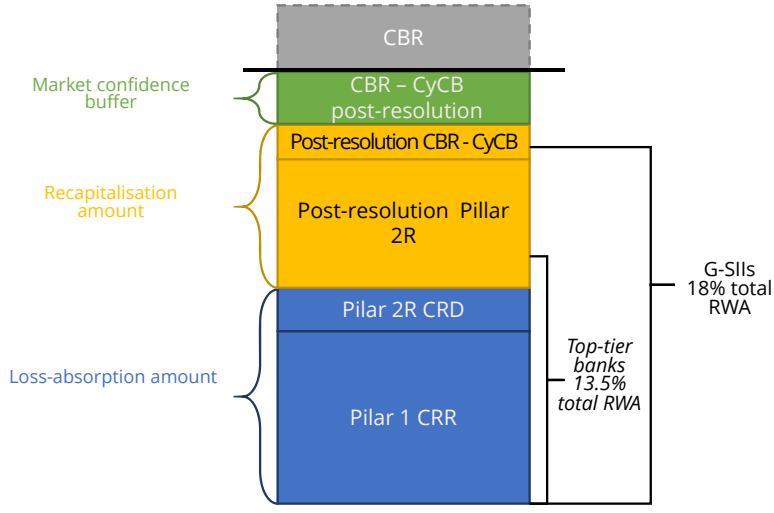
- Are part of a resolution group with total assets above €100 billion ('top-tier banks');
- Though not part of a resolution group with total assets above €100 billion, were assessed by the resolution authority as reasonably likely to pose a systemic risk in the event of its failure[24]; in Member States participating in the Banking Union, the SRM Regulation provides that this decision should be taken by the Single Resolution Board (SRB) only upon a request from the national resolution authority and that the SRB does not have the possibility not to decide in favour of said request.[25]

Lastly, although the resolution entities that are G-SIIs or subsidiaries of G-SIIs have a Pillar 1 MREL requirement set out in the CRR, the BRRD and the SRM Regulation also confer on resolution authorities the power to impose an additional requirement for own funds and eligible liabilities, where the Pillar 1 requirement is below the amount resulting from the calibration rules mentioned above and only in the amount sufficient to achieve this result.

24. In its decision, the resolution authority takes into account whether a set of criteria has been met, regarding deposit-based funding models, market access and reliance on Common Equity Tier 1 instruments for compliance with MREL.

25. The decision to classify a bank with total assets below €100 billion as a 'top tier bank', or the option not to classify a bank as such, is not relevant nor does it interfere with the verification of compliance with the criteria for the application of resolution tools, more specifically the criterion of public interest, according to which resolution measures may only be applied where needed to achieve the objectives of the resolution (in particular, to avoid serious consequences for financial stability) and where the winding-up of the institution in question is not sufficient to achieve these purposes to the same degree. The option to categorise a bank as a 'top tier bank' is only relevant for the purpose of applying the rules arising from this classification set out in the MREL framework, more specifically the need to comply with minimum MREL requirements laid down by law for these institutions and the application of specific rules for the subordination requirement mentioned in Section 2.2.4 below.

Figure 2 • Schematic overview of the calibration of the MREL requirement[26]



Notes: Not to scale. Key: CBR – combined buffer requirement; CyCB – countercyclical capital buffer; RWA – risk-weighted assets (see footnote 19).

2.2.4 Subordination

The MREL framework which is currently set out in the BRRD and the SRM Regulation is very parsimonious in relation to subordination requirements, i.e. the part of MREL which, by decision of the resolution authority, must be met by institutions solely relying on own funds and eligible subordinated liabilities (through contractual, statutory or structural means), including 'non-preferred' senior debt instruments. Under this framework, only the resolution authority has the power to impose these requirements. In this respect, the amendment which is now implemented considerably changes the paradigm, as it adds rules on the subordination requirement that are much more comprehensive and prescriptive.

Consequently, in the same way that resolution entities that are G-SIIs or subsidiaries of G-SIIs must comply with Pillar 1 MREL requirements using subordinated instruments (with the partial exemptions identified above), top-tier banks and resolution entities to which resolution authorities have decided to apply the same rules must comply with their minimum MREL amount using subordinated instruments.

The following rules are also applicable when determining the subordination requirement to be met by all the resolution entities referred to in the foregoing paragraph:

- The subordination requirement corresponds to an amount equivalent to 8% of total liabilities, including own funds; this requirement may be lowered to an amount equivalent to 3.5% of the total risk exposure amount[27];

26. See Section 2.2.6 below for details on the interaction of MREL with the combined buffer requirement.
27. For top-tier banks (but not for resolution entities subject to the same rules by decision of the resolution authority), the subordination requirement may be limited to an amount equivalent to 27% of the total risk exposure amount where the resolution authority considers that access to resolution financing arrangements is not required to resolve the institution in question or, where required, that the overall MREL requirement allows the institution to meet the requirements on access to these arrangements.

- For a maximum of 30% of all such resolution entities that are under the jurisdiction of a resolution authority[28], the subordination requirement arising from the previous paragraph may be increased where one of several circumstances applies[29]. When considered in conjunction with the combined buffer requirement and the Pillar 1 MREL requirements applicable to G-SIIs, top-tier banks and resolution entities subject to the same rules, this additional subordination amount may not exceed the greater of the following:
  - 8% of total liabilities of the resolution entity, including own funds;
  - The sum of two times the Pillar 1 prudential requirements, two times the Pillar 2 prudential requirements and one time the combined buffer requirement.

A subordination requirement may only be imposed on the remaining resolution entities where required to address risks arising from the need to comply with the 'no creditor worse off' principle. This requirement is strictly limited to the amount needed to address these risks and may not in any case exceed an amount corresponding to the greater of the two figures also used as reference in the previous point.

2.2.5 Group treatment – distinction between external and internal MREL

One of the main innovations brought about by the review of the MREL framework is the significant development in the rules applicable to the calculation of MREL requirements to entities belonging to groups and the introduction of a distinction between the MREL to be complied with by resolution entities and the MREL to be complied with by their subsidiaries, resulting from the recognition of the differences between 'single point-of-entry' (SPE) and 'multiple point-of-entry' (MPE) resolution strategies.

In SPE strategies – typically chosen for groups with a centralised structure and operations – resolution action is applied solely at the level of the parent undertaking. Consequently, in resolution, it is the parent undertaking that bears the losses of its subsidiaries and recapitalises them. The SPE strategy thus requires the loss-absorbing capacity to be located in this parent undertaking, ensuring that the group's structure does not change post-resolution. In turn, the MPE strategy – usually associated with groups whose entities operate and raise funding independently – implies the application of resolution action to more than one entity, consequently requiring each of these points of entry to have its own loss-absorbing capacity. Given that the MPE strategy does not imply that, in resolution, the parent undertaking will support its subsidiaries that are also points of entry, the group structure in question will probably change considerably, given that the corporate group will likely be split into several groups[30].

28. Non-euro area Member States have the option to increase this amount to a level above 30%. The SRM Regulation also establishes that, for decisions on the subordination requirement taken by the SRB, this amount is calculated with reference to all the resolution entities in question for which the SRB adopts MREL decisions.
29. These are:
    - Where significant impediments to the resolvability of the resolution entity have been identified and no corrective action has been taken, or where this action is not sufficient to address these impediments and the application of an additional subordination requirement partially or fully offsets their negative impact;
    - The resolution authority considers that the feasibility and credibility of the resolution strategy set out for the entity are limited, taking into account its size, interconnectedness, nature, scope, risk and the complexity of its activities, its legal status and its shareholder structure;
    - As a result of the Pillar 2 prudential requirement, the resolution entity in question is included in the group of 20% of the riskier institutions under the jurisdiction of the same resolution authority.
30. In the event of failure of an institution, the resolution authority is not required to apply the resolution strategies set out in the resolution plans when choosing between a SPE or MPE strategy or selecting the resolution measure(s), given that, considering the circumstances of the specific case and the context of the failure, it may be more appropriate to apply a strategy different from that previously set out.

At the same time, the amendment introduces the concepts of 'resolution entity' – an entity for which the resolution plan sets out the application of resolution action in case of failure (the point of entry) – and 'resolution group' – a set made up of the resolution entity and its subsidiaries which are not themselves resolution entities or subsidiaries of other resolution entities[31]. In MPE strategies, more than one resolution entity is identified in the same group. Consequently, the resolution groups in question do not coincide with the concept of group for supervision on a consolidated basis, defined in accordance with the CRR.

For resolution entities, MREL is calculated on a consolidated basis at the level of the resolution group ('external MREL') and is met with consolidated own funds at the level of the resolution group, with the share of Tier 2 instruments with a remaining maturity of more than one year that are no longer qualified as own funds items, and with eligible liabilities which it has issued on an individual basis.[32]

A MREL requirement calculated at individual level ('internal MREL') is determined for subsidiaries that are not themselves resolution entities, in compliance with the calibration rules described above. The internal MREL for subsidiaries may be met using the following:

- Liabilities:
  - Directly or indirectly held by the resolution entity or held by another shareholder not belonging to the same resolution group, as long as the conversion of the relevant capital instruments and eligible liabilities in relation to these liabilities does not affect the control of the subsidiary by the resolution entity;
  - Fulfilling the eligibility criteria applicable to eligible liabilities of resolution entities, with the exception of the prohibition of liabilities held by entities belonging to the same group;
  - Ranking in insolvency below liabilities other than those held by the resolution entity or by minority shareholders and that are not eligible for own funds;
  - That are subject to write-down and conversion powers in a manner that is consistent with the resolution strategy of the resolution group, not affecting the control of the subsidiary by the resolution entity;
- Common Equity Tier 1 capital;
- Other capital instruments with a remaining maturity of one year or greater held by entities belonging to the same resolution group or entities that do not belong to the same resolution group, as long as the exercise of conversion powers on the latter does not affect the control of the subsidiary by the resolution entity.

The aim is to ensure that losses of institutions belonging to the same resolution group are almost entirely borne by their resolution entity using relevant funding raised previously in the market. This external loss-absorbing capacity is then redistributed within the resolution group by pre-positioning internal MREL instruments held by the resolution entity in subsidiaries during the

31. Where there are subsidiaries established in third countries (i.e. outside the European Union), the resolution group also does not include entities which, according to the resolution plan and the will of the resolution authority, are not part of the group.

32. Indeed, given that resolution tools are only applied to the resolution entity, the loss-absorbing capacity must be available on its individual balance sheet. However, own funds are taken into account at consolidated level (in a simplistic way, relevant own funds are own funds issued by the resolution entity or by its subsidiaries and held by a third party), given that relevant own funds issued by subsidiaries may also be used to absorb their losses through the exercise of write-down and conversion powers (as explained below). Consequently, the resolution entity does not need to issue external MREL instruments to bear these losses. Following the same logic, where the subsidiaries of a resolution entity belonging to the same resolution group comply with their internal MREL requirement using eligible liabilities held by minority shareholders, these instruments are also eligible for compliance with the external MREL of the resolution entity.

planning stage, and, during moments of crisis, exercising write-down and conversion powers in relation to relevant capital instruments and eligible liabilities[33]. For this purpose, the legislative amendment under analysis extended the scope of these powers to cover eligible liabilities used by subsidiaries to comply with the internal MREL requirement, thereby operationalising the upstreaming of losses in subsidiaries towards the resolution entity and the downstreaming of capital in the opposite direction[34].

Where the resolution entity and a subsidiary that is not itself a resolution entity are established in the same Member State, the resolution authority may waive compliance with an internal MREL requirement by the subsidiary, provided that there are no material impediments to the rapid transfer of funds by the resolution entity to the subsidiary, in particular in case of group resolution; the resolution authority may also allow the internal MREL of a subsidiary to be fully or partially met through a guarantee by the resolution entity, collateralised through a financial collateral arrangement[35] for at least 50% of its amount. The rule on the place of establishment of the resolution entity and the subsidiary does not change under the SRM Regulation, i.e. waivers from the internal MREL or the provision of collateral to replace the pre-positioning of internal MREL instruments are not allowed on a cross-border basis even within the Banking Union[36].

2.2.6 Interaction of MREL with the combined buffer requirement

The review of the BRRD and the SRM Regulation clarifies the relationship between MREL and the combined buffer requirement, making it clear that own funds used to comply with MREL (when calculated and expressed in the total risk exposure amount) may not be simultaneously used to comply with this combined buffer requirement. This rule is required to ensure that capital buffers may be used by banks in the way and to achieve the purpose they were designed for – i.e. that institutions may use capital buffers to absorb losses associated with periods of risk materialisation without this resulting in non-compliance with the MREL requirements, and that non-compliance with the combined buffer requirement by credit institutions will lead to restrictions on dividend distribution and the need to submit a capital conservation plan.

This stacking order of the MREL and the combined buffer requirement, requiring credit institutions to comply with the MREL requirement before being able to comply with this combined buffer requirement, allows for the possibility of an institution not complying with the combined buffer requirement despite the fact that its capital position remains unchanged. For example, where a set of eligible liabilities no longer fulfils the criterion establishing a remaining maturity of more than one year, the institution would need to reallocate Common Equity Tier 1 capital that was being used for the combined buffer requirement, in order to continue to comply with MREL.

For this reason – and assuming the institution complies with the combined buffer requirement when considered in addition to the applicable capital requirements[37] –,it was not considered

33. Set out in Articles 59 to 62 of the BRRD and Article 21 of the SRM Regulation.

34. Pursuant to the previous text of the BRRD, write-down and conversion powers could only be exercised, outside resolution (i.e. without the need for resolution action, provided all legally defined requirements were met, in particular that the institution was failing or likely to fail), in relation to the capital instruments of the institution in question. Eligible liabilities, in turn, could only be affected by the bail-in tool – i.e. the application of resolution action. Given that the review of the BRRD allows subsidiaries to meet their internal MREL requirement with a number of eligible liabilities, in addition to capital instruments, this extension of scope was necessary in order to allow these eligible liabilities of the subsidiaries to be written down or converted outside resolution.

35. Pursuant to Article 2(1)(a) of Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements.

36. On this issue, see Section 4 of Special Issue "Amendment of the CRD IV-CRR: what is new", *Financial Stability Report*, December 2018; the reasoning in this Special Issue on waivers from prudential requirements on an individual basis also applies here.

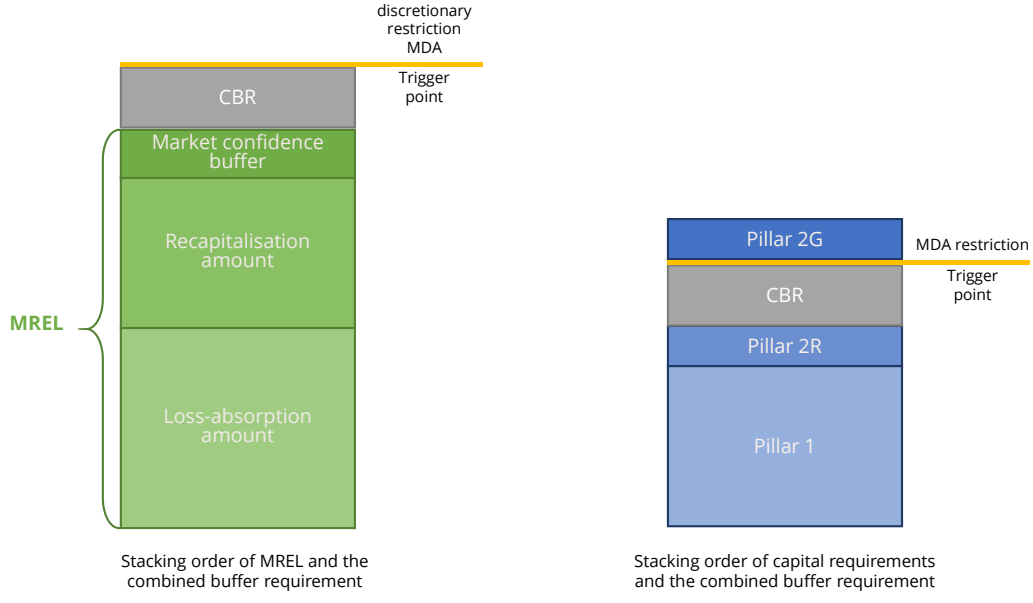
37. Otherwise, the relevant provisions of the CRD apply, most importantly an automatic activation of restrictions to the MDA.

appropriate to automatically activate the maximum distributable amount (MDA) restrictions,[38] as a result of non-compliance with the combined buffer requirement. Consequently, within the context of MREL, the power to impose these restrictions is conferred on the resolution authority, to be exercised in the following way:

- During the first nine months of non-compliance with the combined buffer requirement, when considered in conjunction with MREL, the resolution authority should not, as a rule, impose restrictions to the distribution of dividends and coupon payment, unless deemed necessary, inter alia, for the reasons that led to non-compliance and the development of the institution's financial situation;
- After this nine-month period, the resolution authority must, as a rule, impose these restrictions, except where it considers that non-compliance is due to a severe disruption in the functioning of financial markets making it impossible for the institution to issue new instruments eligible for MREL.

The calculation of the MDA related to the MREL ('M-MDA') is the same as the calculation of the MDA currently set out in the CRD[39]. In addition, the prohibition to use Common Equity Tier 1 items to simultaneously comply with MREL and the combined buffer requirement only applies in relation to the overall MREL requirement, but not in relation to the subordinated component set by the resolution authorities – i.e. an institution does not need to simultaneously comply with the subordination amount set in accordance with the rules referred to in Section 2.2.4 above and the combined buffer requirement.

Figure 3 • Schematic overview of the interaction of the combined buffer requirement with MREL and the prudential requirements



Notes: Not to scale. Key: CBR – Combined buffer requirement; Pillar 1 – capital requirements, set out in Article 92(1)(c) of the CRR; Pillar 2 – additional capital requirements, set out in Article 104-A of the CRD; Pillar 2G – guidance on additional capital requirements, set out in Article 104-B of the CRD.

38. More specifically, the prohibition of restrictions above the MDA through:
- Distributions in connection with Common Equity Tier 1 capital;
- Creation of obligations to pay variable remuneration or discretionary pension benefits or pay variable remuneration if the obligation to pay was created at a time when the entity failed to meet the combined buffer requirement;
- Payments on Additional Tier 1 instruments.

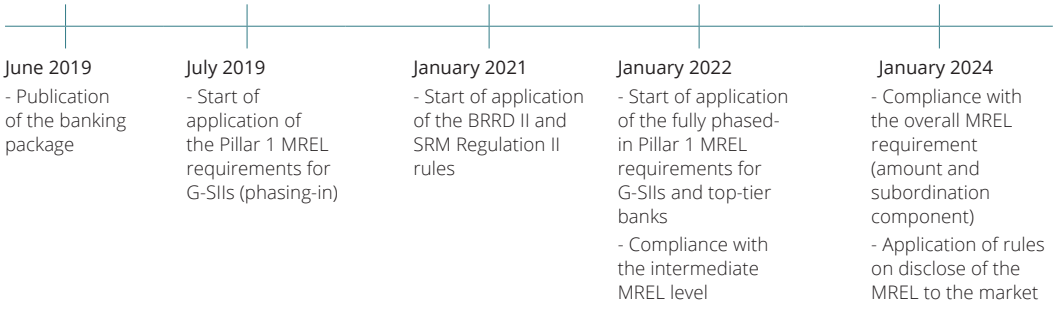
39. Rules laid down in Article 141 of this legal act.

2.2.7 Transitional period

The European Commission's initial proposal only established a transitional period for G-SIIs to comply with the Pillar 1 MREL requirement, with no parallel provision for the remaining institutions. Both the Council of the European Union and the European Parliament introduced more detailed rules on the subject in the general approach and the final position respectively. The final texts of the BRRD and the SRM Regulation therefore establish the following:

- The resolution authority must establish appropriate transitional periods for institutions to comply with their MREL requirements (both external and internal, covering the overall MREL amount and the subordination requirement). The transitional period ends on 1 January 2024 for all institutions, unless the resolution authority considers it appropriate to set a transitional period ending on a later date for a specific institution, taking into account inter alia the development of the institution's financial situation and its ability to comply with the MREL requirement in a reasonable timeframe;
- The resolution authority must also set an intermediate MREL amount for each institution, representing part of the overall MREL amount, which must be complied with at roughly half way through the period of time granted to institutions to increase their loss-absorbing capacity. The intermediate amount must ensure a linear build-up of own funds and eligible liabilities with a view to compliance with the overall MREL amount at the end of the transitional period and must be complied with by institutions from 1 January 2022 onwards;
- Top-tier banks, as well as resolution entities to which resolution authorities have decided to apply the same rules, comply with their Pillar 1 MREL requirements from 1 January 2022 onwards (without prejudice to these institutions only needing to meet their overall MREL amount from 2024 onwards); these minimum requirements do not apply in the two years following the application of bail-in or the write-down or conversion of capital instruments and other liabilities into Common Equity Tier 1;
- The subordination requirements applicable to resolution entities that are G-SIIs or subsidiaries of G-SIIs, top-tier banks and entities to which the resolution authority has decided to apply the rules of top-tier banks do not apply in the three years following the identification of the entity or group it belongs to as G-SII or top-tier bank;
- After the application of resolution tools to an institution, the resolution authority must establish a new transitional period for resolved institutions to meet the MREL requirement determined for them, both in terms of the overall MREL amount and the subordination component.

Figure 4 • Schematic overview of relevant dates



Note: Not to scale.

2.2.8 Disclosure

The BRRD will also explicitly establish MREL disclosure requirements, applicable to institutions with a resolution plan which does not set out their winding-up in the event of failure. More specifically, these institutions will be required to disclose to the market at least on an annual basis:

- The amount of own funds and eligible liabilities available for compliance with the MREL requirements and the composition of these items, including their maturity profile and ranking in insolvency;
- The MREL requirement determined for them, expressed in the total risk exposure amount and the total exposure measure.

In order to ensure the effectiveness of the transitional periods established by law and by resolution authorities, the requirements for disclosure to the market are only applicable from January 2024 onwards. However, where the resolution authority has established a transitional period for an institution ending after that date, the institution in question is only required to meet these obligations from the end of the respective transitional period.

2.3 Moratorium

In parallel with the existing power of the resolution authority of suspending payment or delivery obligations pursuant to a contract to which a credit institution under resolution is a party, provided the three requirements for applying resolution tools are fulfilled, the review of the BRRD also confers on the resolution authority a new moratorium power, an ultima ratio measure which may be exercised at a prior date.

Indeed, resolution authorities will also be able to determine the suspension of these payment or delivery obligations where the following cumulative conditions are fulfilled:

- The institution is failing or is likely to fail;
- There is no alternative private sector measure that would prevent the failure of the institution within a reasonable timeframe;
- The power of suspension must be exercised to prevent the institution's financial conditions from continuing to deteriorate;
- This power must be exercised in order for the resolution authority to assess whether the criterion of public interest is fulfilled[40], to choose the most appropriate resolution tools to be applied to the institution or to ensure these measures may be applied in an effective manner.

Although the delineation of the obligations included in the moratorium power depends on a decision on a case-by-case basis by the resolution authority, obligations owed to payments and financial instrument settlement systems or operators, central counterparties or central banks can never be included. Where the moratorium power is exercised in relation to eligible deposits[41], Member States may establish that the resolution authority must ensure access by affected depositors to an appropriate daily amount[42].

40. This criterion, the third condition for applying resolution measures, determines that an institution may only be subject to resolution measures where these are needed and suited to achieve some of the resolution objectives and where the winding-up of the credit institution, by virtue of the withdrawal of its authorisation, does not achieve these purposes as effectively.
41. In Portugal, deposits that are not excluded from the repayment guarantee by the Deposit Guarantee Fund (FGD) and the Mutual Agricultural Credit Guarantee Fund (FGCAM).
42. In addition, the review of the BRRD amended the scope of the existing moratorium power to cover eligible deposits, with Member States being granted an option in terms similar to those mentioned.

As regards the period of suspension of payment and delivery obligations, the duration of the moratorium power may not exceed the period between the publication of the decision to suspend and midnight at the end of the business day following that publication, with the payment and delivery obligations of the counterparties pursuant to the same contract being suspended for the same period of time.

2.4 Contractual recognition of bail-in

Article 55 of the BRRD currently establishes that credit institutions must include, in the contractual instruments governing a claim, a clause by which the counterparty recognises that the claim may be subject to bail-in and agrees to its effects. This obligation applies to contracts concluded after the entry into force of national provisions transposing this directive which result in a claim that is not expressly excluded from bail-in, that is not a preferred deposit under the BRRD[43] and that is governed by the law of a third country[44].

However, practice has demonstrated that credit institutions are not always able to insert this clause in contracts they are a party to – either because this is not allowed pursuant to the law of the relevant third country or because international protocols or internationally agreed standard clauses apply. The review of the BRRD therefore enables institutions to invoke the impracticability, at a legal level or otherwise, of including the required clause in contractual provisions governing a given claim. This decision must be notified in a reasoned manner to the resolution authority, which may disagree with the institution and require the inclusion of the contractual clause in the instrument in question on the basis of the need to ensure its resolvability.

Impracticability may not be invoked with reference to capital instruments or unsecured or privileged debt instruments. In addition, claims that do not include the contractual clause set out in Article 55 of the BRRD, either because this would be impractical or in violation of that provision, may not be used to comply with MREL, although this does not prevent resolution authorities from applying bail-in to these claims.

2.5 Sale of subordinated eligible instruments to retail clients

Although this issue is not included in the European Commission's initial proposal on the revision of the BRRD, the political agreement reached during the trilogues lays down a set of rules applicable to the placing of subordinated instruments eligible for compliance with MREL with retail clients, in accordance, inter alia, with the joint statement by the European Banking Authority and the European Securities and Markets Authority of 30 May 2018 on the treatment of retail holdings of debt financial instruments subject to the BRRD[45].

This refers to any sale of instruments that are not eligible for own funds and comply with all eligibility criteria for the MREL requirement, including the subordination criterion (thus also

43. In Portugal, excluding deposits of natural persons and micro, small and medium-sized enterprises in the amount exceeding the limit of the repayment guarantee by FGD or FGCAM, as well as deposits of these persons and enterprises with branches established outside the European Union of institutions that are members of FGD or FGCAM, provided none of the situations that would lead to their exclusion from that repayment guarantee apply.

44. This obligation may be waived where the law of the third country in question, or a binding agreement concluded with that country, ensures the effectiveness of the write-down and conversion powers. In addition, with the review of the BRRD, institutions with a MREL not exceeding the loss-absorbing amount are not subject to this obligation, provided they do not use claims covered by Article 55 to comply with their MREL.

45. Available at https://eba.europa.eu/documents/10180/2137845/EBA+ESMA+Statement+on+retail+holdings+of+bail-inable+debt+%28EBA-Op-2018-03%29.pdf.

including 'non-preferred' senior debt instruments). However, the BRRD provides Member States with the option of requiring that these rules be applied to the sale of instruments eligible for own funds or other instruments resulting in bail-inable claims.

Consequently, pursuant to the new rules to be added to the BRRD, any seller may only sell these instruments to retail clients[46] after conducting and documenting an assessment of the operation's suitability and concluding that the instrument in question is appropriate for the retail client[47].

In addition, in the case of a retail client with an investment portfolio[48] not exceeding €500,000 at the time of purchase, the seller must also ensure that:

- The retail client does not have an aggregate amount of subordinated eligible instruments in his investment portfolio exceeding 10% of the portfolio;
- The initial investment amount totals at least €10,000.

As an alternative to these requirements, Member States also have the option of only establishing a minimum nominal amount of at least €50,000 for the subordinated eligible instruments in question[49].

In addition, Member States must only apply these rules to instruments issued 18 months following the entry into force of the directive amending the BRRD and non-compliance with these rules does not compromise the eligibility of the instruments in question for MREL.

3 Conclusion

The review of the BRRD and the SRM Regulation introduces a number of significant improvements to specific aspects of the resolution framework. The in-depth review of the legal framework on MREL is particularly relevant and opportune; although maintaining its purpose and guiding principles, the MREL requirement is deepened and detailed in terms of its rules on calibration, eligibility requirements, subordination component, compliance by groups and internal distribution of the loss-absorbing capacity, consequences of non-compliance and transitional period in a way that will legitimise and help the resolution authority act in this respect.

However, for the domestic financial system, the need to comply with the MREL requirement will continue to be a major challenge and a risk to financial stability, as highlighted in this *Financial Stability Report*[50], a circumstance which has not changed in substance following the revision of the underlying legal framework.

46. Pursuant to Article 4(1)(11) of the DMIF – Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments.
47. Pursuant to Article 25 of the DMIF.
48. Including all cash deposits and financial instruments and excluding instruments received as collateral.
49. The BRRD also foresees a third option, only available to Member States where the value of the total assets of entities established in that Member State and subject to a MREL requirement does not exceed €50 billion, allowing for the sole application of the criterion establishing an investment amount of at least €10,000.
50. See Section 1.1 of this *Financial Stability Report*.

The macroprudential policy experience in the European Union: main challenges of the interaction between macroprudential instruments

1 Introduction

This Special issue reviews macroprudential policy in the European Union (EU) since the European Systemic Risk Board (ESRB) was created in 2010, with the purpose of reflecting on the main challenges faced by macroprudential authorities. Following institutional framework reforms across most EU Member States, associated with the appointment of macroprudential authorities, macroprudential policy has been gradually implemented and consolidated. Although only around eight years have gone by, the economic environment and the financial system have changed markedly in many European countries, which experienced a deep economic and financial crisis, although at differing paces, and from which some are gradually recovering. Moreover, major financial sector regulation and supervision reforms have been introduced, notably the establishment of the Banking Union, the implementation of recovery and resolution schemes of credit institutions and the review of the regulatory framework governing the banking system. A notable component of the latter was the quantitative and qualitative strengthening of capital requirements under the Basel III Accord.

Macroprudential policy has been implemented against this unique background, establishing itself as an autonomous economic policy area interacting with other policy domains. Along the way, macroprudential authorities have faced multiple challenges, the nature of which has changed in tandem with the upturn in economic activity, the stabilisation and consolidation of financial systems in terms of profitability and sustainability, and the signs of a reversal in the financial cycle, the intensity of which is also conditional on the specific situation in each country.

This Special issue starts with a reflection on the challenges facing macroprudential policy. It goes on to review the main macroprudential policy measures implemented in the EU and ends with an analysis on the latest stage of macroprudential policy, where new challenges emerge, with particular emphasis on those related to the interaction between macroprudential instruments. In particular, this section looks into the set of instruments that target lending conditions (henceforth, borrower-based instruments), given that authorities have preferred this policy option to address the systemic risk arising from developments in the residential real estate market, which has affected the majority of the European countries.

2 The macroprudential policy experience in the European Union

Macroprudential policy is by nature chiefly preventive, as it seeks to act during the early expansionary phase of business and financial cycles, with the purpose of mitigating or reducing the build-up of systemic risk and/or strengthening the resilience of institutions.[1] Despite its relatively short existence, macroprudential policy in Europe has faced multiple challenges. On the one hand, the context arising from the global financial crisis was unfavourable to the implementation of macroprudential policy, whose instruments had been developed to promote financial stability and mitigate the costs of (new) financial crises to the economy and social welfare, rather than to deal with legacies from the global financial crisis. On the other hand, its recent implementation in the EU – whose institutional milestone is the establishment of the ESRB in 2010 – naturally places restrictions on the set of macroprudential instruments available to each authority. For instance, in countries like Luxembourg[2] and Czechia,[3] macroprudential authorities have not yet been given powers over a number of borrower-based instruments, and therefore have at their disposal a less comprehensive toolkit of macroprudential instruments.[4] These constraints may condition action by macroprudential authorities, which will be all the more appropriate as more suitable are the instruments available. Finally, knowledge and experience are still limited in some areas, and therefore also pose a challenge to macroprudential policy action.

The global financial crisis provided a very adverse background characterised by the materialisation of previously accumulated risks, with macroprudential policy unfolding in an environment in which institutions were dealing with legacies from the crisis. This legacy took various forms, for instance, a large stock of non-performing loans (NPLs), weak lending, low bank profitability, structural changes in the financial system across several countries, among other constraints which dampened the attractiveness of investing in the sector.

Furthermore, during this period, credit institutions faced the challenge of complying with the new regulatory demands. The global financial crisis showed that bank capital levels were too low, which prompted a proposal for more stringent capital requirements, under the revised Basel II Accord (also known as Basel III Accord). In light of the new European regulatory framework, which transposed into the European context the Basel III Accord, microprudential supervision acted to ensure that the capital ratios of the most significant credit institutions would reach the new minimum capital requirements. Against a background of economic slowdown/recession and financial vulnerability, low economic growth prospects, very low confidence indices and reduced profitability levels, these regulatory demands put varying pressure on each country's banking system, according to the vulnerabilities inherited from the crisis.

1. The preventive nature of macroprudential policy is advocated in the de Larosière Group Report, which outlines the main guidelines for financial regulation and supervision reforms in the European Union: The de Larosière Group (2009), Report of the High-level group on financial supervision in the EU, February 2009.
2. In Luxembourg, the macroprudential toolkit was augmented to include borrower-based instruments with the purpose of mitigating systemic risk stemming from the residential real estate sector. At present, there is a draft law which, following approval by the Parliament, will give such powers to the Luxembourgish macroprudential authority (https://www.cssf.lu/surveillance/surveillance-macroprudentielle/macroprudential-instruments/borrower-based-measures/).
3. In Czechia, the macroprudential authority does not have the power to make binding decisions on credit standards, but may issue recommendations.
4. Several countries have been expanding their macroprudential toolkit over the past few years (ESRB, 2017). For instance, at the end of 2017, Sweden amended the legislation to confer additional powers to the national macroprudential authority as regards borrower-based measures. As of July 2018 the Austrian macroprudential authority has power over several borrower-based instruments, which can be applied to new loans for house purchase. Finland, which was one of the few European countries without a systemic risk buffer, enacted a law in 2017 conferring the country's macroprudential authority powers to apply this macroprudential instrument to the banking sector.

Consequently, macroprudential policy action was also affected by microprudential policy intervention. During this period, although the new regulatory framework already provides for the build-up of certain capital buffers, such as the capital conservation buffer or the other systemically important institutions buffer (although the latter was not mandatory), where implemented by national macroprudential authorities these buffers could put excessive pressure on credit institutions, in addition to compliance with the minimum requirements imposed by microprudential regulation.

It is therefore unsurprising that, particularly in some countries, macroprudential policy authorities have initially decided to postpone the introduction of instruments covered by European legislation (mostly, capital-based instruments, such as the capital conservation buffer and the other systemically important institutions buffer) or to phase them in. Furthermore, during the downswing of the financial cycle, when risks had already materialised, it was not appropriate to implement instruments to address cyclical risks, such as the countercyclical capital buffer. These decisions benefited from a regulatory framework that assigns a degree of discretion to macroprudential authorities allowing them to tailor their action to the specificities of each country. The discretion exercised by macroprudential authorities, together with the different institutional setups for macroprudential policy across countries, have led, as expected, to some heterogeneity in the action taken by these authorities. These differences are visible not only in the type of instruments used, but also in the methodologies, calibration levels and the speed at which measures were implemented. The possibility of devising measures according to specific national circumstances is seen as a positive feature of macroprudential policy, by contrast with monetary policy, which is common to all euro area countries.

Over the past few years, the European juncture has been characterised by economic growth, low interest rates and increased credit to the non-financial private sector, although heterogeneity between countries remains. During this period, the financial cycle seems to have reversed and entered an expansionary phase, driven by these factors and the greater momentum in the real estate market and in related lending activities (ESRB, 2019). Consequently, macroprudential authorities in the EU have been increasingly active in promoting financial stability. The 2019 ESRB report on macroprudential policy in the EU states that, in 2018, most Member States took action, with a substantial increase in the number of measures implemented compared with the year before.[5] On the basis of information gathered by the ESRB on macroprudential measures implemented in the EU since 2014 (the first year for which the ESRB started to collect these data), 37 macroprudential measures were implemented, in total, in 2014, rising to 58 in 2018 (Chart II.2.1). These data reflect the increasing intervention of macroprudential authorities across Europe over the past five years.

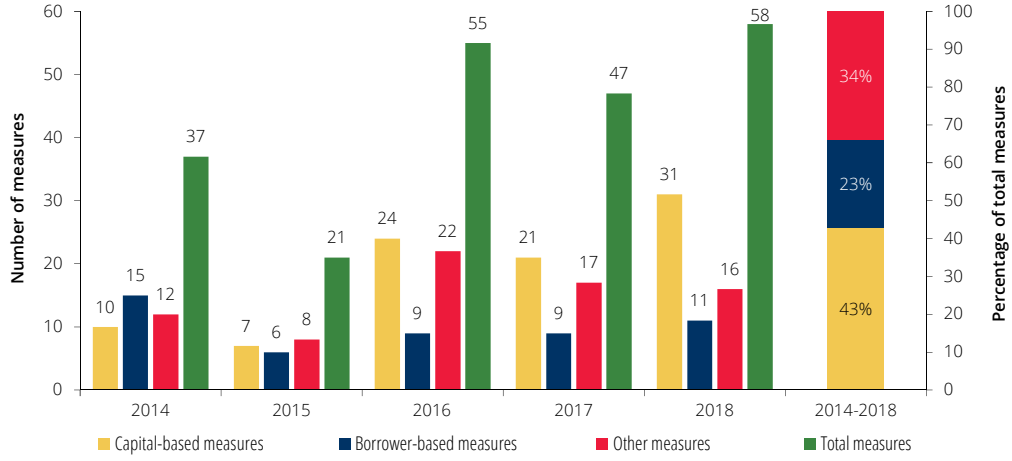
Between 2014 and 2018, 218 macroprudential measures were adopted in the EU, most of which were capital-based measures (43% of the total), followed by borrower-based measures (23% of the total), with the remaining share corresponding to other types of macroprudential measures. Capital-based instruments – which include the systemically important institutions buffer, the systemic risk buffer, risk weights, the countercyclical capital buffer and the capital conservation buffer – were the most commonly implemented instruments during this period, notably in 2018, when a total of 31 capital-based measures were taken. Of all capital-based instruments, the

5. The macroprudential measures most frequently taken in 2018 were: the activation or increase of the countercyclical capital buffer, the activation of the systemic risk buffer, the introduction of limits on the debt service-to-income ratio and reciprocity measures. Overall, these measures aimed at strengthening resilience and/or mitigating or reducing cyclical or structural systemic risk and, in some cases, at addressing a combination of both types of risk.

systemic risk buffer was the most implemented over the past five years (34 times), followed by the countercyclical capital buffer, which has become increasingly prominent, particularly in 2018, when 13 such measures were taken. The expansionary phase of the financial cycle observed practically everywhere in Europe has played a role in the increased use of the countercyclical capital buffer.[6]

Borrower-based measures – which include limits on the loan-to-value ratio (LTV), the ratios of lending to income (loan-to-income (LTI), debt-to-income (DTI) and debt service-to-income (DSTI)), limits on maturity and amortisation requirements – have also been frequently employed, most notably limits on the LTV ratio, totalling 19 measures implemented, and on the DSTI ratio, which accounted for 14 measures by the end of 2018. However, there is one factor that distinguishes the implementation of borrower-based measures from that of capital-based measures. As regards borrower-based measures, several macroprudential authorities have chosen for combining a variety of instruments targeting credit standards, in order to benefit from the complementarity between these instruments and to enhance the effectiveness and efficiency of macroprudential measures. This is less often the case for capital-based instruments. The tendency to combine borrower-based measures is discussed below.

Chart II.2.1 • Macroprudential measures implemented in the European Union by type of instrument | Number and per cent



Source: ESRB. Notes: (a) Capital-based measures include the systemic risk buffer, the countercyclical capital buffer, the capital conservation buffer, the systemically important institutions buffer and sectoral capital requirements; borrower-based measures include limits on the DSTI and LTI ratios, the LTV ratio, inter alia, limits on maturity and amortisation requirements; other measures include reciprocity and liquidity measures, limits on large exposures and the use of Article 458 (excluding capital-based measures). (b) Macroprudential measures refer to new measures and amendments to existing measures, if deemed substantial. The data do not include: the early introduction of the capital conservation buffer, exemption of investment firms from the capital conservation and countercyclical capital buffers, countercyclical capital buffer confirmed at 0% or unchanged. In the case of the systemically important institutions buffer, data only include changes to each institution's buffer identification and calibration methodologies (excluding changes to the number of systemically important institutions or their buffer rates stemming from the annual application of methodologies or changes to the phase-in schemes).

6. For more details on the European experience with the activation of the countercyclical capital buffer, see Box 3, "Implementation of countercyclical capital buffers in the European Union", *Financial Stability Report*, December 2018.

According to the revision conducted by ESRB (2019), the main risks that have led to macroprudential policy action relate to house prices developments, which are an important component of the financial cycle and have steadily risen in several European countries, including Portugal. The risks to the financial system associated with the (residential and commercial) real estate sector continue to warrant macroprudential action. Several Member States have adopted at least one macroprudential measure, using not only instruments targeting credit standards, but also capital-based instruments, such as the increase in risk weights associated with exposures collateralised by real estate.[7] Furthermore, risks associated with the high level of indebtedness of the private non-financial sector, as well as the protracted period of low interest rates, have warranted the implementation of a number of measures.

3 Challenges stemming from the interaction of macroprudential instruments

In the last few years, economic activity has grown in tandem with the expansionary phase of the financial cycle in some countries. The more favourable economic environment could lead to the emergence and build-up of systemic risk of a varying nature. At present, macroprudential policy faces other challenges, which are more in line with its original mission, i.e. to mitigate the build-up of cyclical systemic risk and strengthen the resilience of the financial system to adverse shocks. For that purpose, macroprudential authorities have actively implemented a considerable number of measures, benefiting from the current recovery in the business and financial cycles. However, given that these measures are still very recent, the countries that have adopted them have yet to go through a full financial cycle and, therefore, it is still too early to assess the effects of this policy action on the risks to be mitigated or on the strengthening of the financial system's resilience.

As a result of this momentum, challenges arise from the interaction between macroprudential instruments that have already been adopted and those still in the process of implementation. The instruments implemented in the meantime have since coexisted, even where their activation was largely deemed as independent from the activation of any other instrument. Because underlying many of these instruments is the same type of transmission mechanism, their effectiveness and efficiency may be (positively or negatively) affected by these overlapping mechanisms, even if only partially.[8]

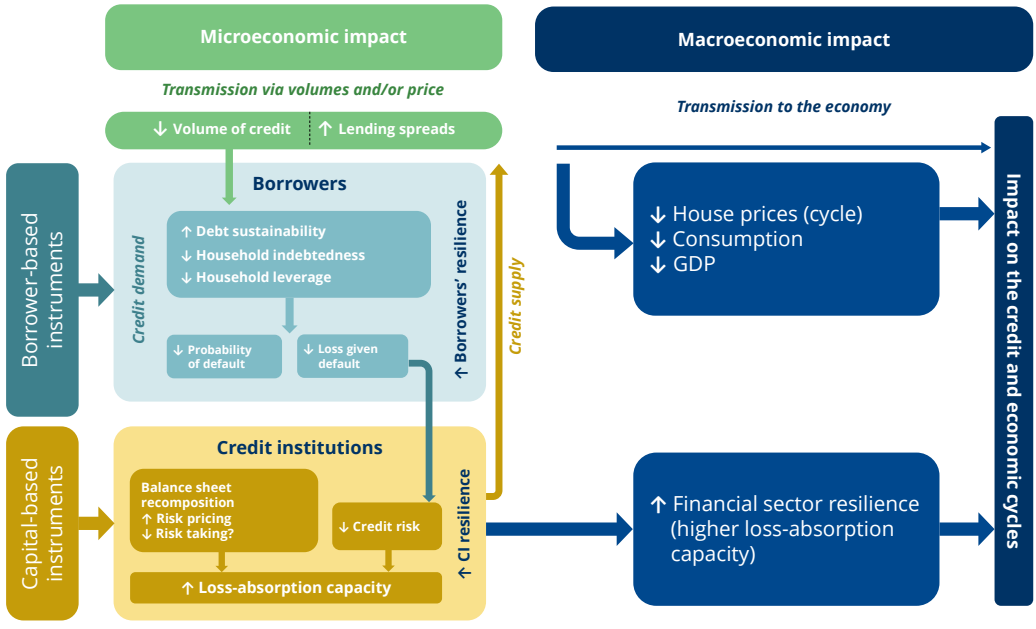
3.1 Transmission mechanisms for different types of macroprudential instruments

Figure 1 shows the main transmission mechanisms of borrower-based and capital-based instruments. The analysis focuses only on these two types of instruments, since they are the most frequently activated in the EU.[9] Both types of instrument may impact on the banking sector's resilience and the mitigation of systemic risk, although more or less indirectly, depending on the macroprudential instrument considered.

7. Namely, by activating measures under Article 458 of the CRR.
8. In addition to the effects specific to each jurisdiction, macroprudential instruments can have a cross-border impact, often due to attempts by institutions to circumvent domestic measures. Furthermore, it is widely accepted that macroprudential policy shares transmission channels with other policy areas, such as monetary or microprudential supervision policies. Although all these domains are also of interest, they are not analysed in this Special issue.
9. There are other types of macroprudential instruments, which are not analysed here, such as liquidity instruments.

Capital-based instruments have a direct impact on the banking system's resilience, since they strengthen the loss-absorption capacity of credit institutions. By building up additional capital buffers, credit institutions are capable of absorbing losses, thereby reducing the likelihood of credit flow disruptions during the downswing of the financial cycle. The impact of an increase in additional buffers on the dampening of the financial cycle is conditional on the action taken by institutions to meet capital requirements: through the issuance of equity, internal capital generation/accumulation (which can be achieved, inter alia, with lower pay-outs of dividends and/or higher risk premia on new loans) and/or deleveraging in some asset classes (including through a recomposition of the credit portfolio). As such, depending on how institutions choose to comply with the new capital requirements, lending volumes may be affected. Capital-based instruments mostly act on the stock of credit, which means that they are applied to all credit transactions recorded on institutions' balance sheets. Consequently, capital requirements are particularly suited in those cases where risks have already accumulated, but have yet to materialise, which is generally true in the advanced stage of the financial cycle expansion.

Figure 1 • Transmission mechanisms of macroprudential instruments



Adapted from: Committee on the Global Financial System (2012), *Operationalizing the selection and application of macro-prudential instruments*, CGFS Papers No 48, December.

Capital-based instruments may be broken down into structural or cyclical instruments, depending on the type of systemic risk that institutions aim at mitigating or reducing; into sectoral instruments – which include instruments targeting specific exposures, activities or geographies – or wide-ranging instruments (such as the countercyclical capital buffer or the systemically important institutions buffer); or into banking-system-wide or institution-specific instruments (such as the systemically important institutions buffer). The transmission of sectoral capital-based instruments, such as the increase in risk weights or the application of a sectoral systemic risk buffer, naturally differs from wide-ranging instruments. Such differences mostly arise from the fact that these instruments render certain types of credit more expensive to institutions, thereby providing incentives to a more marked reduction in the targeted class of credit. Choosing these

instruments instead of a wider-ranging capital instrument may be warranted, for instance, by the possibility that developments in lending to non-financial corporations and households stand at different phases of the cycle. The fact that these credit segments may not be fully synchronised leads macroprudential authorities to consider credit cycles by institutional sector, and there is evidence that sectoral risks may act as sources of instability in the banking system and the real economy (BCBS, 2018). These sectoral instruments may, however, lead to unwanted and unexpected results, most notably as regards the shift of the credit portfolio towards assets that involve higher systemic risk or changes to investment decisions of economic agents, with an impact on the economy.

In turn, borrower-based instruments have a direct impact on borrowers' resilience, given that they limit the amount of credit based on their income, in the case of limits on the DTI or DSTI ratios, and on the assets pledged as collateral for loans, in the case of limits on the LTV ratio. These instruments reduce the likelihood of a default, by making the creditworthiness of borrowers conditional on their income, and the loss given default, by containing indebtedness levels in proportion to the value of the property pledged as collateral for securing the credit operation. Consequently, the credit risk associated with the borrowers covered by such constraints decreases and, as such, these instruments also enhance the quality of the credit portfolio held by credit institutions to which those limits apply, thus contributing to more resilient institutions. Resilience is also strengthened indirectly, due to the effect of these instruments on the financial cycle and via the expectations channel. They are distinct from capital-based instruments also in this regard, as they impact on new loans and, as such, their effect on on-balance-sheet credit transactions is likely to be very gradual, at the pace shaped by the conversion of flows into stocks, which hinges on the maturity of loans (stock of loans and new loans) and the pace defined in the loan amortisation schedule.

Furthermore, instruments targeting credit conditions may also affect the financial cycle. For instance, more stringent LTV or DSTI ratios may restrict lending by limiting the amount of credit granted to the borrowers to which the limits apply. Typically, these limits apply to (new) loans for house purchase or collateralised by real estate, and therefore the reduction in lending may lead to a decrease in demand for housing and an increase in savings. Depending on the policy goal and, consequently, on how stringent limits are and the group of borrowers covered by the measure, house price dynamics may also be affected, which, in turn, limits access to credit more comprehensively, thereby generating a more marked fall in credit demand and the amount of credit granted by institutions.

3.2 Challenges stemming from the interaction of macroprudential instruments

The fact that similar transmission mechanisms coexist poses challenges from the perspective of macroprudential policy implementation. As mentioned above, capital-based instruments may also be efficient in dampening the financial cycle. For instance, the regulatory framework of the countercyclical capital buffer is associated with both policy goals: the establishment of a resilient system throughout the expansionary phase of the financial cycle and the dampening of the financial cycle. However, the importance attributed by each authority to each goal may differ across countries. According to the ESRB (2018), many countries consider that the goal of dampening the amplitude of the financial cycle is a (positive) secondary effect of the countercyclical capital buffer, while other authorities, such as in Spain or Italy, view both goals as equally important. Likewise, borrower-based instruments can also help strengthen the banking system's resilience, in light of

their impact on the quality of the credit portfolio and on credit demand, potentially affecting the real estate sector, to the extent that they may help dampen the risks associated with feedback loops between credit and house prices. A study based on the review of the implementation of macroprudential instruments at European level concludes that borrower-based measures may also be used to directly influence the flow of housing loans, as well as to strengthen the resilience of households (O'Brien and Ryan, 2017). However, Fahr and Fell (2017) warn about the existence of trade-offs between the two types of instrument, and conclude that this may indicate that, to dampen the amplitude of the financial cycle, macroprudential action aiming at strengthening the resilience should be toned down, while failure to dampen the financial cycle may warrant a more proactive intervention to make the financial system more resilient.

To some degree, the overlap, even if only partial, of transmission mechanisms across instruments makes it possible to meet the goals of strengthening the resilience and dampening the financial cycle by using instruments (or a combination thereof) that, although not seen as the best option among a wide range of macroprudential instruments, can be just as effective in achieving those goals. Indeed, in a number of instances, macroprudential authorities have chosen to combine instruments, to benefit from the positive effects of sharing transmission mechanisms, as recommended by the ESRB. In its Handbook, this European institution identifies situations in which it may be more suitable to implement a combination of instruments. For instance, in systemic risk situations associated with the residential real estate market, the use of instruments with a direct impact on debtors together with instruments that directly affect the resilience of institutions is recommended, with the purpose of mitigating or reducing risks stemming from credit demand (borrowers/debtors) and credit supply (credit institutions). As mentioned above, the combination of borrower-based instruments has been favoured by European macroprudential authorities vis-à-vis other sorts of combinations, such as the combination of capital measures or of the latter with borrower-based measures.[10]

An example of a combination of borrower-based instruments is the measure implemented by Banco de Portugal targeting new consumer credit agreements that sets out limits on the LTV and DSTI ratios and on maturity, while recommending the regular payment of principal and interest throughout the life of each loan. The combination of macroprudential instruments set out in this measure aims to maximise the benefits of each instrument, while minimising its costs and other unintended negative effects.[11] The purpose of this measure is to guarantee that credit institutions and financial corporations do not engage in excessive risk-taking, in a particularly favourable economic and financial environment, and to foster sustainable household borrowing. Other European authorities have chosen to combine this type of instrument with the purpose of mitigating the risk of excessive growth in credit to households, particularly related to lending to households for house purchase and developments in the real estate market. Policy goals may vary across countries, given that they are set according to the risks and vulnerabilities identified and country-specific conditions.

It is therefore important to discuss the reasons for the greater propensity of macroprudential authorities to combine instruments targeting credit standards, instead of combining capital-based instruments or between different types of instrument. On a purely conceptual level, three reasons may explain this: first, this trend may be related to the type of systemic risk that has been

10. Most probably, the challenge of combining different types of instrument will arise more clearly at a later stage in the financial cycle.

11. Leal, A. C. and Lima, D. (2018), "Macroprudential policy in Portugal: experience with borrower-based instruments", Banco de España, *Financial Stability Review*, No 35.

more frequently identified by the macroprudential authorities; second, complementarities and synergies may be more obvious within this type of instrument and less obvious for other types of instrument; finally, the phase of the financial cycle and, in particular, its interaction with the recent house price dynamics may also influence the choice of instruments to be adopted.

3.2.1 Systemic risk stemming from developments in the residential real estate sector

As regards the first reason, one the main risks to financial stability that has given rise to the adoption of macroprudential measures by most macroprudential authorities in each country relates to developments in the residential real estate sector (ESRB, 2018). According to the recent analysis of the euro area residential real estate market conducted by the ECB,[12] the market is expanding, following a recovery period that started at the end of 2013. The recovery in the real estate sector is common to almost all euro area countries and is at a relatively advanced stage. Estimates point to a slight overvaluation of house prices, on average, in the euro area, but the analysis carried out by the ECB disregards the imminent risk of a contraction in the business cycle related to developments in the residential real estate market. The ECB expects that the recovery in the residential real estate market will proceed, but at a more moderate pace, in line with the projected slowdown in economic activity.

Macroprudential authorities have been particularly attentive to the dynamics of the residential real estate sector, most notably to the acceleration in house prices over the past few years, often accompanied by rapid growth in loans to households and an increase in household indebtedness, given the importance of this sector to financial and macroeconomic stability.[13] To address these risks, authorities have chosen to combine limits on the LTV ratio with limits on the DSTI/DTI ratios, at times coupled with limits on maturity or amortisation requirements.[14] There are large differences in how authorities implement these measures, whether in terms of legal form, instrument definition, exemptions considered, phase-in arrangements, choice of instruments to be implemented, among other features.[15] Despite these differences, macroprudential authorities tend to share the understanding that the combination of borrower-based instruments reinforces their effectiveness and efficiency in the mitigation of systemic risk stemming from the residential real estate sector.

3.2.2 Complementarities and synergies between instruments

Given that borrower-based instruments are particularly suited to mitigate risks related to the residential real estate sector and, given how they interact, they have been mostly seen as complementary instruments rather than substitute instruments, particularly when multiple risks and vulnerabilities coexist. The complementarity between instruments may not only enable authorities to address risk(s) more effectively but also to minimise potential undesirable effects and their circumvention by the institutions to which the measures apply. For instance, as mentioned above, limits on the DSTI ratio have a greater impact on the probability of default of borrowers,

12. European Central Bank (2018), *Economic Bulletin*, Issue 7, 2018.
13. The pivotal role played by the residential real estate sector to financial stability is analysed in greater detail in Box 5, "House price developments in Portugal and implications for financial stability", *Financial Stability Report*, December 2017.
14. Although to a lesser extent, in some countries, authorities have increased the risk weights on credit collateralised by real estate, such as Belgium and Finland. In the case of Finland, borrower-based measures have been combined with capital-based measures to address the risks stemming from the residential real estate sector.
15. These idiosyncrasies in borrower-based measures are analysed in greater detail in Box 1, "Implementation, at European level, of macroprudential tools targeting credit standards for loans to households", *Financial Stability Report*, June 2018.

while limits on the LTV ratio impact on the loss given default of borrowers, thereby influencing the two key parameters in determining expected losses for institutions.

Furthermore, as underlined by O'Brien and Ryan (2017), imposing limits on the LTV ratio may prevent some of the pro-cyclicality associated with exuberant developments in the real estate market, but they are not strictly countercyclical, particularly when house prices grow in a sustained manner. In this case, as the value of the property pledged as collateral increases, the households' borrowing capacity expands, given that the amount of credit available through the LTV ratio increases in proportion to the rise in house prices. Given the inherent pro-cyclicality of the limits on the LTV ratio in situations of sustained house price growth, these limits may be combined with the application of constraints on ratios that make the amount of credit depend on the level of income of the borrower, such as limits on the DSTI/LTI ratios. As income tends to grow less and more gradually than house prices, it acts as a limit to households' borrowing capacity. Another example relates to the combination of limits on the DTI ratio – which restrict the borrowers' indebtedness relative to their income – and on the DSTI ratio, as the former improves the solvency of borrowers and the latter mostly enhances its liquidity. Limits on the DSTI ratio may also impact on borrowers' solvency if, by definition, they include foreseeable circumstances with a negative impact on the borrowers' borrowing capacity and/or their ability to meet the commitments under the credit agreement, such as an income and/or interest rate shock, in the case of floating or mixed interest rate agreements. Finally, the adoption of limits on the maturity of loans and the requirement for regular repayment of principal and interest in addition to the definition of limits on the DSTI ratio reduces the ability of circumventing the latter by extending loan maturity, thus enhancing their effectiveness.

In addition to complementarities, the synergies between these instruments may also be tapped by authorities, and thus maximise their effectiveness. This is the case, for example, of the joint definition of limits on maturity and of loan repayment requirements, when the authorities' aim is for the effects of imposing limits on other credit standards to be transmitted to the stock of credit more rapidly.

Obviously, in practice, choosing a certain combination of instruments is underpinned by operational considerations, as well as country-specific circumstances.[16] However, complementarities and synergies seem to be more apparent between borrower-based instruments than between capital-based instruments. Overall, capital-based instruments strengthen the resilience of credit institutions, and their impact is more conditional on how institutions decide to comply with the additional capital requirements rather than on the capital-based instrument used. Therefore, unlike the instruments targeting credit standards, capital buffers may be regarded more as substitutes and less as complementary instruments, when the goal is to strengthen the resilience of credit institutions.

Given that the regulatory framework of capital instruments clearly states a link between risk, policy objective and instrument, which will be made even clearer in the context of the review of the European regulatory framework,[17] the substitutability between capital-based instruments may be more likely across sectoral capital buffers applied to the same sector (e.g. the imposition of higher risk-weights to certain exposures vs. the sectoral systemic risk buffer). These instruments may

16. Such as the home-ownership rate, the share of population that uses bank loans to buy their own homes, the characteristics of borrowers, the level of developments of the rental market, inter alia. Kelly et al. (2019) provide a description of the residential real estate market in a number of European countries, where such differences stand out.

17. On this topic, see the Special issue "Amendment of the CRD IV-CRR: what is new?", *Financial Stability Report* , December2018.

be seen as substitutes in the mitigation of risks related to the real estate market, given that both allow applying more stringent requirements to exposures collateralised by real estate. In turn, broad-based capital requirements may, in certain circumstances, be supplemented by sectoral instruments, so as to minimise potential undesirable effects of the former associated with the possible portfolio shift towards assets with lower risk weights.

3.2.3 Role played by the phase of the financial cycle in the adoption of certain instruments

The policy response should take into account not only the nature of identified risks, but also the timing of intervention and the position in the financial cycle, which are key factors when choosing an instrument or the combination of instruments to be activated. Taking into consideration the phase of the financial cycle is particularly relevant because risks associated with the residential real estate sector may have implications for financial stability and, as such, house price dynamics and developments in the residential real estate market should be analysed, particularly the magnitude of their interlinkages with the financial cycle.[18] Typically, risks build up during the expansionary phase of the financial cycle, characterised by the growth of credit to the economy and an increase in asset prices. During those periods, there is a tendency to underestimate risk and to overvalue the assets pledged as collateral.

Therefore, macroprudential policy should act early on in the expansionary phase of the financial cycle, when there are already signs that risks and vulnerabilities may build up, but the risk of materialisation is still low. Measures that directly target credit flows are likely to be the most effective during this phase of the cycle. This is the case of borrower-based instruments, which may, ultimately, be activated in a non-binding way in very early on in the expansion of the financial cycle, in order to anchor credit standards at appropriate levels and prevent their deterioration, while seeking to restrict credit to borrowers with a high-risk profile. The study by Basto et al. (2019), which gauges the impact of introducing limits on the average LTV ratio based on a model for a small euro area open economy, indicates that different designs of measures targeting the LTV ratio may have different implications for credit dynamics. Simulation results suggest that a permanent, gradual implementation of this instrument would lead to a less pronounced reduction in credit to the private non-financial sector in the short run, while, in the long run, it provides benefits similar to those that would have been obtained with a more prompt implementation of the measures. Furthermore, measures targeting credit standards may play a fairly significant role in dampening the risks associated with a self-sustaining spiral of credit and house prices (Crowe et al., 2011; Lim et al., 2011), although the literature is not fully consensual on this matter (Cerutti et al., 2017).

Such preventive, forward-looking action, where adequate and sufficient, has the benefit of curbing the need for measures in the mature expansionary phase of the financial cycle, when risks will have already built up, which would require a different response by the macroprudential authority. Naturally, risks should be weighted according to their specifics, in such a way that selected instruments are the most appropriate. However, it is important to stress that the effectiveness of macroprudential measures will also depend on the potential incentive for institutions subject to macroprudential action to circumvent them. Against a background in which the financial cycle is at an expansionary phase, if

18. When discussing whether macroprudential policymakers should act directly on house prices when there is evidence that they are overvalued, there is a greater degree of consensus to support macroprudential policy measures only where the financial cycle is interlinked to house price dynamics, i.e. when the increase in house prices is boosted by lending activity. Otherwise, arguably other policy areas, such as the tax policy, may act on this matter.

there is evidence that risks are still growing and will tend to be exacerbated in the short to medium term, the macroprudential authority may consider a more stringent application of the borrower-based instruments if it deems that their calibration is inappropriate with the levels deemed adequate. Furthermore, the macroprudential authority may consider changing the legal form of the measure, to make limits on credit standards binding. However, even when macroprudential measures are implemented in the form of a recommendation, authorities may also enhance its enforcement, by encouraging better governance practices in the targeted credit institutions, for instance, by actively involving risk assessment bodies and board members in the monitoring of compliance with the measures. Furthermore, the ongoing monitoring of compliance with the measure by authorities, as well as the communication of results to institutions are also factors that enhance their effectiveness.

Empirical evidence suggests that the effectiveness of the combination of borrower-based instruments varies throughout the phases of the financial and the residential real estate sector cycles. Kelly et al. (2018) indicate that introducing more stringent limits on the LTV and LTI ratios early on in the expansionary phase of the financial cycle could have materially enhanced the system's resilience and reduced the losses of households, banks and taxpayers in Ireland. Furthermore, they conclude that the combined effect of restrictions to these instruments on house prices is conditional on the level set for each instrument and on the timing of implementation. Neagu et al. (2015) describe the Romanian experience in the design, implementation and calibration of two measures, more specifically, the definition of limits on the LTV and DSTI ratios, and, in particular, investigate their effectiveness in achieving the macroprudential policy intermediate objective of mitigating excessive credit growth and leverage. The analysis concludes that these instruments are relatively effective in mitigating high credit growth and more so than monetary or microprudential policy instruments. In particular, results show that there is a link between the level of the LTV ratio and debt servicing capacity: the higher the LTV ratio, the higher the NPL ratio, which stresses the importance of combining limits on the DSTI and LTV ratios to improve the borrowers' capacity to repay credit.[19] However, as regards the containing effect on house prices, the Romanian experience points to a very limited effectiveness of these instruments.[20]

When the financial cycle is at a more mature stage of expansion, which is characterised by the build-up of risks in the balance sheets of institutions and debtors and by the higher probability of materialisation of these risks in the short term, then the macroprudential policy priority should be to strengthen institutions' resilience, so that they are able to absorb any shocks without causing severe damage to the adequate credit flow to the economy. In this respect, it would be more suitable to activate capital-based instruments. Under circumstances where growth momentum in credit and house prices is robust, a wider-ranging intervention may be warranted, whereby capital-based measures are supplemented by borrower-based measures selected and calibrated with the purpose of limiting risks related to credit and house price spirals. If borrower-based measures have already been implemented early on in the expansionary phase of the financial cycle, then these may be supplemented by capital-based instruments at a more mature expansionary phase of the cycle. The combination of capital and borrower-based measures is uncommon at European level. Most notable in this field are the measures implemented in Finland to address both cyclical systemic risk

19. There is no consensus in literature as regards the ability of limits on the LTV ratio in contributing to a reduction in the probability of default. Unlike Romania, in France and the Netherlands, for instance, empirical evidence shows that this effect is limited: in the case of France, the link between LTV ratios and the probability of default is weak (Dietsch and Welter-Nicol, 2014), similarly to the Netherlands, although approximately 30% of housing credit defaulted in 2013 and 2014 (DNB, 2015).

20. The results as regards the impact on house prices are unsurprising to the authors, given that financing real estate asset transactions depended little on recourse to bank credit during the expansionary phase of the cycle, during the sample period.

stemming from residential real estate market developments and structural systemic risk stemming from high household indebtedness, in which, at first, borrower-based instruments were activated (limits on the LTV ratio) and, later on, a floor was set for the risk weight associated with exposures collateralised by real estate.

In the last few years, several authorities have activated the countercyclical capital buffer, and the vast majority had already previously implemented borrower-based instruments.[21] Although the most commonly used benchmark indicator to activate this buffer is the credit-to-GDP gap (also known as the Basel gap), the methodological approach adopted by each authority assigns different weights to this indicator and involves additional indicators, including information on developments in the residential real estate sector. In fact, the ESRB (2017) suggests that in, the EU, there is a link between countercyclical capital buffer levels and indicators that attempt to capture overvaluation in residential real estate market prices, credit growth and the soundness of institutions' balance sheets. Such circumstances may justify the order followed in the activation of the different types of instrument – first, borrower-based measures, then countercyclical capital-based measures – which may be related to the fact that authorities often take into account, in their assessment of cyclical systemic risk, the timing of the intervention and the phase of the financial cycle. The literature does not yet provide an assessment of the reasons underlying this trend in macroprudential action. This may be due to the complementarities and synergies that may exist between the two types of instrument – both impact on cyclical systemic risk mitigation, but follow mutually reinforcing transmission channels, as discussed above.[22]

The study by Benes et al. (2016), which analyses the interaction between the countercyclical capital buffer and the LTV ratio over the financial cycle using simulations based on a macroeconomic model, is one of the few exceptions that focus on the interaction between these macroprudential instruments. The authors conclude that the individual application of the countercyclical capital buffer may be effective in reducing credit growth during an expansionary phase and in mitigating the contraction in credit flows that typically occurs during the recession phase. However, simulation results suggest that the countercyclical capital buffer is not sufficient to limit interlinkages between the financial cycle and the house price dynamics, given that it does not specifically limit the credit to the residential real estate sector, but instead affects all sectors.[23] Therefore, simulation results show that systemic risk originating from the residential real estate sector continues to expand on the back of lower intermediation in other sectors of the economy. This confirms the empirical evidence that the countercyclical capital buffer seems insufficient to reduce the effects of crises associated with residential real estate sector bubbles (IMF, 2014a and 2014b).

The decision to activate countercyclical capital-based measures after borrower-based measures may also arise from some evidence that the latter may not be entirely sufficient to mitigate a build-up in risk associated with excessive credit growth to the private non-financial sector, when the financial cycle enters into a firm expansionary phase. In this, we may consider several reasons for a measure to be appropriate, but insufficient to achieve the policy objectives. For instance, knowledge about the

21. For more details on the European experience with the activation of countercyclical capital buffers, see Box 3, entitled "Implementation of countercyclical buffers in the European Union", *Financial Stability Report*, December 2018.

22. There may also be complementarities between cyclical and structural capital-based instruments in promoting institutions' resilience. However, complementarities among these instruments are more likely during the expansionary phase of the financial cycle, rather than its downturn phase, where it is very likely that the level of cyclical instruments should be reduced.

23. The countercyclical capital buffer may even boost house credit growth, as this credit segment has lower risk weights than credit to non-financial corporations.

effects of the design and operationalisation of macroprudential measures is still at an early stage, and there is a high degree of uncertainty as to the magnitude of the effects (whether desired or undesired) of such measures. Empirical evidence on the impact of macroprudential measures is still limited and may therefore warrant a more careful consideration of the design and calibration of instruments, in order to avoid an overly disruptive effect on the financial sector. Furthermore, there is no one-size-fits-all design for each type of instrument that serves the purpose of all macroprudential authorities: each country has its own specificities, which should be considered when selecting and implementing measures. As such, a wide range of factors may be associated with the notion of insufficient measures. In fact, some authorities have adopted measures increasingly more stringent than those originally adopted – particularly borrower-based measures – on the basis of the outcome of the ex-post assessment of their effects.

The analysis of the implications from the interaction between macroprudential instruments hitherto discussed focuses on the activation experience or on increasing the stringency of the instruments, given the upward phase of the financial cycle observed in most EU countries. However, the interaction between macroprudential instruments may also have implications for their reduction or deactivation, which are associated with the downward phase of the financial cycle or periods of financial distress. Still, most authorities have not yet taken decisions to reduce or deactivate previously implemented macroprudential instruments, given that they have not yet faced a downward phase of the financial cycle, after the implementation of measures.[24] The lack of experience in deactivating macroprudential measures explains why literature on this matter is still limited. The study by the Basel Committee on Banking Supervision (2018) is an exception and discusses the effectiveness of macroprudential action during financial cycle downturns, arguing that it can be improved by combining macroprudential instruments. In particular, it suggests that easing borrower-based instruments, or even fully removing them, may not be effective in supporting credit supply in the event of loss.[25] Consequently, it is recommended that these instruments be supplemented by capital-based instruments targeting specific risk sectors, given that the latter have proven more effective in safeguarding the financial intermediation function of institutions during financial crises.

4 Conclusão

The considerations on the interaction between macroprudential instruments discussed in this Special issue, though supported by some empirical evidence, are mostly based on a conceptual framework of how macroprudential policy is expected to operate. In this respect, the lack of experience in the use of macroprudential instruments is particularly notable, as is the uncertainty that surrounds expectations about their effects. The literature on the interaction and, particularly, on the combination of macroprudential instruments, is still limited, although it is rapidly expanding. Macroprudential policy is characterised by a strong interaction between its instruments, given that transmission mechanisms often overlap. This interaction poses several challenges to macroprudential policy action, but it may also be used to its advantage, namely to

24. There is an exception: the Bank of England has cut the countercyclical capital buffer rate from 0.5% to 0% due to the impact on financial markets of the outcome of the UK's referendum on its membership of the European Union (Brexit).

25. Most macroprudential authorities consider that borrower-based measures are structural, aimed at keeping credit standards at adequate levels throughout the financial cycle. As such, they do not consider their deactivation as in the study by the Basel Committee on Banking Supervision (2018), but they do acknowledge the potential need to adjust the instruments' stringency.

strengthen the efficiency and effectiveness of any measures adopted. At least, this is what the European experience has shown on this matter, highlighting some tendency to combine different macroprudential instruments, with the aim of strengthening financial stability.

This article points to and discusses three reasons that may justify macroprudential authorities' willingness to combine instruments targeting credit standards. First, this trend may be related to the source of systemic risk most commonly identified by macroprudential authorities, which is associated with developments in the residential real estate market, which may have negative implications for financial stability. Furthermore, the existence of complementarities and synergies may be more evident within this type of instrument and less so for other types, such as capital-based instruments. The discussion highlights that borrower-based instruments seem to be more likely to complement one another than capital-based measures, which, by nature, tend to replace one another as regards increased resilience of the financial system. Lastly, the combination of borrower-based instruments, followed by the adoption of countercyclical capital-based instruments, seems to be related to the phase of the financial cycle and, particularly, to its relation with real estate market developments. In periods where the financial cycle enters an expansionary phase, it seems to be more appropriate to adopt measures that impact on credit flows, such as borrower-based measures. At subsequent stages, when there are signs that the financial cycle is in a more mature expansionary phase, activating cyclical capital-based measures may be the most appropriate policy response, with a view to reinforcing the banking system's resilience against potential shocks and lessening their impact on the economy.

Overlapping transmission mechanisms pose additional challenges to the ex-post assessment of the impact of these instruments, given that it becomes harder to isolate the individual effects of each instrument on the promotion of financial stability. These challenges encourage the development of methodological approaches that make it possible for policymakers to sort out these effects. Furthermore, the interaction between macroprudential policy and other policy areas, such as monetary and microprudential policies, may also lead to strains on each policy's effectiveness in achieving its goals and, as such, the macroprudential policy decision-making process should provide ample room for the assessment of potential conflicts with other policy areas (and vice-versa). Assessing the macroprudential policy's ability to mitigate systemic risk and thus contributing to financial stability will only be possible when a full financial cycle has been completed.

5 References

European Central Bank (2018), *Economic Bulletin*, Issue 7, 2018.

Banco de Portugal (2018), *Financial Stability Report*, December.

Banco de Portugal (2018), *Financial Stability Report*, June.

Banco de Portugal (2017), *Financial Stability Report*, December.

Basel Committee on Banking Supervision (2018), *Towards a sectoral application of the countercyclical capital buffer: a literature review*, Bank for International Settlements, March.

Benes, J., Laxton, D., and J. Mongardini (2016), *Mitigating the Deadly Embrace in Financial Cycles: Countercyclical Buffers and Loan-to-Value Limits*, IMF, WP No 16/87.

Committee on the Global Financial System (2010), *Macroprudential instruments and frameworks: a stocktaking of issues and experiences*, CGFS Papers No 38, May.

Committee on the Global Financial System (2012), *Operationalizing the selection and application of macro-prudential instruments*, CGFS papers No 48, December.

European Commission (2009), Report of the High-level group on financial supervision in the EU chaired by Jacques de Larosière, February.

Cerutti, E., S. Claessens, and L. Laeven (2017), "The use and effectiveness of macroprudential policies: New evidence", *Journal of Financial Stability*, 28(C):203–224.ESRB (2017), *A review of macroprudential policy in the EU in 2016*, April.

ESRB (2018), *A review of macroprudential policy in the EU in 2017*, April.

ESRB (2019), *A review of macroprudential policy in the EU in 2018*, April.

Crowe, C., G. Dell'Ariccia, D. Igan, and P. Rabanal (2011), "Policies for macrofinancial stability: options to deal with real estate booms", IMF, *Staff Discussion Note* SDN/11/02.

Dietsch, M., and Welter-Nicol, C. (2014), "Do LTV and DSTI caps make banks more resilient?", *ACPR Débats Économiques et Financiers* No 13.

DNB (2015), "Dutch mortgages in the DNB loan level data", *De Nederlandsche Bank Occasional Studies*, Vols. 13/14 Appendix 3.

Fahr, S., and Fell, J. (2017), "Macroprudential policy – closing the financial stability gap", *Journal of Financial Regulation*, Vol. 25, No 4.

Basto, R. Gomes, S., and Lima, D. (2019), "Exploring the implications of different loan-to-value macroprudential policy designs", *Journal of Policy Modeling*, 41, 66-83.

International Monetary Fund (2014a), *Staff Guidance Note on Macroprudential Policy*, December.

International Monetary Fund (2014b), *Staff Guidance Note on Macroprudential Policy – detailed guidance on instruments*, December.

Kelly, R., McCann, F., and C. O'Toole (2018), "Credit conditions, macroprudential policy and house prices", *Journal of Housing Economics*, 41(C), pp. 153-167.

Kelly, J., Le Blanc, J., and Lydon, R. (2019), "Pockets of risk in European housing markets: then and now", European Systemic Risk Board, *Working Paper Series*, No 87, February.

Leal, A. C., and Lima, D. (2018), "Macroprudential policy in Portugal: experience with borrower-based instruments", Banco de España, *Financial Stability Review*, No 35.

Lim, C., F. Columba, A. Costa, P. Kongsamut, and A. Otani (2011), "Macroprudential policy: What instruments and how to use them? Lessons from country experiences", IMF, *Working Paper* WP/11/238.

Neagu F., Tatarici L., and Mihai I. (2015), "Implementing Loan-To-Value and Debt Service-To-Income Measures: A Decade of Romanian Experience", National Bank of Romania, *Occasional Papers*, No 15.

O'Brien, E., and E. Ryan (2017), "Motivating the Use of Different Macroprudential Instruments: the Countercyclical Capital Buffer vs. Borrower-Based Measures", Central Bank of Ireland, *Economic Letter Series*, Vol. 2017, No 15.