Financial Stability Report

June 2017

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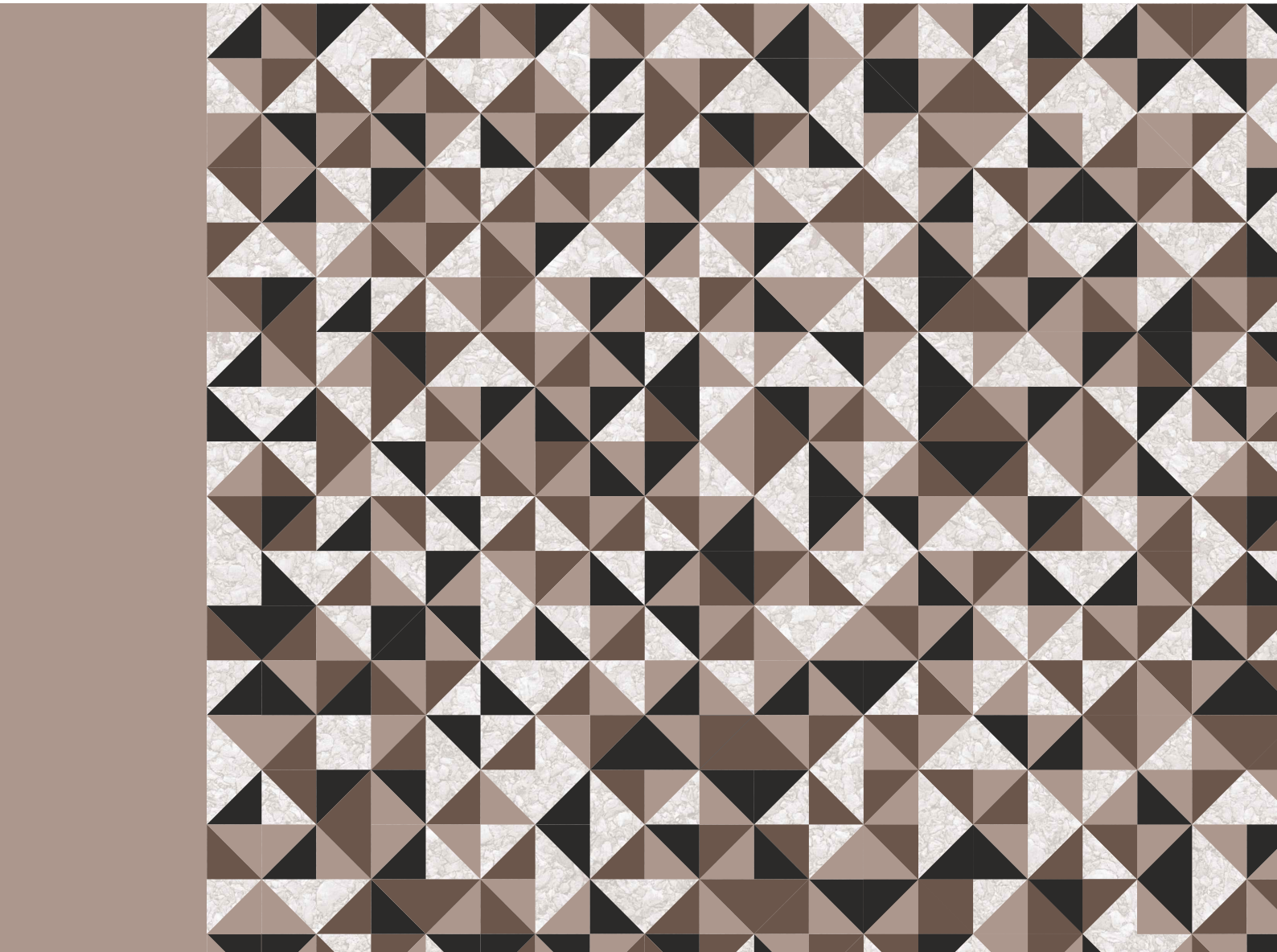

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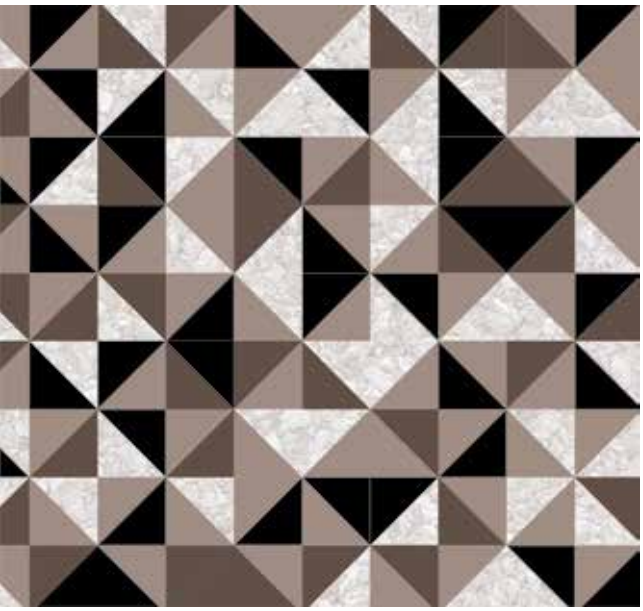


I
Financial stability: Vulnerabilities and risks

Summary

Despite some progress, the Portuguese economy and, particularly, its financial system continue to show a number of vulnerabilities that may contribute to the materialisation of risks to financial stability, as well as to the amplification of their impact. This issue of the *Financial Stability Report* continues to highlight the high domestic public and private sector indebtedness, combined with low potential growth, the significant stock of non-productive assets on credit institutions' balance sheets, the sensitivity of the banks' credit portfolio to changes in benchmark interbank interest rates, and also the significant concentration of exposures of the banking and insurance sectors to Portuguese public debt securities and the real estate sector.

The nature of risks to financial stability has remained virtually unchanged from the previous issue. However, in the second half of 2016 the Portuguese sovereign risk premia continued to increase, driven by less favourable market sentiment towards the fiscal situation, economic growth and the banking sector in Portugal, in a framework of political and economic uncertainty in Europe and the US. In spite of the improvement seen over the course of 2017, there is still a significant possibility of a further reassessment of risk premia, in the context of a deterioration of international investors' perception of the domestic situation and/or of higher volatility in international financial markets with a greater impact on more vulnerable economies.

Expectations of a protracted low short-term interest rate environment remain, with the consequent pressure on financial sector profitability and possible incentives to excessive risk-taking. In fact, according to market expectations, the rise in short-term interest rates will tend to occur over a long time horizon. In a scenario of short-term interest rate increase, the quality of financial institutions' credit portfolios may be negatively affected, particularly if the economic recovery in Portugal does not move in line with euro area developments.

In the banking sector some fragmentation may persist in the access to the international financial markets, particularly when some uncertainty remains as to banks' asset quality. The transition to a new regulatory framework poses further challenges for the institutions, and the strategies they may adopt for complying with the new requirements could affect financing to the economy.

Against this background, incentives might exist to the placement on the retail markets of financial instruments whose characteristics are not adequately perceived by customers or are not suited to their needs, but allow the financial institutions to recover profitability and transfer risks from their balance sheets. Hence, institutions may incur conduct risks that, if they materialise, may also translate into reputational risks.

The recovery of economic activity, the recent dynamics observed in the real estate market and greater competition among banks may create incentives to ease credit standards.

In spite of the improved outlook for Portuguese economic growth between 2017 and 2019, supported by a more favourable external environment, there are still political and economic downward risks globally.

1. Vulnerabilities

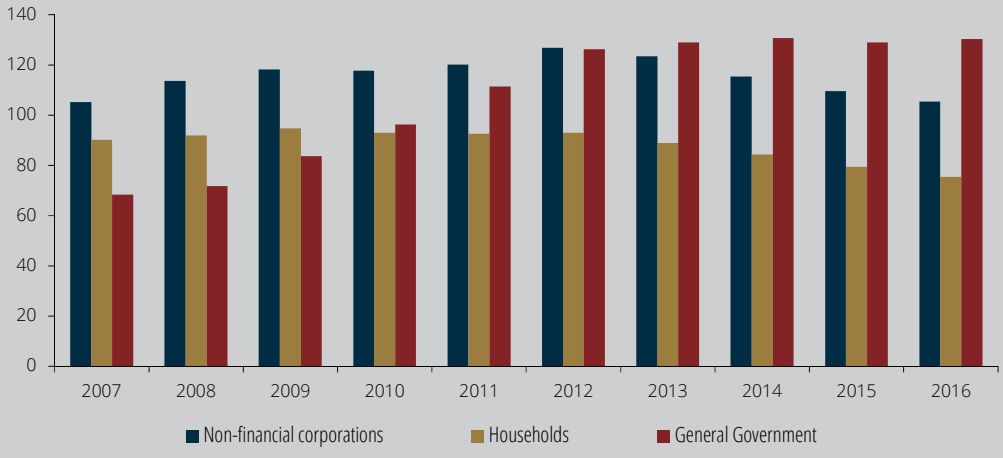
The high indebtedness of the public and private sectors, combined with low potential growth, is a vulnerability of the Portuguese economy with a latent impact on financial stability

In spite of the improvement seen in Portugal in the most recent period, economic growth has been insufficient to ensure real convergence with the euro area. Potential growth remains constrained by a number of structural vulnerabilities, including the high indebtedness of the public and non-financial private sectors (Chart 1).

In fact, although non-financial private sector indebtedness has declined considerably since 2012 and non-financial corporations' (NFC) capital ratio has improved, indebtedness remains high within the euro area, as detailed in 'II. Financing of the economy'. In addition to the impact that high indebtedness levels have on economic growth, considering that a significant share of household debt has an variable interest rate and that in the case of NFCs, a considerable share of the loans have a maturity lower than one year, the non-financial private sector's debt service capacity is particularly sensitive to changes in benchmark interbank interest rates. In the context of an increase in these interest rates, the quality of financial institutions' credit portfolios may be negatively affected, particularly if economic recovery in Portugal does not move in line with euro area developments. Under these circumstances, household income and corporate profitability will tend to be hurt, with negative consequences for their capacity to service debt.

The high general government indebtedness is also a significant vulnerability of the Portuguese economy, with a potential direct impact on the financial system, reinforced, inter alia, by its significant direct exposure to the domestic sovereign. In addition, this vulnerability has negative consequences for the financing conditions of general government and the other domestic economic agents. Hence, it is instrumental that the fiscal consolidation path leading to the sustained reduction of public debt continues, contributing to improve the market sentiment with regard to domestic issuers. The pursuit of policies that stimulate competitiveness and potential economic growth will also promote debt sustainability.

Chart 1 • Public sector and non-financial private sector indebtedness | As a percentage of GDP



Source: Banco de Portugal.
Note: Public debt calculated according to the definition used in the excessive deficit procedure (Council Regulation (EC) No 479/2009 of 25 May 2009), i.e. general government consolidated gross debt at nominal or face value, the so-called Maastricht debt.

In spite of the adjustment observed and some recent positive developments, credit institutions still show some weaknesses that may limit their adjustment to the new regulatory and operational context

Under the Economic and Financial Assistance Programme (EFAP), the Portuguese banking sector started an adjustment consistent with the non-financial private sector's macroeconomic imbalance correction process. Banks conducted an orderly deleveraging of their balance sheets, also supported by a contraction in credit demand. This adjustment was reflected on the financing structure of banking institutions – there was a considerable increase in customer deposits, contributing to a decline in the loan-to-deposit ratio to below 100% – and on a significant strengthening of solvency levels. Simultaneously, various institutions have implemented restructuring plans, aiming to increase operational efficiency and adjust their business models, which translated into a decline in the number of branches and employees and the release of capital allocated to non-core activities. A more detailed analysis of the banking sector can be found in 'III. Banking sector'.

However, the banking sector still has a number of vulnerabilities that require the furthering of the adjustment process. High NPL levels, by generating considerably lower income than agreed in the original terms of the contract, or even nil, are an obstacle to the recovery of profitability to levels compatible with internal capital generation and the adequate return for shareholders. As regards solvency, the high credit risk associated with these exposures may imply higher risk weights, thus consuming more capital. In addition, the risk associated with these assets is also taken into consideration in the calculation of prudential capital requirements, within the scope of the Supervisory Review and Evaluation Process (SREP). Finally, the delay in the recovery process of credits and/or companies entails additional costs related to the management of those assets and is a significant obstacle to an efficient reallocation of resources both by banks and economically viable companies.

In a context of high NPL, low profitability levels and stricter regulatory requirements, the uncertainty assigned by market agents to banks' asset quality and the adequacy of coverage levels tends to condition, in terms of price and/or quantity, their access to market funding, debt or capital. In this context, important measures have been taken, which will be reinforced in the setting of the plans to reduce NPL, in line with the "Guidance to banks on non-performing loans published by the ECB"[1] (Box 3 "Banking supervision under the comprehensive strategy to address the high stock of NPLs").

Portuguese banks continue to be exposed to developments in benchmark interbank interest rates, insofar as their credit portfolios continue to have a significant share of loans granted with variable interest rates and at long maturities. Hence, the current environment of very low interest rates, in a context of extremely accommodative monetary conditions in the euro area, continues to exert pressure on net interest income, hindering banking sector profitability. In previous years, the impact via net interest income was offset by the adjustment of interest rates on liabilities.[2] However, this effect played a less important role in 2016, thus contributing to a relative stabilisation in net interest income. New lending operations are not yet – and are not expected to be in the near future – sufficiently high to allow for a recovery of profitability via an increase in turnover. In addition, the available evidence points to a compression of spreads in lending operations, both for households and low- or medium-risk firms, with competition among institutions indicated as one of the drivers.[3]

Banks operating in the domestic market continue to be significantly exposed to the real estate sector, especially via housing loans, but also via loans to construction and real estate activities, real estate received in lieu of payment, and shares/units in real estate investment fund (and funds of funds) and corporate restructuring funds. In spite of the reduction in the total amount

of these exposures by about 1.7%, in 2016 the significant reduction in the banking sector's assets lead to an increase in their weight (Chart 2).

The banking sector continues to be significantly exposed, directly and indirectly, to some commodity-driven emerging market economies, in particular those with a strong dependence on oil. Although Portuguese exporting companies have shown the ability to diversify their business to external markets, the adverse economic conditions in some of these economies have contributed to a deterioration of overdue credit ratios of companies that are more exposed to these markets. The materialisation of downward risks on these economies' growth projections may continue to affect banks in Portugal, namely through a further deterioration of the quality of credit granted directly to those economies or to NFCs with strong commercial ties to those countries.

At the domestic level, a strong link between the financial system and the sovereign still persists (Chart 3). On the one hand, profitability and/or solvency of the banking, insurance, pension fund and investment fund sectors continues to be considerably exposed to changes in the yields of Portuguese public debt securities.[4] On the other hand, the sovereign risk premium also reflects the financial system's vulnerabilities, with an impact on the market access conditions for domestic issuers. In the case of the banking sector, greater constraints in the capital market access could create a particularly challenging environment for the issuance of the financial

Chart 2 • Banking sector's exposure to the real estate sector | As a percentage of total assets

Source: Banco de Portugal.

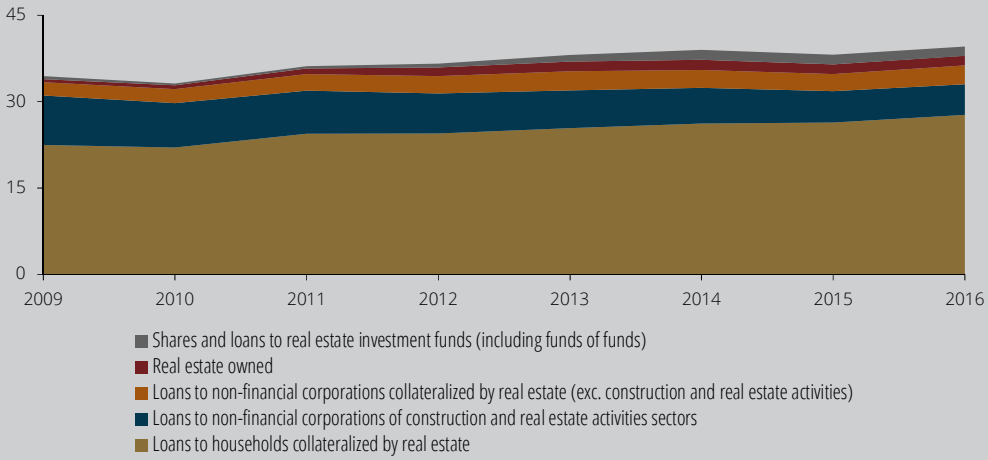
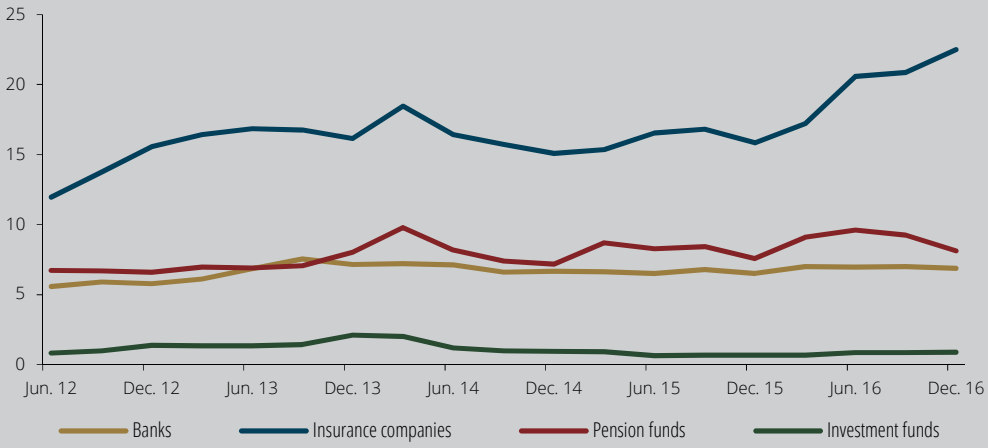


Chart 3 • Financial sector exposure to domestic public debt securities | As a percentage of total assets

Sources: Autoridade de Supervisão de Seguros e Fundos de Pensões, Comissão de Mercado de Valores Mobiliários and Banco de Portugal.



instruments necessary to comply with the new regulatory requirements.

In parallel with the weaknesses affecting the banking sector as a whole, a significant heterogeneity persists among institutions, particularly as regards the adjustment of their cost structures and the magnitude of their exposures to NPLs. In the latter case, the recent positive developments, such as the recapitalisation of Caixa Geral de Depósitos and the contract signed envisaging the sale of Novo Banco, increased these institutions' ability to implement solutions for the high stock of NPLs, creating incentives for other institutions equally exposed to such assets to move in the same direction. Moreover, the entry of a new shareholder and the subsequent capital increase in Banco Comercial Português and in Banco BPI, the reduction of exposure to Banco de Fomento Angola and the acquisition of control by Caixabank reinforced these institutions' solvency and shareholder base. In addition, the uncertainty associated with the terms of the loans granted to the Resolution Fund was reduced.[5]

2. Risks to financial stability

The risk from risk premium reassessment, particularly of the domestic sovereign, has been evident in a context of monetary policy normalisation expectations in the US and increased geopolitical risks

In 2016 the reassessment of risk premia materialised gradually in euro area countries. This reassessment was stronger in countries more affected by the sovereign debt crisis, especially those that show high indebtedness levels in the public and non-financial private sectors, vulnerable financial sectors and lower potential economic growth. In particular, the spread between Portuguese and German 10-year sovereign bond yields increased over the course of 2016, with spreads versus Spain and Italy also widening (Chart 4).

The reassessment of risk premia occurred amid improved growth prospects in advanced economies and a progressive normalisation of monetary policy in the US. This, which resulted in a global capital reallocation, led to an increase in longer-term interest rates in the euro area, although expectations for official interest rates remained unchanged. There is evidence that points to a positive relationship between US and euro area sovereign yields.[6]

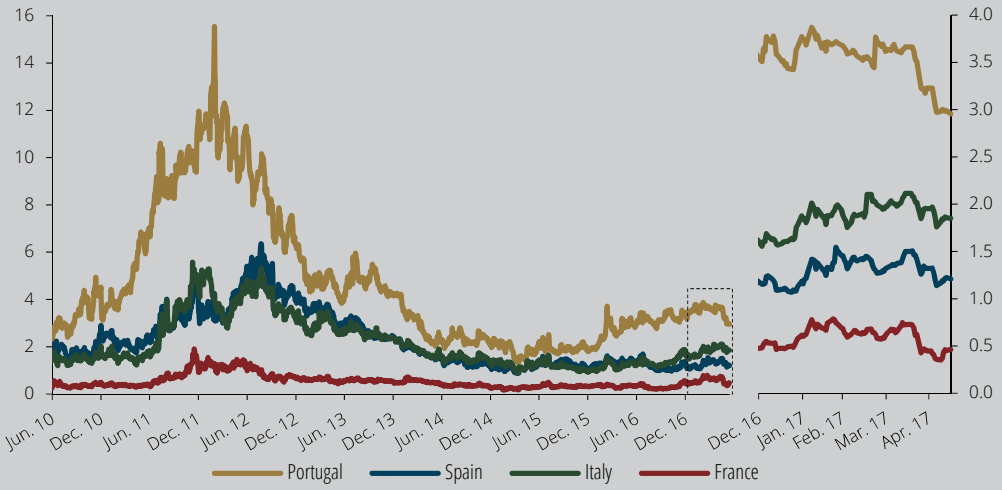


Chart 4 • 10-year sovereign bond yields – spreads versus Germany | In percentage points

Source: Reuters.
Notes: Daily data. Last update on 15 May 2017.

However, over the course of the second quarter of 2017, 10-year sovereign yield spreads between Portugal and Germany have narrowed considerably. This appears to reflect a more favourable market sentiment towards the fiscal situation, economic growth and the banking sector in Portugal. In spite of the improvement, the possibility of a further reassessment of risk premia remains significant. This may stem from a deterioration of international investors' perception of the domestic situation and/or of the higher volatility of international financial markets with a greater impact on more vulnerable economies. In addition, expectations of future normalisation of the ECB's monetary policy will also exert further pressure on euro area countries' sovereign bond yields. The rise in interest rates in the secondary market will also tend to be reflected in a worsening of these economies' financing conditions.

The steeper slope of the euro area yield curve, if persistent, it will favour a recovery of financial institutions' profitability, via maturity transformation (albeit differently across the various banking systems in the euro area). However, given the considerable exposure of financial institutions to public debt securities (Chart 3), the rise in longer-maturity yields may have a negative impact on their solvency.

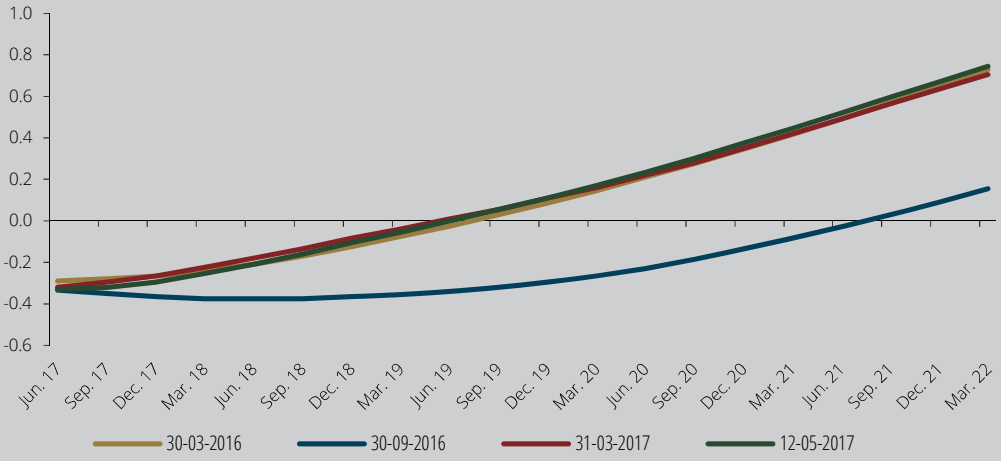
The materialisation of political events that may jeopardise the European Union's political and economic cohesion could result in an abrupt reassessment of risk premia, in particular of more vulnerable Member States. Likewise, some uncertainty remains as to the content of a number of economic policies to be implemented in the US, particularly relating to the financial sector regulation and international trade. However, expansionary fiscal measures have already been announced. In turn, Portugal, a small economy whose degree of openness has been increasing, could be particularly penalised by developments that negatively affect international trade.

The protracted low interest rate environment reflects the prospects of maintenance of the current euro area monetary policy

The latest projections for economic growth in the euro area present upward revisions. In a context of still moderate prospects for inflation rate developments, the ECB signalled that monetary policy is expected to remain accommodative for an extended period. Against this background, market expectations point to a very gradual and limited increase in short-term market interest rates in the euro area, with the three-month Euribor expected to assume positive values only from the mid-2019 onwards (Chart 5).

Chart 5 • Interest rate implicit in three-month Euribor futures contracts | Per cent

Source: Reuters.
Notes: Daily data. Last update on 15 May 2017.



The protracted low interest rate environment will continue to limit the recovery of the financial system's profitability, constraining the capacity to generate capital internally. This environment may also create incentives to take excessive risks through search-for-yield behaviours, particularly through the easing of credit standards.

Banks' access to international financial markets may be hindered by uncertainty about the quality of assets on their balance sheets

Recent developments and the outlook for the Portuguese economy, as well as real estate price developments, create a context that is more conducive to the resolution of the high NPL stock on the banks' balance sheets. While this is very significant, it will not be sufficient to reach the objective stated and, therefore, it is necessary that banks' and authorities' actions are reinforced accordingly. As already mentioned, some of the recent developments associated with systemic credit institutions increased their ability to implement solutions to reduce the high NPL stock. These developments should be complemented, across the whole sector, by an active approach to the NPL stock, so as to ensure adequate risk management and compliance with regulatory requirements. This action should be framed by supervisory measures, as well as by a favourable legal, judicial and tax framework, as referred to in previous issues of the *Financial Stability Report*.

Adjustment to the new regulatory framework poses further challenges to institutions in their financial intermediation function

The most recent global financial crisis revealed a number of weaknesses of the international financial system and the need to revise some regulatory and supervisory practices to prevent the materialisation of risks, notably those of a systemic nature. In this vein, regulatory and supervisory requirements have become progressively more demanding, aiming to increase the resilience of financial institutions and promote financial system stability. However, transition to the full implementation of the new requirements will be particularly challenging given the simultaneity of the various transitional periods envisaged. This challenge will be particularly important for institutions that present greater vulnerabilities. As an illustration, implementation of IFRS 9 as of January 2018, including the transition from an incurred loss model to an expected loss model, will have an impact on recognised impairments and on banks' capital, especially in banks using the standard approach for calculating minimum capital requirements (Special issue 2 "IFRS 9 – Main changes and impacts anticipated for the banking system and financial stability").

In addition, the need to access financial markets to comply with the new regulatory requirements, including minimum requirements for own funds and eligible liabilities (MREL), may have a significant impact on the institutions' funding structure. Given the characteristics of high subordination of these instruments and the fact that several European banks have to issue this type of instrument simultaneously, their issuance will tend to be associated with a relatively high cost, which may penalise the sector's profitability. This risk may be mitigated if banks demonstrate their ability to improve their asset quality, especially through strict compliance with NPL reduction plans, paving the way for a more favourable assessment by investors and consequently reinforcing the improvement of financing conditions in these markets.

However, adaptation to the new regulatory framework may lead to the adoption of adjustment strategies based on deleveraging processes with the purpose of reducing capital requirements and other associated regulatory requirements, potentially affecting the financing of the economy, especially if implemented simultaneously by a significant part of the sector.

Inappropriate conduct in the placement of financial products may jeopardise customer confidence in financial institutions

Conduct risks in the financial sector continue to play a significant role, both in the domestic and European context, given the negative implications for customers, for the reputation and soundness of financial institutions, and ultimately for financial stability. In the current framework of vulnerabilities and challenges faced by the financial system, there may be incentives to the placement of financial products that are inappropriate for the risk profile or needs of customers, but that, for example, allow for profitability recovery or the transfer of risks from financial institutions' balance sheets.

In addition, the need to issue financial instruments to comply with the new regulatory requirements, particularly in a context where access conditions to financial markets are expected to be more unfavourable than for European peers, may encourage their placement with non-institutional investors (i.e. in the retail market).

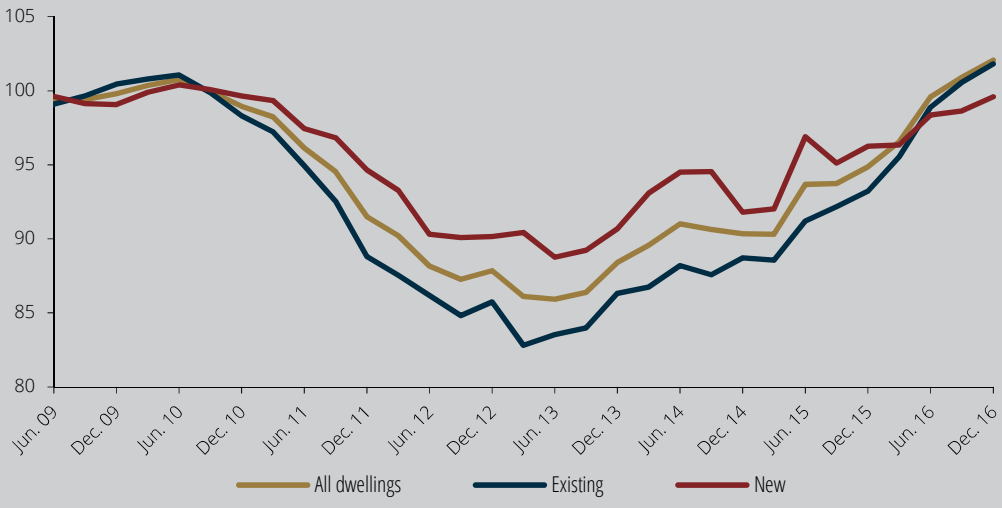
At domestic level, the fact that the banks' distribution network is still the preferred channel used to place financial products in the retail market results in a greater exposure of these institutions to conduct risks and the consequences of their materialisation, notably in terms of reputational risks.

The increase in real estate prices, combined with economic recovery and greater competition among institutions, may create incentives to the easing of credit standards for households and non-financial corporations

In spite of the decrease of the past few years, credit institutions continue to be materially exposed to the real estate sector. Recent developments in real estate prices in Portugal point to a market recovery (Chart 6). There is some evidence supporting that these prices are not above the level justified by the fundamentals.[7] According to the available information on housing loans, a non-negligible share of loans granted in the past few years by Portuguese banks was characterised by high loan-to-value (LTV) or loan-to-income (LTI) ratios and, in some cases, with very long maturities. However, the proportion of loans

Chart 6 • House prices in Portugal | Index (2010=100)

Source: Statistics Portugal.



that jointly have high levels of those indicators was low (Special issue 3 "Banking sector's exposure to housing loans: analysis of LTV and LTI/DSTI and implications for financial stability").

In a context of economic recovery, which was strongly influenced by the contribution of private consumption, the flow of new consumer loans has been increasing since 2012. This increase has been fostered by banks specialising in this type of credit, which in general present overdue credit ratios below the average observed in this segment. In 2016 the dynamics of these loans was largely associated with a rise in car sales, which reflected the renewal of the car fleet, postponed during the crisis period. In spite of some stabilisation in car loans in the second half of the year, the rate of change in total consumer loans at the end of 2016 was significantly higher than recorded at the end of the previous year.

In turn, there was a progressive reallocation of loans granted by resident credit institutions to NFCs with a better risk profile. However, the growing competition of banks in this segment has led to a considerable reduction of spreads applied to firms with a better risk profile.

The current environment of higher economic growth, price increases in the real estate sector and greater competition among institutions may lead to the easing of credit standards. This may, in turn, compromise the financial sustainability of households, NFCs and credit institutions themselves. Should real estate prices evolve to levels not supported by the fundamentals, any correction would lead to the loss of the value of collateral and real estate owned by banks. In addition, in the case of adverse shocks to the debt service capacity of borrowers that result in default, the ensuing losses for the banking sector might have a considerable additional impact on the sector's profitability and solvency.

In spite of the improvement of the outlook for Portuguese economic growth, the current international economic and political framework may lead to the materialisation of downward risks

In 2016 the Portuguese economy grew above expectations, although less than in the previous year (1.4% and 1.6% respectively). In addition, economic growth projections point to a more marked recovery in the 2017-19 period, in line with the growth pace in the euro area. Hence, according to Banco de Portugal's projections for the Portuguese economy (March 2017), gross domestic product is expected to grow by 1.8% in 2017, 1.7% in 2018 and 1.6% in 2019. These projections rely to a large extent on a favourable external environment and a more buoyant gross fixed capital formation. In particular, exports of goods and services are expected to grow strongly, also supported by market share gains, which is one of the most remarkable characteristics of the Portuguese economy's adjustment process and has made an important contribution to the economy's current financing capacity.

However, the deceleration of global economic activity, triggered by a shock in external demand, underlying, for example, a slowdown in China's economic growth or the implementation of protectionist policies by the US, represents a downward risk for these projections. This scenario may also lead to the deterioration of the macroeconomic conditions of a number of emerging market economies, which may reflect on the asset quality on banking institutions' balance sheets, insofar as their business is directly or indirectly exposed to these economies.

3. Macroprudential policy

Taking into consideration the risks identified above, the main priorities of macroprudential policy are (i) the promotion of adequate credit granting practices, avoiding the already high stock of non-productive assets on institutions' balance sheets; (ii) the reinforcement of the soundness of the financial system through measures aimed at strict compliance with plans to reduce the NPL stock; and (iii) the promotion of the orderly adjustment of the financial sector given the higher accounting and regulatory requirements, in a context still characterised by a significant number of vulnerabilities.

The preservation of the soundness of the financial sector also requires that financial institutions continue to adjust their business model and cost structure, given the existing constraints to the generation of earnings amid low interest rates and prospects of subdued credit growth – which are naturally restrained by the economic agents' high indebtedness levels – and in a context of a high stock of non-productive assets, which penalises the banking system's profitability.

The adequate assessment of the risk of new credit flows plays a particularly important role in ensuring the resilience of financial institutions

Given household indebtedness levels, a possible increase in market interest rates, even if gradual, might constrain the debt service capacity. The banking sector's high exposure to the real estate sector renders this risk particularly significant, since housing loans are generally granted at variable interest rates and long maturities. The initial maturity of this type of credit, which declined significantly after the financial crisis, has been increasing over the past few years, which hinders a possible restructuring, in case of payment difficulties of borrowers. As already mentioned, developments in LTV and LTI indicators associated with housing loan agreements since 2014 also seems to show the easing of credit standards, in particular given the context of economic recovery and the increase in real estate prices. Hence, the correct assessment of the risk implied in new credit flows, both as regards borrowers' creditworthiness and the collateral pledged, assumes a particularly important role. The practices for granting other loans to households and companies should be equally thorough. In particular, they should rely chiefly on the borrowers'ability to pay debt, through the adequate projections on expected cash flows, in the case of companies, and not only on collateral value. In sum, institutions should assess borrowers' creditworthiness in a prospective manner, considering the effect of plausible increases in market interest rates and taking into account the borrower's credits as a whole.

The countercyclical capital buffer and the capital conservation buffer are macroprudential policy instruments harmonised in European regulations

Credit to the non-financial private sector continued to record negative rates of change. Hence, Banco de Portugal has decided to maintain the countercyclical capital buffer unchanged at 0% of risk-weighted assets, as the ratio of credit to the non-financial private sector to GDP (indicator used to calculate this measure) continued below its long-term trend. This policy orientation is also sustained by other macroeconomic and financial indicators.[8]

The positive evolution of the solvency of a number of systemically important institutions contributes to the banking system's higher resilience to the identified risks. The regulatory requirements are consistent with this objective, and the capital conservation buffer increased to 1.250% of the total amount of exposures in 2017 (compared to 0.625% in 2016), according to the gradual introduction envisaged in European banking regulation.

With regard to the regulatory and institutional framework of macroprudential policy, it is important to highlight the revision started by the European Commission, so as to incorporate the experience already acquired with the implementation of this policy by several countries, as well as the changes stemming from the establishment of the Banking Union and the Single Supervisory Mechanism (SSM). In this context, Banco de Portugal has made an active contribution to this discussion and answered the public consultation launched by the European Commission last October (Box 1 "Changes to the macroprudential policy framework in the European Union: main priorities from Banco de Portugal's perspective").

It is important to ensure the promotion of an orderly adjustment of the financial sector given the higher accounting and regulatory requirements, encouraging the minimisation of conduct risk

Adoption of IFRS 9 as of 1 January 2018 is expected to translate into a more timely recognition of impairment losses in portfolios subject to credit risk. Given the potential increase in the impairment value to be recorded as a result of transition to the new standard, proposals have emerged and have been discussed so that at the regulatory level there is a gradual recognition of the potential effect on capital. Transition to the new standard should have a lower impact on banks using internal-ratings-based models than for those using the standard method, in terms of implementation and potential increase in impairments.

Institutions, auditors, supervisors and regulators should pay special attention to some aspects related to the introduction of the new standard, mainly regarding pro-cyclicality, the volatility of results and the increment of subjectivity. With regard to the last point in particular, Banco de Portugal will monitor implementation of the new standard, taking into account work at SSM level and the need to promote equal treatment among the different institutions.

Compliance with regulatory requirements under the MREL, by allowing for a reinforcement of credit institutions' loss-absorbing capacity, is a key factor for greater resilience of the banking sector. However, transition to long-term equilibrium, by requiring the issue of debt instruments may, in the event of difficult market access, encourage financial institutions to unduly place those instruments, thus incurring conduct risk.

Hence, to minimise unwanted effects on financial stability stemming from compliance with MREL requirements, it is important to ensure (i) an adequate transition period for the long-term equilibrium; (ii) the monitoring of changes in the behaviour of banks following the new regulatory requirements; and (iii) the placement of debt instruments taking into account the profile of investors and geographical diversification criteria.

In particular, the transitional period, essential for institutions to be able to adjust their balance sheets, should be differentiated according to the specifics of the business model, promoting a level playing field among institutions and the different European jurisdictions.

Compliance with MREL requirements, by fostering additional financing costs for issuing institutions, may lead to changes in their behaviour towards risk, particularly as regards credit standards. These situations should be duly monitored, and prudential action taken when warranted.

Taking into account the loss-absorbing purpose of these instruments, their placement in institutional investors will make it possible to mitigate a potential loss of public confidence in the banking system in the event of resolution. In addition, to avoid contagion to the resident financial system, a diversification of the institutional investors' geographic base is desirable. Likewise, cross-shareholdings of capital and MREL instruments on banks' balance sheets should be avoided, as they help amplify systemic risk.

Also regarding conduct risk, from 1 January 2018 onwards credit institutions will have to provide their customers a new information document before they invest in indexed deposits and other complex financial products, classified as Packaged Retail and Insurance-based Investment Products (PRIIP). The new pre-contractual

information document should, among other elements, summarise the main characteristics of the product, by resorting to summary indicators of risk and costs and remuneration scenarios. These rules are intended to give banking customers a better perception of financial products and the associated risks.

Box 1 • Changes to the macroprudential policy framework in the European Union: main priorities from Banco de Portugal's perspective

In 2016 the European Commission launched a public consultation on the revision of the institutional and regulatory macroprudential policy framework in the European Union. While seeking to reflect recent changes to the institutional architecture, arising from the creation of the Banking Union and, in particular, the Single Supervisory Mechanism (SSM), and also to overcome weaknesses in the current regulatory framework, this initiative is of key importance for the implementation of a macroprudential policy that takes effective action to promote financial stability in the European Union.

Given the importance of this initiative for the performance of its tasks as national macroprudential authority, Banco de Portugal responded to the consultation, reporting to the European Commission its position regarding the issues raised and the principles that, in its opinion, should guide the revision of the macroprudential policy framework in the European Union. These principles, in general, aim to (i) promote a clear allocation of responsibilities and policy instruments, (ii) equip macroprudential authorities with adequate powers and instruments to identify and control systemic risk, strengthening its intervention in financial sectors, other than the banking sector, and (iii) preserve its performance flexibility in order to mitigate systemic risk.

As regards the first principle, Banco de Portugal considers that the new institutional framework of macroeconomic policy should be characterised by a clear allocation of responsibilities and policy instruments, in order to minimise regulatory overlaps and gaps as regards the mandates of the different national and supranational authorities, which may jeopardise the effectiveness of macroprudential policy, both nationally and at European level. The creation of the Banking Union, and in particular the SSM, as it occurred after the definition of the regulatory framework of macroprudential policy, has posed new challenges at the level of both the role played by the European Systemic Risk Board (ESRB), and the coordination and cooperation between the different authorities and the European Central Bank (ECB), which should now be clarified (see, in this respect, Box 4 'Banking Union architecture: challenges and constraints in the transition process', in the May 2016 issue of the *Financial Stability Report*).

In this new institutional framework, Banco de Portugal believes the ECB should maintain its mandate in terms of the macroprudential powers allocated to it, regarding the banking sectors of countries that have joined the SSM. Thus, at the banking sector level, the ECB should preserve its capacity to apply more stringent macroprudential measures provided for in European legislation, where justified to preserve financial stability in the euro area, thus continuing to play a role supplementing the work of national macroprudential authorities.

With a view to complementing the role and the existence of the ECB/SSM in this field, the ESRB's mandate should be adjusted, focusing on (i) the conceptual framework of macroprudential policy in all areas of the financial system; (ii) risk analysis and policy considerations in subjects related to the banking sector, but taking on the ECB/SSM's responsibilities in this field; and (iii) risk analysis and policy considerations on

developments in the non-bank financial sectors (i.e. the insurance and pension funds sector, and the financial market sector). Therefore, based on the premise of adopting effective cooperation and coordination mechanisms among the different authorities, this contributes to the integrity of the single market while minimising duplicate efforts in promoting financial stability.

As regards the allocation of policy instruments, and given that the CRR/CRD IV[9] agreement predated the creation of national macroprudential authorities, Banco de Portugal is of the view that each prudential instrument provided for in European legislation should be allocated to a single authority, either the competent (microprudential) authority or the designated (macroprudential) authority. In effect, Banco de Portugal advocates that, as a general principle, the macroprudential instruments should be assigned to the designated authorities, while microprudential instruments should be allocated to the competent authorities.

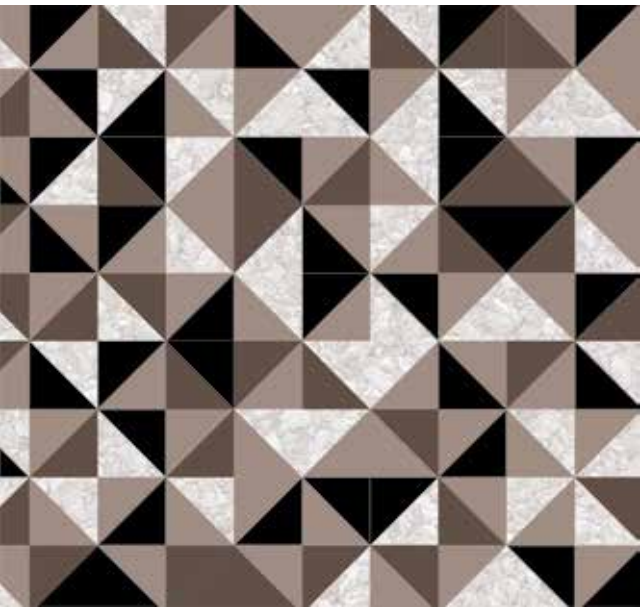
More specifically, this principle justifies Banco de Portugal's opinion as regards the allocation of the use of Pillar II measures to microprudential authorities, advocating their use to address only idiosyncratic risks and ensuring that macroprudential authorities may have recourse to other instruments to mitigate systemic risks that currently could only be mitigated with Pillar II measures. Indeed, in the current regulatory context, Pillar II requirements may be implemented to contain risks that are common to a number of institutions and may be considered systemic, although the decision on their implementation falls on the competent authority. However, the lack of transparency associated with this instrument, as well as the resulting failure to signal the regulator's initiative to the market, means that this instrument cannot be considered appropriate for the conduct of macroprudential policy. Nevertheless, in Banco de Portugal's opinion, restricting the use of Pillar II requirements to idiosyncratic risks requires flexibility and sufficiency in the instruments given to macroprudential authorities to address systemic risks. In any case, micro and macroprudential authorities must establish effective cooperation and communication mechanisms in order to ensure that all risks are duly analysed and mitigated and that there are no duplicate requirements to address the same risk.

With a view to endowing macroprudential authorities with sufficient powers and instruments to address systemic risk sources,[10] Banco de Portugal believes that macroprudential authorities should have at their disposal instruments that are sufficiently flexible to mitigate such risks, thus preventing an approach in which one instrument is defined for each type of risk. For instance, the Systemic Risk Buffer may be one such instrument, as regards capital buffers, if the legal framework were revised enabling their application to a range of geographical and other exposures, and if its activation process were simplified. Flexibility should also be reflected in the existing possibility of macroprudential authorities using instruments that are not standardised in European regulations to address specific sources of systemic risk.

As regards, in particular, the institutional operation of the ESRB, Banco de Portugal recommends that the composition of the decision-making bodies of this organisation should be comprehensive, in order to have a widespread coverage of expertise and perspectives, as has been the case so far. In particular, Banco de Portugal advocates that Member States should not be merely represented by a national authority, which would reduce the ESRB's ability to reconcile different visions and therefore hinder the balance of power already established. It also advocates that central banks should continue to be voting members, in line with their leading role in macroprudential policy, as provided for in the ESRB Recommendation on the macroprudential mandate of national authorities (ESRB/2011/3).

Notes

1. Available at https://www.bankingsupervision.europa.eu/press/pr/date/2017/html/sr170320.en.html.
2. See Box 3 "Net interest income – Recent developments and future prospects", *Financial Stability Report*, May 2016.
3. See Bank Lending Survey, available at https://www.bportugal.pt/en/publications/banco-de-portugal/all/114.
4. For an analysis of the sensitivity of the public debt portfolio of banks to yield changes, see 'III. Banking sector'.
5. Press release on the new conditions of loans of the Resolution Fund available at http://www.fundoderesolucao.pt/pt-PT/Comunicados/Documents/20170321_Comunicado%20FdR.pdf (only in Portuguese)
6. See Special issue "An interpretation of the low sovereign yields in the euro area", *Economic Bulletin*, December 2015.
7. As an illustration, see the ESRB Risk Dashboard of March 2017, page 21: https://www.esrb.europa.eu/pub/pdf/dashboard/20170330_risk_dashboard.en.pdf?2bbedcb711e755785acda2c1a0a3fd4c.
8. See Box 1 "Countercyclical Capital Buffer", *Financial Stability Report*, November 2016.
9. Corresponding to Regulation No 575/2013 and Directive 2013/36, both of the European Union.
10. See, on macroprudential policy instruments, Box 4 'Initiatives to strengthen capital buffers', November 2015 issue of the *Financial Stability Report*, and Box 1 'Countercyclical Capital Buffer', November 2016 issue of the *Financial Stability Report*.



II
Financing of the economy

Summary

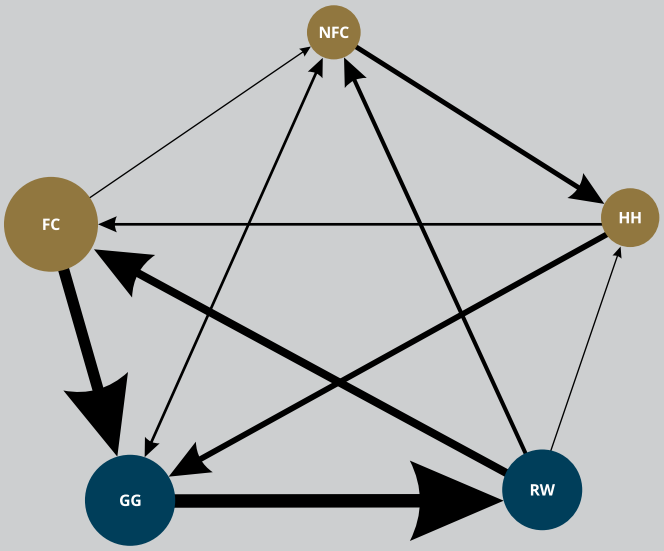
In 2016, the Portuguese economy continued to grow moderately, slightly slower than in the previous year. This was due to less buoyant domestic demand largely stemming from both a fall in investment and a deceleration in exports of goods and services, which, nevertheless, continued to post sizeable market share gains. However, economic activity showed a marked intra-annual profile, accelerating significantly in the second half of the year. This recovery profile was particularly evident in investment, mostly in its corporate component. Maintaining this trend, together with the balance sheet adjustment in domestic institutional sectors, is key to supporting economic growth and, consequently, contributing to debt sustainability.

Domestic savings were stable in 2016, around 15% of GDP, below the euro area average (24% of GDP). Compared with the previous year, contributions made by the general government and non-financial corporations (NFCs) have improved, and NFC savings reached a near-record high. Conversely, the household savings rate has reached a new low, which, in a context of low interest rates and high consumer confidence levels may point to a reduction in precautionary savings.

Domestic savings are key to investment financing, which is at a record low. Amid high external indebtedness of the Portuguese economy, it is important that any upturn in investment is accompanied by an increase in domestic savings ensuring the maintenance of an equilibrium in external accounts. In 2016 the Portuguese economy continued to have net lending capacity, at 1.5% of GDP (0.3% in 2015).[1]

The Portuguese economy's net lending capacity was reflected, on the one hand, in the partial early repayment of loans granted by the IMF under the EFAP (Chart 1) and on the net disinvestment in Portuguese debt securities by non-residents, particularly government debt securities. On the other hand, the Eurosystem's public sector purchase programme (PSPP) made it possible to channel Eurosystem funds to purchase Portuguese government debt securities in the secondary market through the central bank.

Although the Portuguese government debt funding costs have benefited since 2015 from the positive effect of the PSPP, the market perception about the approximation to the Portuguese asset purchase limits set by the ECB contributed, inter alia, to the widening of the differentials between Portuguese and German government bond yields in 2016.



RW – Rest of the world | HH – Households | NFC – Non-Financial corporations | GG – General Government | FC – Financial corporations

Chart 1 • Flow of funds in the Portuguese economy | 2016 | As a percentage of GDP

Sources: INE and Banco de Portugal.
Notes: The size of the circles is proportional to the magnitude of each sector's net lending/borrowing. Gold circles stand for net lending while blue circles stand for net borrowing. The arrow's width is proportional to the net financial flow between sectors (balance of net asset transactions and liabilities transactions), and the arrows point the direction of the net financing..

Furthermore, in 2016 there was an increase of the share of government debt hold by households, not only through the purchase of Savings certificates and Treasury certificates, similarly to previous years, but also through the issuance of a new debt instrument (floating-rate Treasury bonds) for retail investors. The financial sector also increased its exposure to Portuguese government debt.

Also, although in 2016 general government net borrowing fell to record lows, the public debt ratio (as a percentage of GDP) remained virtually unchanged, and is among the highest in the euro area.

The activity of financial corporations in 2016 reflected, in addition to Eurosystem operations, the contraction in financial intermediation amid continued deleveraging in the Portuguese economy. This contraction was broadly based across types of financial intermediaries (except for the central bank) and also led to a decrease in inter-linkages between financial sector entities.

The decrease of the leverage in the Portuguese economy was reflected in net repayment of the non-financial private sector's financial debt. However, new loans increased, particularly to households for consumption purposes. In the case of NFCs, net repayment of debt to resident credit institutions and households was offset by foreign loans, particularly intra-group loans.

1. Financial markets

Following some financial market instability in early 2016, in the second half of the year European stock price indices increased

The high financial integration of the Portuguese economy makes it particularly dependent on international financial market developments, which tend to constrain the environment in which domestic agents make economic and financial decisions.

In 2016, financial markets were mostly affected by, on the one hand, the increase in global imbalances, more specifically in emerging market economies (particularly China) and, on the other hand, the quality of the banking system's balance sheet assets and the lower potential growth in a number of developed economies, more specifically in the euro area. Financial markets were also influenced by political developments, particularly events capable of jeopardising international trade and economic integration, for instance, the outcome of the US presidential election and the UK referendum on EU membership.

In this regard, there were two episodes of major financial market instability in the first half of 2016, when the European stock price index (Eurostoxx 50) posted substantial devaluations in February and June (Chart 2). The first instability episode, which started in January, was related to the fall in oil prices and stock market developments in China, while the second episode was due to uncertainty stemming from the outcome of the UK referendum on EU membership (23 June), which benefited less risky assets.

Following the UK referendum on EU membership, the Eurostoxx Banks fell more markedly than the Eurostoxx 50. This may be driven by London's importance as a global financial centre and it is also due to the fact that European banks are highly exposed to the British banking system. This effect may have been amplified by increased concerns about the impact of asset quality on the balance sheet of a number of European banks, particularly Italian banks, more specifically as to whether it may compromise the smooth funding of the economy.

Overall, in the second half of the year, the European stock market posted positive developments, which were reflected in 15% and 41% increases in

Eurostoxx 50 and Eurostoxx Banks respectively. From October onwards, developments in both indices inched closer, with the Eurostoxx Banks gradually converging towards the Eurostoxx 50. Measures implemented by the Bank of England to reduce the countercyclical capital buffer in July and to increase monetary stimuli in August[2] may have contributed positively to the convergence of both indices. In the euro area, measures implemented in a number of countries, more specifically Italy,[3] as well as the priority set by the SSM to streamline the treatment of non-performing assets on banks' balance sheets, seem to have also contributed to market sentiment improvements at the end of the year.

PSI-20, the Portuguese stock price index, generally followed developments in the European benchmark index, although both indices drifted apart from August onwards, while the PSI-Financial index fell markedly in May 2016, although stabilising later on. This may have been due to uncertainty regarding the capitalisation of credit institutions in Portugal, the greater focus placed by the market in the quality of banks' assets and the interlinkage between the sovereign and banking sectors. In early 2017, the PSI-20 and PSI-Financial indices recovered and followed a positive path, although more marked in the case of PSI-Financial, which points to a shift in market perception of the aforementioned factors.

Long-term government bond yields in Europe increased in the second half of 2016, more significantly in a number of euro area countries more affected by the sovereign debt crisis

In the main world economies, monetary policy remained accommodative, although the US Federal Reserve, as expected, proceeded with its upward interest rate cycle at the end of 2016. This movement continued in early 2017, on the basis of expectations of a continued gradual normalisation of interest rate levels in the course of 2017 and 2018. In March 2016, the ECB announced a cut in its key rates and the expansion of its asset purchase programme.[4] Interest rates on main refinancing operations and the marginal lending facility were set at 0.00% and 0.25% respectively, and the interest rate on the deposit facility at -0.40%. In December, the ECB announced the extension of the programme for another 9 months, although with a reduction in the average monthly pace, from €80 billion to €60 billion, as of April 2017, as well as changes in other features.[5] In April 2017, the ECB decided to maintain its key interest rates unchanged, thus reinforcing accommodative monetary policy.

Therefore, in the bond market, US long-term yields increased substantially in the second half of 2016, reflecting the aforementioned expectations

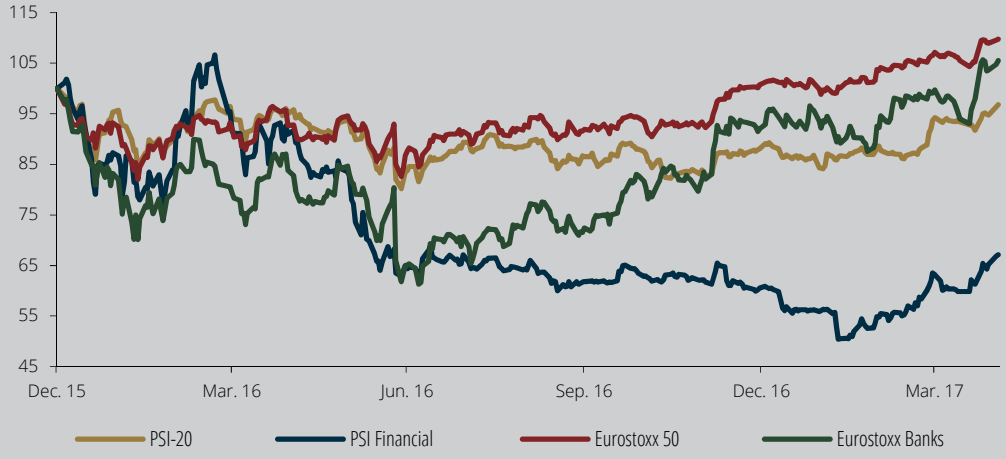


Chart 2 • Stock market indices | Index: December 2015 =100

Source: Thomson Reuters.
Note: Last update on 12 May 2017.

of developments in short-term interest rates and incorporating a higher inflation risk premium in anticipation of a more expansionary fiscal policy by the US administration.[6] Long-term yields in Europe have increased more modestly, although more markedly in countries where uncertainty about political developments and the banking sector's soundness is greater. Indeed, in 2016 risk premia on ten-year government bonds, against German debt, widened for Portugal and Italy, and more marginally for Spain.

In spite of a long period of political uncertainty, Spain was able to form a government following the June elections, which seems to have contributed, inter alia, to the narrowing of the spread versus Germany in the second half of the year. In Italy, in addition to the issues related to the banking system, some uncertainty emerged from the constitutional referendum on reform of the Italian political system, which also contributed to an increase in its government bond yields. After the 4 December referendum, which rejected this reform, the ten-year government bond interest rate started to edge downwards.

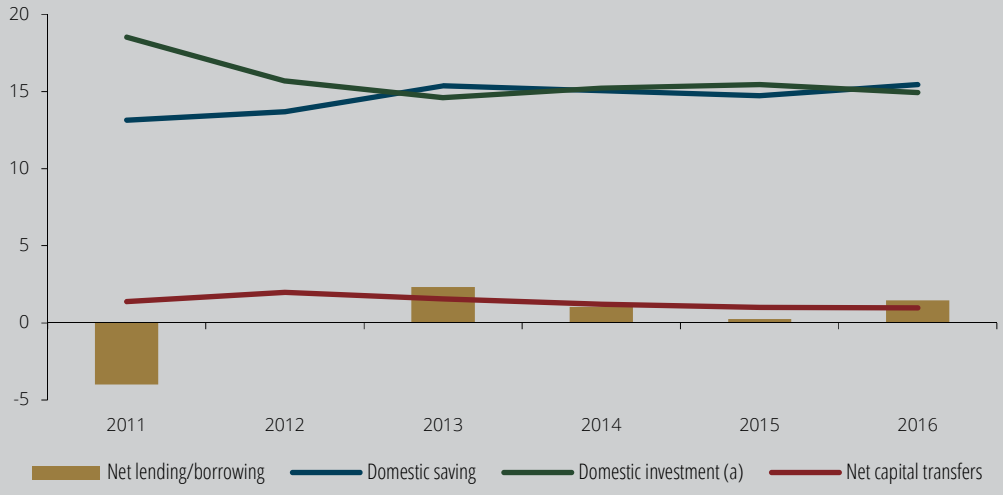
In Portugal, the lack of sound evidence of a reversal in the upward path of public debt, despite a reduction in the general government deficit, and risks associated with the capitalisation of the banking sector[7] contributed to the widening in the differential versus the German government bond yield in 2016. However, although the monthly purchases of Portuguese public debt were adjusted downwards under the PSPP, in 2017 Portuguese public debt spreads narrowed more markedly than in other countries affected by the sovereign debt crisis. This seems to have reflected investors' more favourable perception regarding the fiscal position, economic growth and the banking sector in Portugal.

2. Portuguese economy

Although the international investment position of Portugal is still among the most negative in the euro area, the Portuguese economy has recorded a net lending capacity since 2012

The Portuguese economy has recorded a net lending capacity since 2012, which has reflected similar domestic savings and investment levels and a positive capital transfers balance (Chart 3). In 2016, net lending capacity was higher than in 2015 (1.5% of GDP and 0.3% of GDP respectively). These developments reflected the substantial increase in the current account

Chart 3 • Domestic savings, investment and net lending/ borrowing
| As a percentage of GDP



Source: Statistics Portugal.
Note: (a) Corresponding 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.

balance, largely as a result of growth in exports of goods and services (particularly related to travel and tourism) above that of imports. In turn, the capital account surplus declined compared with the previous year, which was due to delays in the allocation of Community funds to ultimate beneficiaries, due to a transition between Community support frameworks. In terms of financial transactions with the rest of the world, this net lending capacity was reflected in net outflows (corresponding to 1.7% of GDP),[8] given that the net purchase by residents of external financial assets (3.5% of GDP) exceeded the net purchase of domestic financial assets by non-residents (1.8% of GDP). The main operations conducted in 2016 that contributed to fund inflows were foreign direct investment in Portugal, in the form of capital and loans granted to resident non-financial corporations, and the channelling of Eurosystem funds for the purchase of Portuguese government debt securities under the PSPP. The main contributions to fund outflows were made by net flows of loans granted by resident non-financial corporations to intra-group corporations located abroad, net purchases of debt securities by the central bank in the context of Eurosystem monetary policy operations and the partial early repayment of the loan granted by the IMF under the EFAP.

The international investment position (IIP) of Portugal improved in 2016, to stand at -105.1% of GDP, compared with -112.0% of GDP at the end of 2015. In addition to the positive contribution made by net transactions in financial assets (1.7 p.p. of GDP) and by the nominal GDP growth (3.3 p.p.), this improvement was chiefly due to price changes (2.7 p.p. of GDP), in particular, the decrease in the value of Portuguese government debt securities held by non-residents and the effect of an increase in the value of monetary gold held by the central bank. In spite of improvements since 2014, the IIP of Portugal has remained among the most negative in the euro area (Chart 4), as a result of external imbalances building up over a long period, which led to substantial net borrowing from abroad. The IIP is one of the indicators used by the European Commission to assess excessive macroeconomic imbalances in Member States.[9] The risk threshold for this indicator was set at -35% of GDP, with Portugal currently exceeding it by a considerable margin. Net external debt of Portugal (corresponding to the IIP net of capital instruments and financial derivatives) also improved in 2016, moving from 101.5% of GDP at the end of 2015 to 94.4% of GDP at the end of the year.

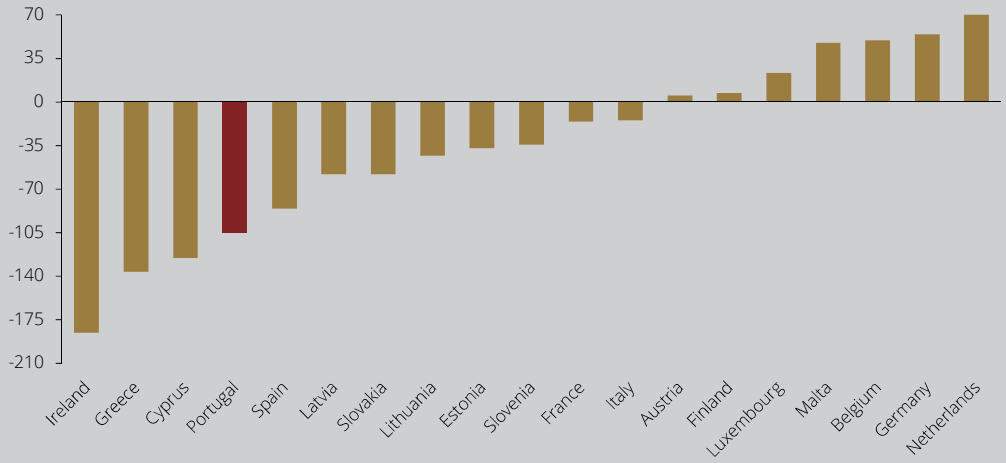


Chart 4 • International investment position in 2016 – international comparison
| As a percentage of GDP

Source: Eurostat.
Note: End-of-period positions.

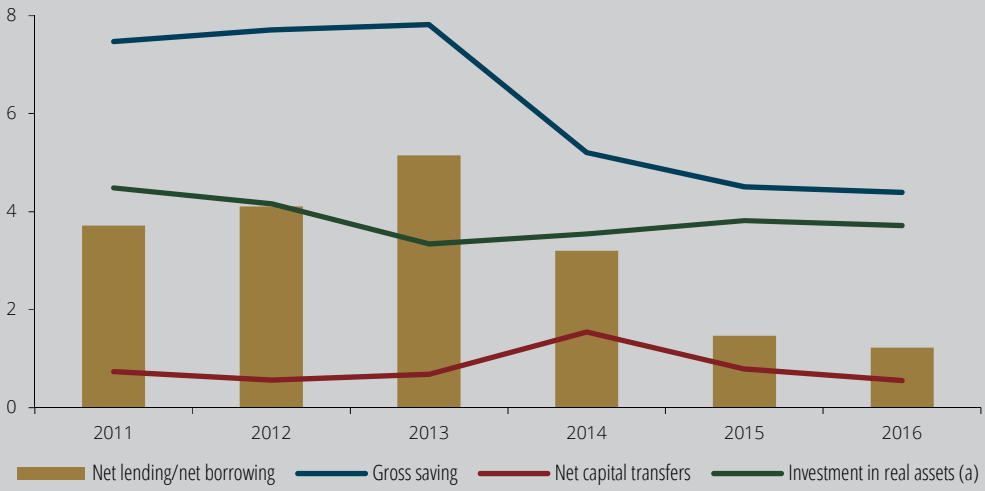
2.1. Households

The low household savings rate may constrain the domestic funding of investment

In 2016, the household net lending capacity was 1.2% of disposable income (1.5% of disposable income in 2015), maintaining the downward trend seen since the end of the EFAP (Chart 5). This decrease in household net lending capacity has chiefly reflected the downward path followed by the savings rate, which, according to preliminary data released by Statistics Portugal on the national accounts, reached its lowest value in 2016 since the beginning of the series in 1995, i.e. 4.4% of disposable income. The household savings rate is among the lowest in the euro area and is less than half of the average savings rate in the euro area (Chart 6). Against a background of low interest and inflation rates and consumer confidence at historically high levels,[10] developments in the household savings rate may reflect a decrease in precautionary savings.[11]

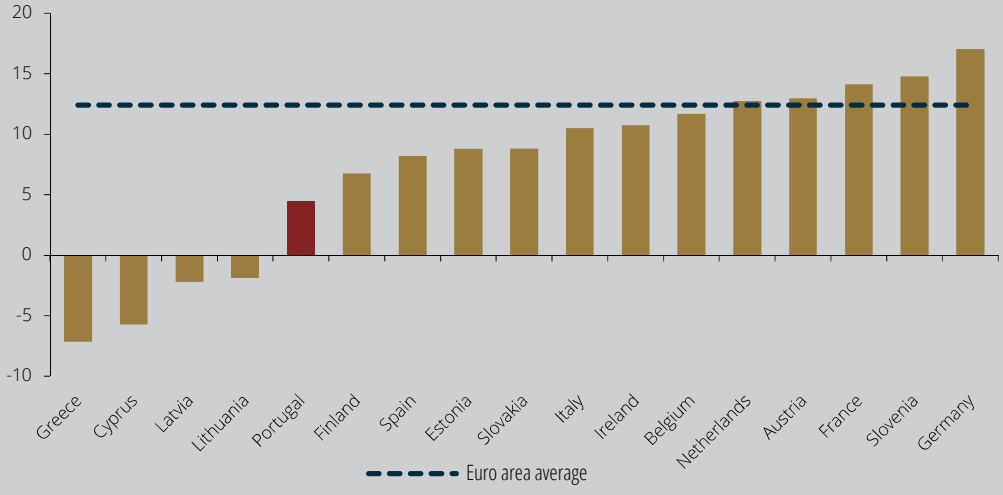
In spite of the downward path followed by the household savings rate, domestic savings stabilised around 15% of GDP since 2013, reflecting the increase in the savings rate of non-financial corporations and general government. However, this rate is lower than the euro area average and has been accompanied by very low domestic investment levels. Given that

Chart 5 • Households' savings, investment and net lending
| As a percentage of disposable income



Source: Statistics Portugal.
Note: (a) Corresponding 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 6 • Households' savings rate in euro area countries in 2015
| As a percentage of disposable income



Source: Eurostat.
Note: Disposable income adjusted for the change in net equity of households on pension funds.

households are typically the saving sector in the economy, a low savings rate in this sector may constrain domestic funding of investment, which could hinder this aggregate's recovery without jeopardising the equilibrium of external accounts.

The net repayment of household financial debt seen since 2011 continued in 2016

The net repayment of financial debt continued in 2016[12] (2.0% of disposable income), but has been decelerating since 2012 (Chart 7), when the gross flows of new loans to households began to increase. The annual rate of change in loans granted to this sector by resident credit institutions moved up from -2.2% in December 2015 to -1.6% in December 2016. By purpose of credit, the annual rate of change in housing loans was close to that for the end of 2015 (down from -2.9% to -2.7%). Nevertheless, the flow of new bank loans for house purchase increased (44% from the previous year), to levels close to those in 2011, although still far from those seen prior to the financial crisis (Chart 8).

According to the Bank Lending Survey results[13] released in 2016, these developments chiefly reflected an increase in loan demand, supported by greater consumer confidence, low interest rates and a better outlook for the housing market. Turning to credit standards in this segment, respondent banks signalled relative stability in the course of the year, although the increase in competitive pressure and more favourable prospects for the economic situation (in general) and the housing market (in particular) contributed to some easing, reflected in a slight reduction in spreads on average risk loans. In 2016, housing prices grew by 7.1%, i.e. more than twice than in 2015 (3.1%), with residential property transactions increasing by approximately 18.5% from the previous year. However, this seems to have been rather heterogeneous in geographical terms. The average bank appraisal on housing rose by 3.8% from 2015.

In 2016, the share of loans with an initial rate fixation period of over one year in total new bank loans for house purchase increased to 34%, compared with 8% in 2015. These fixed-rate credit agreements[14] make it possible for households to eliminate the risk of interest rate increases over the time frame in which the interest rate was fixed.

Loans for consumption and other purposes accelerated substantially in 2016, with the annual rate of change increasing to 3.0% at the end of the year, after 0.9% in December 2015. According to Bank Lending Survey results, loan developments in this segment were influenced

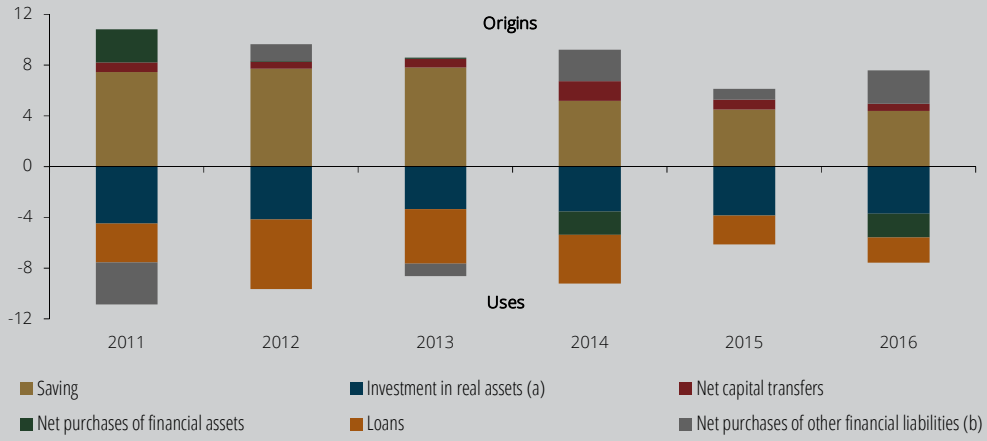


Chart 7 • Origins and uses of household funds | As a percentage of disposable income

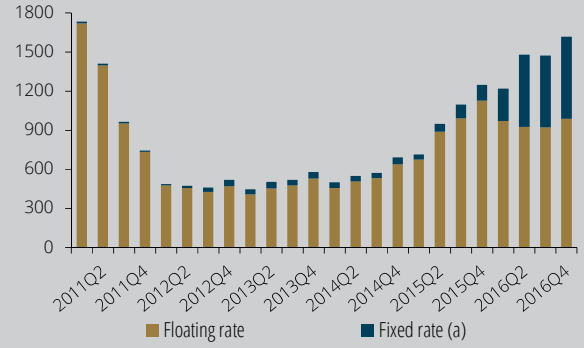
Sources: Statistics Portugal and Banco de Portugal.
Notes: (a) Corresponding to the sum of gross fixed capital formation, changes in inventories, acquisitions less disposals of valuables and acquisitions less disposals of non-produced non-financial assets. (b) Includes other debits and credits.

by the same factors as housing loans and, furthermore, by the increase in consumer spending on durable goods. The flow of new consumer loans has increased continuously since 2012, and in 2016 it increased by 18% from 2015 (Chart 9). These developments were in line with the increase in car sales, which reflected renewals in the fleet of vehicles that had been postponed during the crisis. In the first quarter of 2016, growth of car loans was also boosted by the anticipation of future purchases in the wake of an announcement of an increase in the vehicle tax with effect from April. In the following quarters, however, consumer loan flows slowed down somewhat. The main contribution to changes in consumer loans was made by financial institutions specialised in this type of credit and was mostly granted to individuals with financial debt below €50,000.[15]

Since the beginning of the EFAP, household debt as a percentage of disposable income has decreased by 21 p.p.

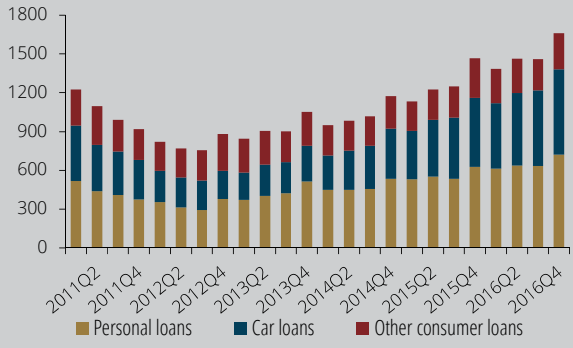
At the end of 2016, total household debt[16] stood at 110% of disposable income (75% of GDP) (Chart 10), which accounted for a 6 p.p. decline from 2015 (116% of disposable income). Since 2011, when the EFAP began, this sector's debt ratio has decreased by 21 p.p., although

Chart 8 • Flow of new bank loans for house purchase
| EUR millions



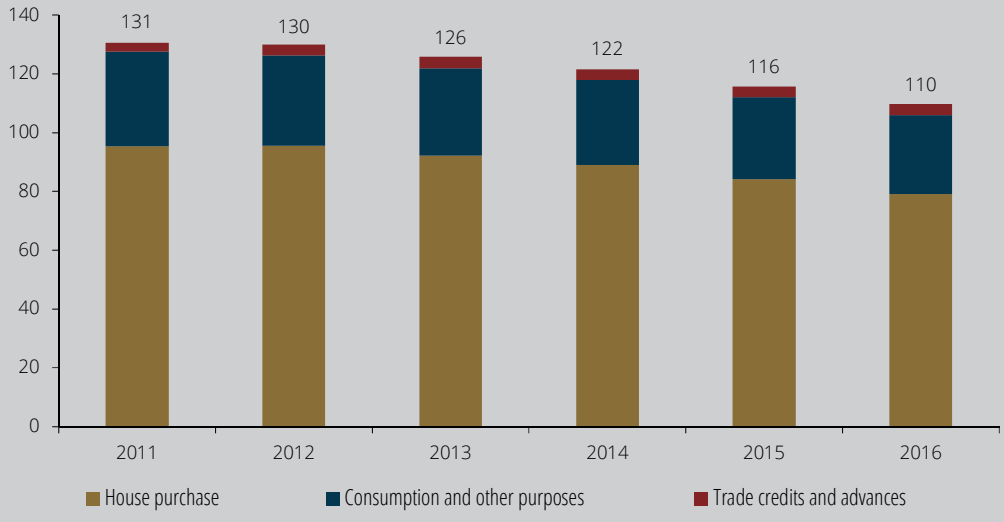
Source: Banco de Portugal.
Notes: Amounts of new loans granted by monetary financial institutions to euro area residents. (a) Loans with an initial rate fixation period of over one year.

Chart 9 • Flow of new consumer loans
| EUR millions



Source: Banco de Portugal.
Notes: Data on new consumer loans are reported on a monthly basis to Banco de Portugal by credit institutions, pursuant to Instruction of Banco de Portugal No 14/2013.

Chart 10 • Total household debt | As a percentage of disposable income



Sources: Statistics Portugal and Banco de Portugal.
Notes: End-of-period positions. Consolidated figures.

it is still among the highest in the euro area (Chart 11). These developments – which were particularly substantial between 2011 and 2014, given that they accompanied a marked reduction in disposable income – corresponded to a sizeable adjustment in household balance sheets compared with the high debt levels reached particularly in the period prior to the financial crisis.

The household financial asset portfolio continued to give preference to assets with lower capital risk

With regard to the household financial asset portfolio, in 2016 the portfolio shift towards an increase in the share of instruments with lower capital risk proceeded, more specifically through the net acquisition of savings and Treasury certificates[17] (2.7% of disposable income) and the collection of deposits with resident monetary financial institutions (0.9% of disposable income). In 2016, investment in floating-rate Treasury bonds was high (2.5% of disposable income). These bonds were first issued in the second quarter. Overall, households invested approximately 1.5% of disposable income in debt securities, while net investment in floating-rate Treasury bonds was accompanied by net disinvestment in debt securities issued by resident monetary financial institutions, non-financial corporations and non-residents.

Households also disinvested, in net terms, in life insurance products (1.9% of disposable income), shares and other equity (0.6% of disposable income), issued mostly by non-financial corporations, and mutual fund units (0.4% of disposable income) (Chart 12). There was also the net repayment of loans to non-financial corporations (1.4% of disposable income). Shareholder/partner loans played a particularly important role in corporate funding between 2011 and 2014, during the EFAP, when bank credit standards were tighter. The higher internal financing of firms and easier access to bank credit facilitated the net repayment of those loans in 2016.

In 2016 household financial wealth benefited from the increase in value of unlisted shares and other equity in non-financial corporations, amid higher profitability in the sector. At the end of 2016, household financial wealth accounted for approximately 170% of disposable income (117% of GDP), close to the euro area average.

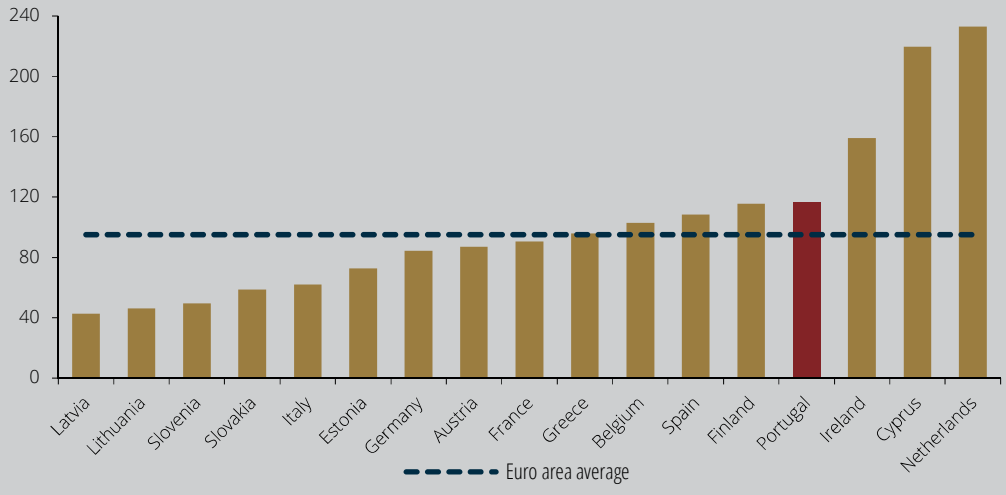


Chart 11 • Total household debt in 2015 – international comparison
| As a percentage of disposable income

Source: Eurostat.
Note: End-of-period positions.

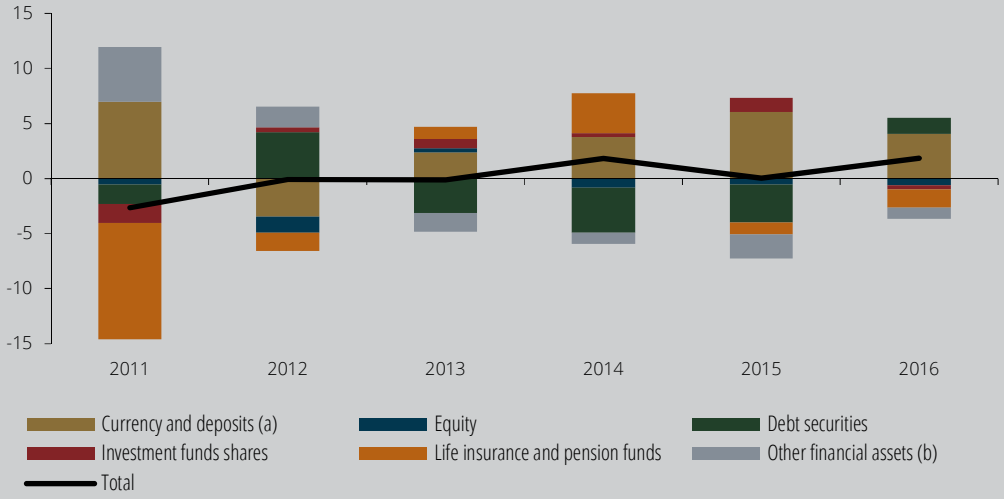
2.2. Non-financial corporations

In 2016 the increase in profitability of non-financial corporations and improvements in the balance of property income continued to be reflected in an increase in this sector's savings

In 2016 non-financial corporations (NFCs) recorded a net lending capacity of 0.4% of GDP, compared with a slight net borrowing in 2015 (0.2% of GDP). Against a background where investment and capital transfers remained virtually unchanged from the previous year, these developments chiefly reflected an increase in savings, to 10.4% of GDP (9.6% of GDP in 2015) (Chart 13). Gross savings of NFCs have followed an upward path since 2009, which has reflected an increase in gross operating surplus, as a result of improvements in private NFC profitability and, in general, improvements in the balance of property income (chiefly as a result of the decrease in the distributed income and interest expenses balances) (Chart 14). However, in 2016 the net effect of the interest rate decrease was slightly negative (in aggregate terms, the decline in interest received by NFCs was more marked than that in interest expenses).

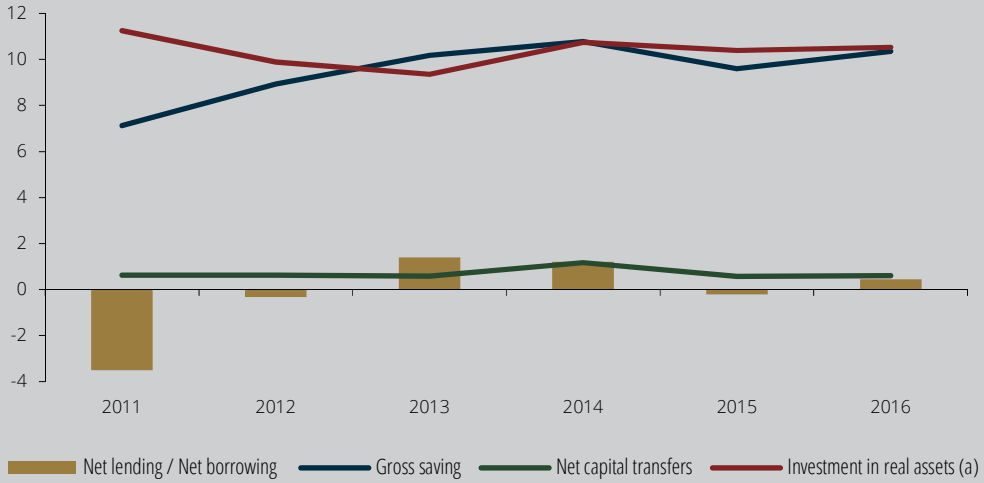
Improvements in the financial situation of NFCs, amid positive developments in economic activity, were corroborated by developments

Chart 12 • Households' transactions on financial assets
| As a percentage of disposable income



Sources: Statistics Portugal and Banco de Portugal. Notes: Consolidated figures. (a) Includes savings and Treasury certificates. (b) Includes non-life insurance technical reserves, loans, financial derivatives, trade credits and advances and other accounts payable/receivable.

Chart 13 • NFC savings, investment and net lending/borrowing
| As a percentage of GDP



Source: Statistics Portugal. Note: (a) Corresponding 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.

in this sector's financial ratios. NFC profitability ratio[18] increased to 9.7% in 2016 (9.1% in 2015), amid improvements in economic activity. This increase was broadly based across most sectors of activity, but relatively more marked in wholesale and retail trade sector, and across all enterprise sizes. The combined effect of improvements in profitability and a decrease in interest rates resulted in the NFCs' greater ability to meet their credit obligations. The interest coverage ratio (measured as the ratio of EBITDA[19] to interest expenses) increased from 4.8 in 2015 to 5.7 in 2016, continuing on the upward path that started in 2012 (Chart 15). This was most notable in the wholesale and retail trade (up from 7.7 in 2015 to 10.2 in 2016) and manufacturing (up from 10 in 2015 to 13.3 in 2016) sectors, but more muted in the construction sector (up from 1.8 in 2015 to 2.2 in 2016). The share of equity in the NFC funding structure increased in 2016, maintaining the same trend as in previous years.

> The net repayment of loans by non-financial corporations to resident credit institutions was partly offset by the increase in external loans, particularly intra-group loans

In 2016, NFC net transactions in financial assets resulted in an increase in deposits (1.7% of GDP) and loans granted to non-residents (1.6% of GDP), mostly associated with

Chart 14 • Uses of NFC gross operating surplus | As a percentage of GDP

Source: Statistics Portugal.
Notes: 'Net' stands for the difference between sources and uses. (a) Other property income includes reinvested earnings on foreign direct investment, rents and property income attributed to insurance policy holders.

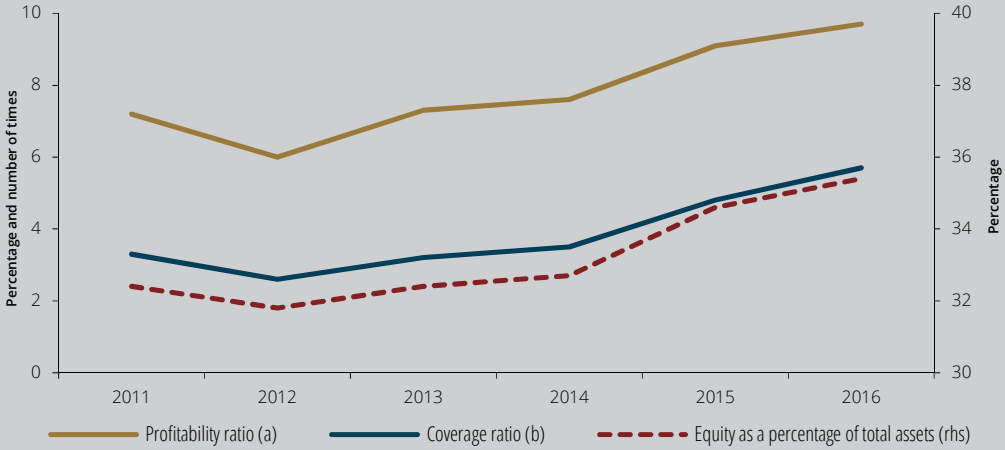


Chart 15 • Performance indicators of non-financial corporations

Source: Banco de Portugal.
Notes: (a) Profitability ratio = EBITDA / (equity + obtained funding) (percentage). (b) Interest coverage ratio = EBITDA / Interest expenses (number of times).

intra-group financing. On the liabilities side, the net repayment of financial debt corresponded to 0.6% of GDP (0.4% of GDP in 2015). This mostly reflected the net repayment of loans to the resident financial system (1.7% of GDP) and households (1.0% of GDP), given that external loans increased by 2.1%. This flow of loans mostly stemmed from group companies.

The annual rate of change in loans granted by resident credit institutions moved further into negative territory, moving from -2.1% in December 2015 to -2.6% in December 2016. These development varied by enterprise size, with net repayment of domestic loans decelerating in microenterprises[20] (including non-financial holding companies), while accelerating in small and medium-sized enterprises. In turn, the annual rate of change in loans granted to large enterprises turned from positive (1.2%) to negative (-1.2%) in the period under review, with external intra-group loans more than offsetting this reduction. Finally, credit granted to exporting companies increased further in 2016 (at the end of the year, the annual rate of change stood at 0.9%), although decelerating from December 2015 (2.6% annual rate of change).

According to the Bank Lending Survey results, the main Portuguese banks have generally reported a decrease in spreads applied to average risk loans to NFCs. Amid a decrease in interest rates on loans to NFCs, increased competition has led to a more pronounced decline in spreads applied to less risky companies. According to the survey, corporate demand for loans has generally stabilised, although a number of surveyed institutions expect a slight increase in demand in 2017, particularly by small and medium-sized enterprises.

The reallocation of the loan portfolio of resident credit institutions towards companies with a better risk profile continued

In 2016, amid a reduction in the financial sector's exposure to the NFC sector, the loan portfolio of resident credit institutions continued to move gradually towards sectors of activity with better economic and financial indicators. As such, the relative share of construction and real estate activities in total loans granted by resident credit institutions to non-financial corporations declined to 27% (29% at the end of 2015), while the relative weight of the wholesale and retail trade and the manufacturing sectors increased to 33% (32% in 2015). The relative importance of loans granted to wholesale and retail trade and manufacturing increased by approximately 5 p.p. since the end of 2011, while the share of loans to construction and real estate sectors decreased by 9 p.p. Furthermore, the share of exporting companies in total loans granted by resident credit institutions has gradually increased, and reached 22% at the end of 2016 (compared with 16% at the end of 2011). Given that, on average, exporting companies have better economic and financial indicators and a lower ratio of credit overdue, these developments help to assess the adequacy of the reallocation of the loan portfolio of financial institutions.

When looking into corporate financial indicators, it becomes clear that in recent years lending by resident credit institutions has privileged enterprises that are more profitable, less indebted and with greater ability to meet their financial obligations. Taking into account a composite risk credit indicator, the z-score,[21] it can be seen that the reduction in loans was more pronounced on non-financial corporations with greater credit risk (see Box 2 entitled "Recent developments in the exposure of resident credit institutions to non-financial corporations").

Since 2012, NFC debt as a percentage of GDP has decreased by 21 p.p.

Total NFC debt decreased by around 5 p.p. in 2016, to stand at 105% of GDP at the end of the year (Chart 16). These ratio developments chiefly reflected GDP growth (with the debt ratio declining by approximately 3.2 p.p. of GDP) and write-offs (by around 1.3 p.p. of GDP), given that the contribution of net credit flows

to the reduction in the debt ratio was relatively subdued (0.3% of GDP).

Since 2012, when it reached a peak, the NFC debt ratio has declined by around 21 p.p., and is still among the highest in the euro area (Chart 17). Initially, the net repayment of loans granted by resident monetary financial institutions contributed to these developments. Over the past two years, the reduction in the ratio was mainly due to the increase in nominal GDP. Conversely, making a contribution to an increase in the debt ratio, loans granted by non-residents and other financial corporations (particularly holding companies) have risen (Chart 18). This led to changes in the relative weight of the various creditor sectors in the NFC financing structure. The share of monetary financial institutions in total corporate debt declined (from 52% to 46%), while the share of funding by non-residents and other financial corporations increased (from 22% to 26% and 10% to 13% respectively). The share of loans to small and medium-sized enterprises in total loans granted by resident credit institutions remained relatively stable in the period under review.

In spite of positive developments in the NFCs' aggregate financial situation, the ratio of overdue loans remains high,[22] particularly those associated with less buoyant sectors of the economy. At the end of 2016, the ratio of overdue loans to total loans granted by resident credit institutions to non-financial corporations amounted to 15.2% (6.9% at the

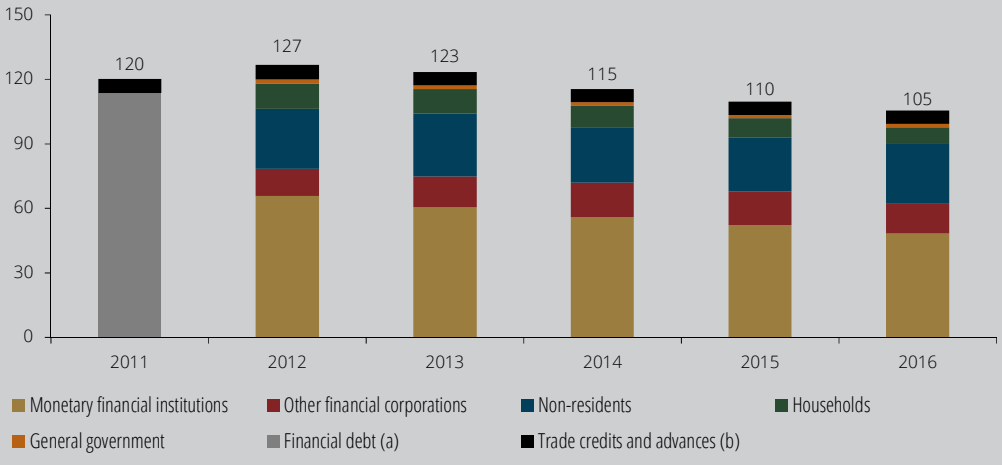


Chart 16 • Total debt of non-financial corporations by creditor sector | As a percentage of GDP

Sources: Statistics Portugal and Banco de Portugal.
Notes: End-of-period positions. Consolidated figures. (a) In 2011, it is not possible to break down financial debt by counterparty sector, as the necessary information is unavailable. (b) It is not possible to break down trade credits and advances by counterparty sector, as the necessary information is unavailable.

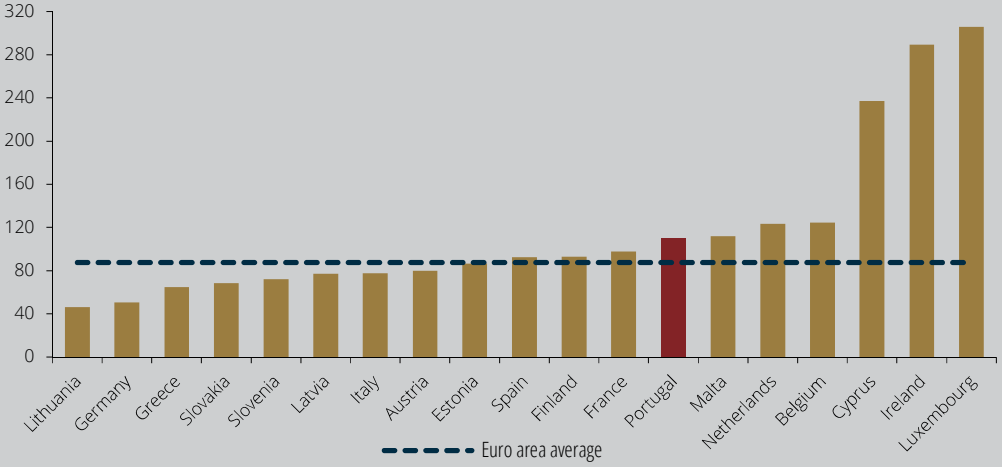


Chart 17 • Total debt of non-financial corporations in 2015 - international comparison | As a percentage of GDP

Source: Eurostat.
Note: End-of-period positions.

end of 2011). The deterioration in the ratios of overdue loans since the beginning of the EFAP was noticeable by enterprise size (although more marked in the case of microenterprises – where it increased from 11.3% to 25.8%) and sector of activity, and was more marked in construction (up from 11.6% in 2011 to 33.0% in 2016) and real estate sectors (up from 7.7% in 2011 to 24.7% at the end of 2016). Indeed, these two sectors account for approximately 48% of NFC overdue loans.

2.3. General government

In 2016, general government net borrowing stood at 2% of GDP

In 2016, the general government deficit reached 2% of GDP (4.4% of GDP in 2015) (Chart 19). Given that the deficit was below the benchmark established by the Treaty on European Union (3% of GDP), at the end of May the European Commission recommended that the Council abrogate the excessive deficit procedure for Portugal applied since the end of 2009. These positive developments were influenced by extraordinary operations in both years. In 2015, a resolution measure was applied to BANIF, which increased the deficit by 1.4% of GDP, while in 2016 temporary measures contributed to reduce the deficit by approximately 0.4% of GDP.[23]

Excluding temporary operations, the deficit declined to 2.4% of GDP in 2016 from 3.0% in the previous year. These developments took place

Chart 18 • Contributions to changes in debt-to-GDP ratio of non-financial corporations | As a percentage of GDP

Sources: Statistics Portugal and Banco de Portugal.
Notes: Consolidated figures.
(a) Corresponding to credit written off against assets in the balance sheets of resident monetary financial institutions.

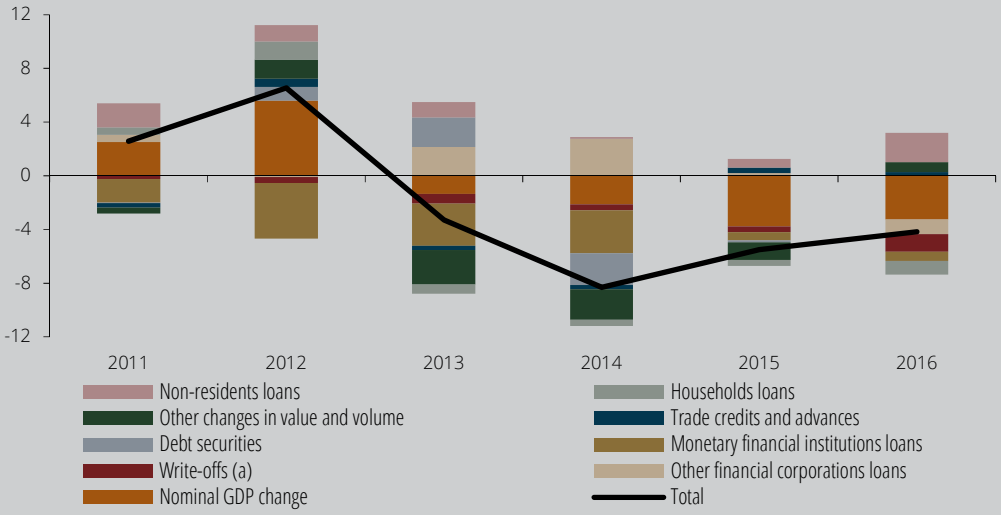
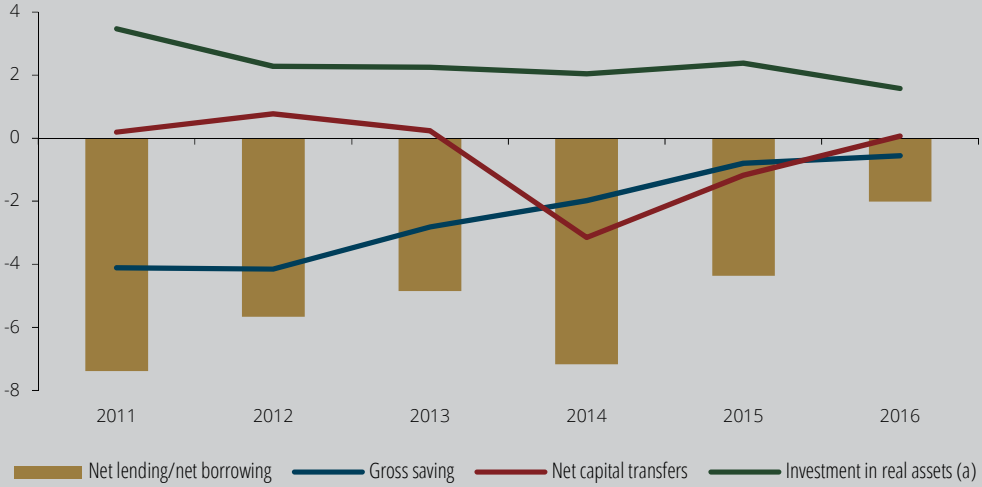


Chart 19 • General government's savings, investment and net borrowing | As a percentage of GDP

Source: Statistics Portugal.
Note: (a) Corresponding 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.



in a context where revenue growth was lower than the forecast in the 2016 State Budget and expenditure decreased more than that projected initially, mainly reflecting the fall in gross fixed capital formation. Interest expenditure decreased by 0.3 p.p. of GDP, to stand at 4.2% of GDP in 2016. The implicit interest rate on public debt has followed a downward path since the beginning of the EFAP, decreasing from 3.6% in 2015 to 3.3% in 2016 (Chart 20). These developments resulted from a decline in interest expenses on loans obtained under the EFAP[24] and the repayment of Treasury bonds issued at higher interest rates than those on new issues.

The updated Stability Programme for 2017-21 projects the general government net borrowing to decline to 1.5% of GDP in 2017, thus revising slightly upwards the estimate included in the State Budget for that year.

The issuance of new floating-rate Treasury bonds for retail investors made a contribution to general government financing of 1.9% of GDP

In 2016, general government net borrowing was funded by net transactions in financial liabilities (which accounted for 4.8% of GDP), partly offset by net transactions in financial assets (2.7% of GDP). On the liabilities side, the net issuance of debt securities (6.2% of GDP) should be highlighted, particularly as regards Treasury bonds (5.3% of GDP), and the net issuance of Treasury certificates (1.8% of GDP). By counterparty sector, there were net acquisitions of debt securities by resident monetary financial institutions (7.1% of GDP) (mostly associated with acquisitions by Banco de Portugal under the ECB's public sector purchase programme), insurance companies (2.3% of GDP) and households (1.7% of GDP). In 2016 the net acquisition of debt securities by households was mostly associated with the issuance of a new debt instrument for retail investors, whose net issues accounted for 1.9% of GDP. The non-resident sector recorded a net disinvestment in Portuguese debt securities to the amount of 5.1% of GDP. Furthermore, there was an early repayment of IMF loans (2.4% of GDP in 2016), reinforced by a further early repayment in February 2017 (approximately €1.7 billion), which raised to around 50% the share of total IMF loans that has been repaid.

On the financial assets side, a net accumulation of deposits with resident monetary financial institutions (2.4% of GDP) contrasts with the use of this instrument in the previous year (1.7% of GDP). In 2016 the accumulation of deposits was probably related to the need to finance the capital increase of Caixa Geral de Depósitos in early 2017.

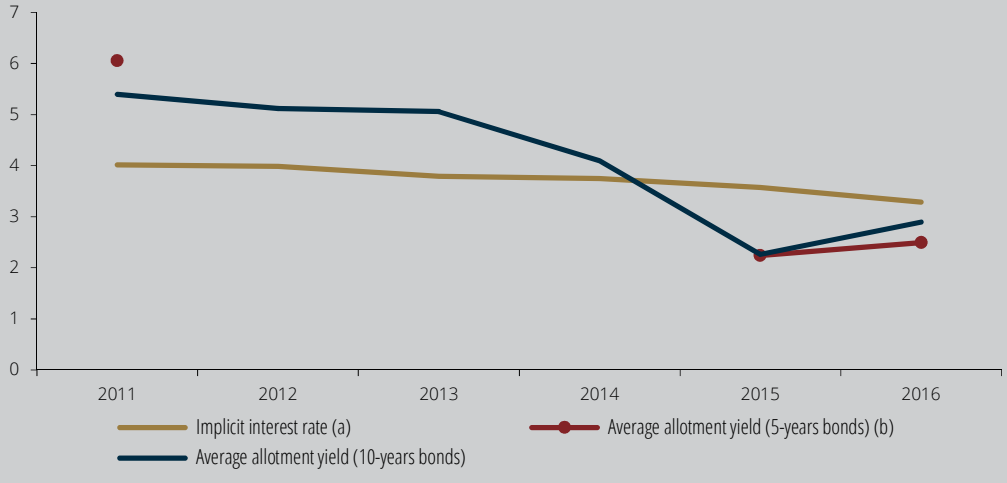


Chart 20 • Implicit interest rate on public debt and allotment yield on Treasury bonds | Per cent

Sources: Statistics Portugal, Portuguese Treasury and Debt Management Agency (IGCP) and Banco de Portugal calculations on the basis of information provided in Monthly Bulletins. Notes: (a) The implicit interest rate corresponds to the ratio of annual interest expense to the average stock of Maastricht debt in the year that ended in that period. Calculated on the basis of quarterly data. (b) Between 2012 and 2014 no five-year bonds were issued by the Portuguese State.

Since the end of the EFAP, the ratio of Portuguese public debt to GDP has been relatively stable, and continues to be among the highest in the euro area

At the end of 2016, Maastricht general government debt amounted to 130.4% of GDP, 1.4 p.p. more than in December 2015 (Chart 21), and is still among the highest in the euro area (Chart 22). Against a background where the primary fiscal balance helped reduce the debt ratio, this mainly reflected the net accumulation of central government deposits. Therefore, when considered net of central government deposits, the public debt-to-GDP ratio stood at 121.1% of GDP, 0.5 p.p. below that recorded at the end of 2015. As regards the value of deposits and its possible use for the early repayment of the IMF loan, the latest IMF Article IV Consultation Report emphasises the importance for Portugal to maintain a liquidity level that leaves room to deal with a potential deterioration in market financing conditions.[25]

Taking into account the time profile of public debt repayments, heavily concentrated over the next four years (Chart 23), and possible changes in the Eurosystem's public sector purchase programme at the end of 2017, the Portuguese public debt refinancing capacity will crucially hinge on investor confidence. As such, the continuation of the fiscal consolidation process and the implementation of reforms that promote a sustainable growth path is fundamental.

Chart 21 • Total general government debt | As a percentage of GDP

Sources: Statistics Portugal and Banco de Portugal.
Notes: End-of-period figures. Consolidated figures.

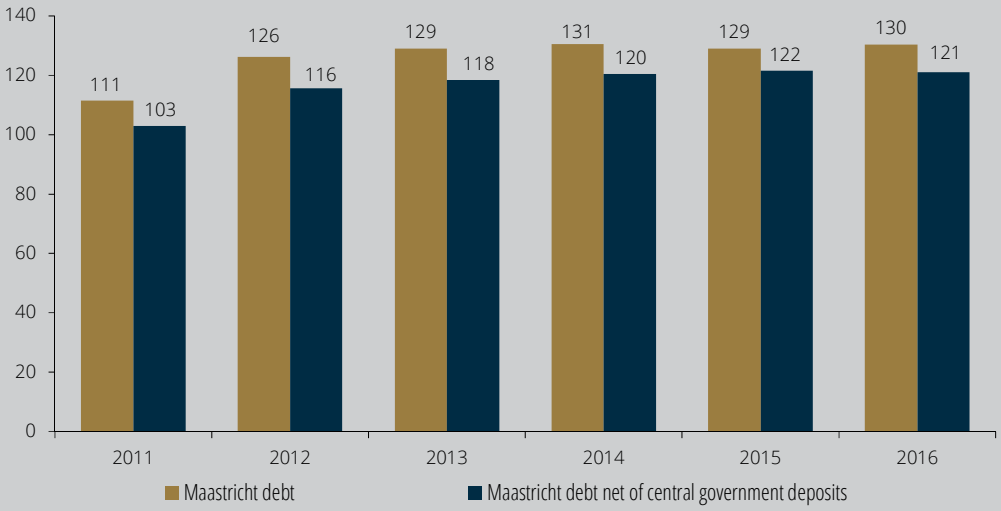
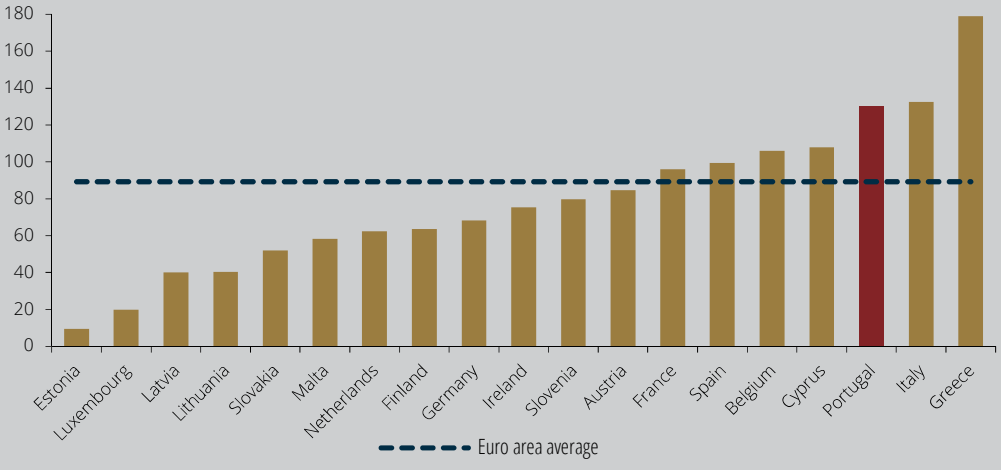


Chart 22 • Total general government debt in 2016 – international comparison | As a percentage of GDP

Source: Eurostat.
Note: Consolidated Maastricht general government debt.



2.4. Financial corporations

In 2016, net lending of financial corporations declined, reflecting a contraction in financial intermediation

Net lending of financial corporations decreased from 3.8% of GDP in 2015 to 2.2% of GDP in 2016 (Chart 24). This chiefly stemmed from the reduction in capital transfers, which in 2015 was largely associated with the resolution measure applied to BANIF at the end of the year (1.2% of GDP). The decrease in this sector's net lending in 2016 was also due, to a lesser extent, to the reduction in nominal gross value added (GVA) by 0.4 p.p. of GDP. The reduction in GVA of financial corporations has reflected the decline in financial intermediation, in a context of continued deleveraging in the banking sector, reduction in insurance activities and decrease in capital market transactions.[26] Although in 2016 the contribution made by the GVA of financial corporations to GDP was similar to that for the euro area as a whole, Portugal was among the countries where this contribution fell most substantially over the past few years (of 1.7 p.p. from 2011).

Financial savings[27] of financial corporations continued to be determined by financial savings of other monetary financial institutions[28] (OMFIs), even excluding the effect of capital transfers by the State, and by financial savings of other financial intermediaries and financial auxiliaries (OFIFAs) (Chart 25).

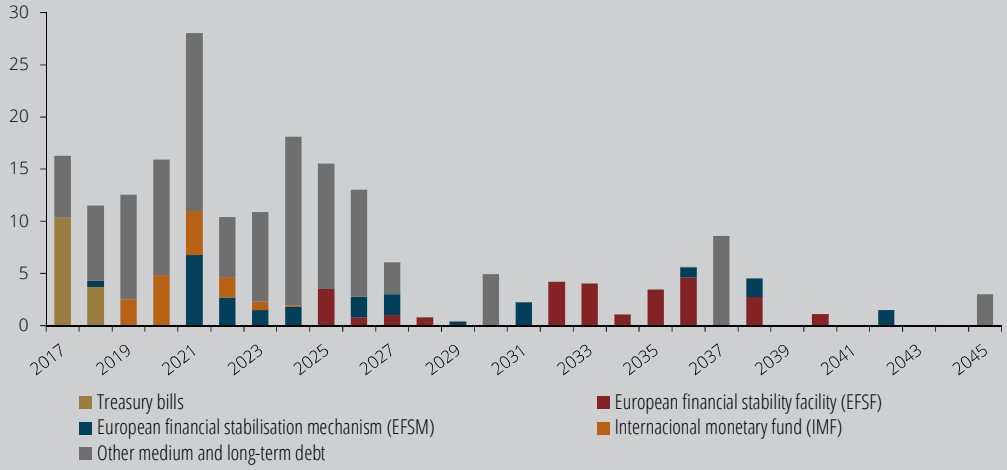
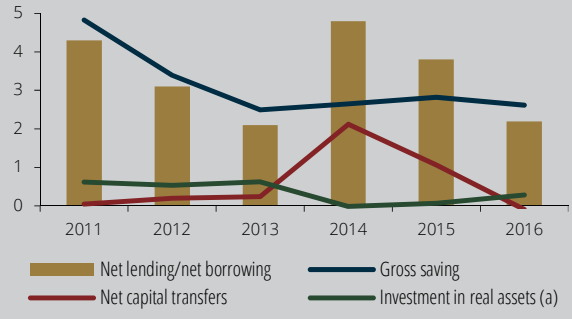


Chart 23 • Annual medium and long-term debt repayment schedule | EUR billions

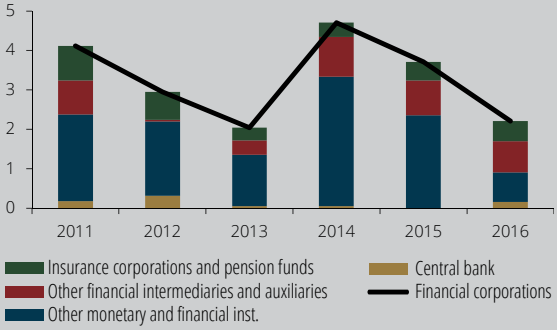
Source: Portuguese Treasury and Debt Management Agency.
Note: Debt outstanding as at April 2017.

Chart 24 • Savings, investment and net lending of financial corporations | As a percentage of GDP



Source: Statistics Portugal.
Note: (a) Corresponding 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 25 • Financial savings of financial corporations | As a percentage of GDP



Source: Banco de Portugal.

The financial activity of financial corporations in 2016 largely reflected Eurosystem operations and the continued deleveraging in the Portuguese economy

The increase in financial assets and liabilities of financial corporations in 2016, of 8.4% and 6.2% of GDP respectively, chiefly stemmed from Portugal's participation in the PSPP. This programme made it possible to channel resources from the Eurosystem to the central bank, which, in turn, purchased Portuguese debt securities and supranational debt securities to an amount of approximately 6.2% and 2.7% of GDP respectively. Gold swap operations conducted by the central bank also had a major impact on external assets of the central bank against external liabilities.

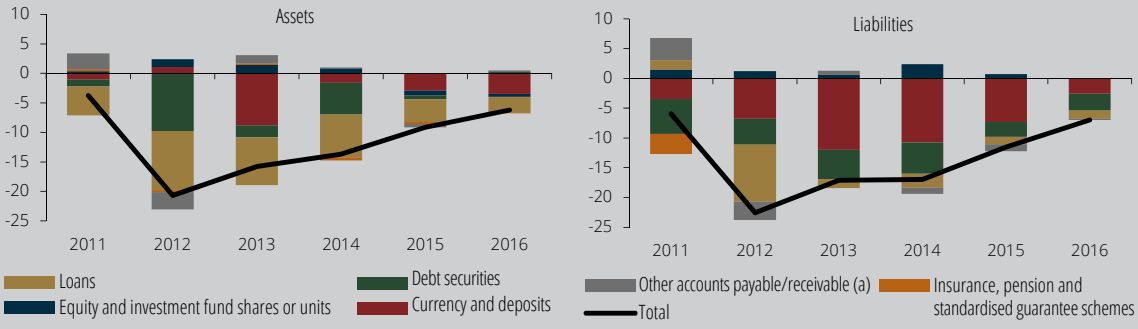
Conversely, OMFI financial assets and liabilities decreased (by 6.2% and 7.0% of GDP respectively), as a result of the continued deleveraging process in the Portuguese economy (Chart 26). This process moved forward, although more slowly than in previous years, with the net repayment of loans granted by OMFIs reaching 2.8% of GDP (3.8% in 2015), of which approximately 60% corresponded to loans granted to the non-financial private sector. OMFI liabilities were influenced by the repayment of debt securities previously held by insurance companies and non-resident entities (of 2.2% of GDP).

Similarly to the previous year, insurance companies' activities in 2016 were chiefly determined by the redemption of capitalisation products held by households. This disinvestment was reflected in a reduction in technical reserves of insurance companies and pension funds (1.0% of GDP), which was offset by a decline in deposits (1.4% of GDP), included in this sector's assets.

In 2016 there was a reduction in Interlinkages between entities in the financial sector and also an increase in the financial sector's exposure to sovereign risk

In 2016 inter-linkages between sub-sectors in the financial sector decreased, contributing to the mitigation of the contagion risk stemming from a potentially adverse event with impact on some entity of the financial sector. This reduction was chiefly due to the continued repayment of credit securitisations, of approximately 1.9% of GDP (regular and anticipated operations), to the redemption of

Chart 26 • OMFI financial assets and liabilities transactions | As a percentage of GDP



Source: Banco de Portugal.
Note: (a) Includes financial derivatives.

mutual fund units (0.3% of GDP) and to the change in the insurance companies portfolio.

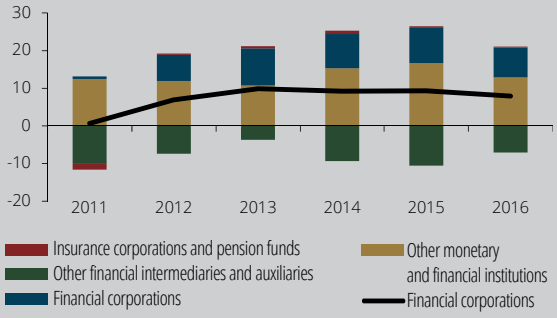
The exposure to real estate risk also declined as real estate funds in the financial system's portfolio decreased, amid substantial growth in housing prices. Conversely, the Portuguese financial system's exposure to Portuguese sovereign debt increased by 8 p.p. of GDP, to stand at 41% of GDP.

In spite of the financial savings generated over the year, the financial sector's financial wealth declined, largely influenced by the negative effect of price changes and write-offs (Chart 27).

The share of other financial intermediaries (excluding banks) in the Portuguese financial system is lower than in other euro area countries. In these countries (and, in general, at international level), the recent expansion of these institutions has warranted rising monitoring. Although developments in this sub-sector may provide new funding opportunities to the economy, it also carries possibly systemic risks, which would jeopardise the efficiency of current regulations.

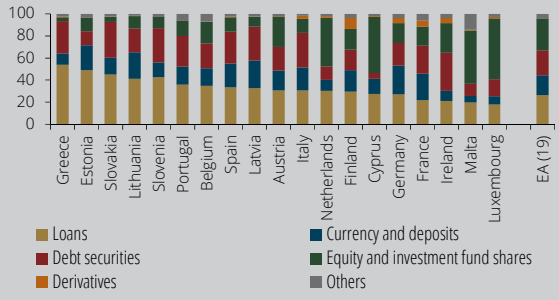
The composition of the financial wealth of the euro area financial sector's shows that in countries where shadow banking expanded, more specifically Luxembourg and Ireland, the funding to the economy is mostly done via securities and shares, accounting for 51% of the financial sector's total assets on average in the euro area, compared with 42% in Portugal (Chart 28). In these countries, the financial sector, to a large extent, also obtained funding in the form of shares and other equity (63% and 54% of assets in Luxembourg and Ireland respectively), compared with 32% in the euro area (around 17% in Portugal).

Chart 27 • Net financial wealth of the financial corporations | As a percentage of GDP



Source: Banco de Portugal.

Chart 28 • Composition of the financial corporations' financial wealth | As a percentage of assets



Source: European Central Bank.

Box 2 • Recent developments in the exposure of resident credit institutions to non-financial corporations

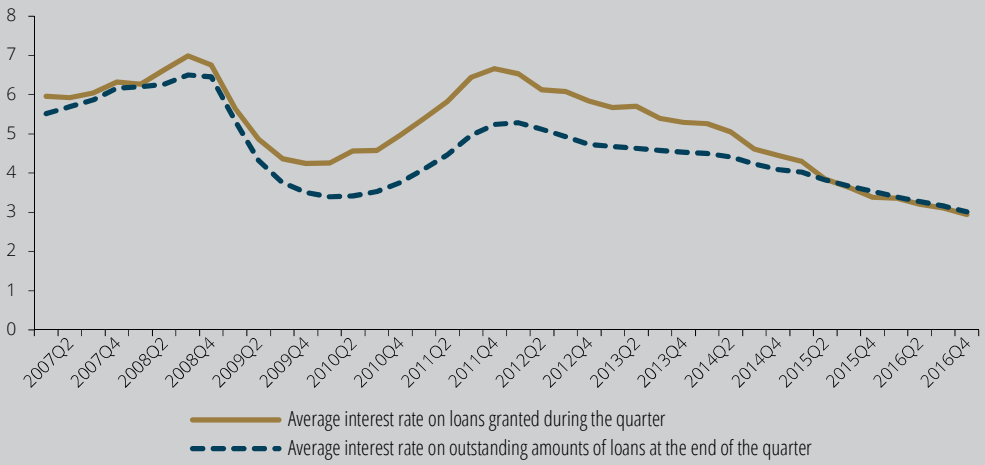
The stock of loans granted by resident credit institutions to non-financial corporations (NFCs) reached a peak in February 2010, and has since followed a downward path. By December 2016, that stock of loans had fallen by around 33 per cent, accounting, at the end of 2016, for 42 per cent of GDP (approximately 42 per cent of NFC financial debt). The developments seen in this period led to a reduction in the sector's leveraging, against an initial background of economic recession followed by a gradual upturn in economic activity. Historically, in Portugal and in the euro area the growth in loans to NFCs lags behind developments in economic activity, in contrast to household housing loans.[29] The reduction in NFC leveraging occurred simultaneously with a gradual easing of bank loan supply to NFCs after late 2012. Since mid-2015, however, according to the main Portuguese banks that participate in the bank lending survey, borrowing conditions for NFCs have remained virtually unchanged, despite a decline in interest rates on new bank loans and outstanding amounts of loans granted to this sector (Chart 1).

Against a background where the annual rate of change in loans granted by resident credit institutions to NFCs remains negative (-2.6 per cent in December 2016), this box analyses the extent to which NFC deleveraging has led to loan portfolio reallocation from resident credit institutions towards less risky NFCs. This analysis focuses solely on private NFCs (around 97% of total exposure to NFCs), given that lending to public NFCs may be determined by factors other than those taken into account in the case of private companies.

The data used in the analysis refer to outstanding amounts of loans recorded in the Central Credit Register (CCR) and individual financial information reported under the Simplified Corporate Information (Portuguese acronym: IES). The CCR covers loans granted by resident credit institutions, i.e. in addition to banks, savings banks and mutual agricultural credit banks, it includes loans granted by non-monetary financial institutions, namely credit financial institutions, credit-purchase financing companies, financial leasing companies, factoring companies and mutual guarantee companies. Loans granted by holding companies are not covered by the CCR.

The analysis of developments in loans granted to NFCs by sector of activity and their financial ratios suggests that the decrease in the financial sector's exposure has mostly affected companies with higher leverage, lower profitability ratio and lower capital ratios. As such, annual rates of change in bank loans are more negative for companies in the construction and real estate sectors, and less

Chart 1 • Interest rates on bank loans to non-financial corporations | Per cent



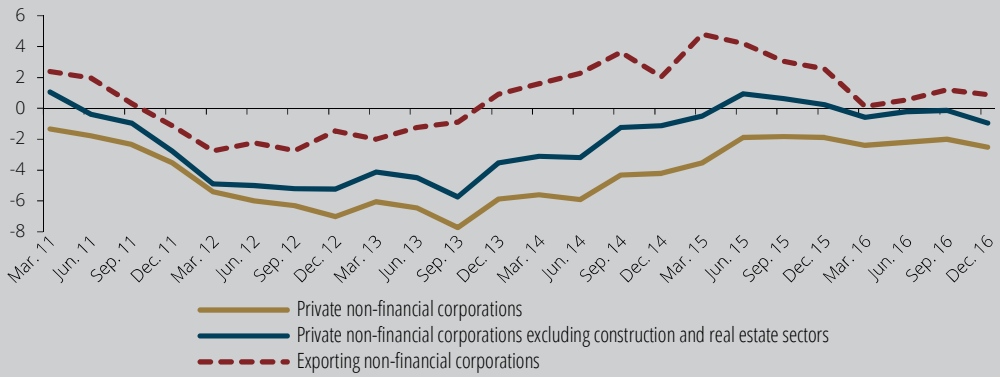
Source: Banco de Portugal.

negative in the case of companies in the trade and manufacturing sectors (Charts 2 and 3). Notably, the accommodation and food services activities sector posted positive growth at the end of 2016. The growth in the stock of loans to exporting companies has systematically exceeded total growth, even posting positive annual rates of change over the past two years. On average, exporting companies have better economic and financial indicators and a lower ratio of credit overdue than non-exporting companies.

To assess this trend at the micro level, NFCs exposed to resident credit institutions were broken down into quartiles, according to their credit risk class, measured by the z-score,[30] with the 1st quartile corresponding to companies with lower default risk and the 4th quartile to companies with higher default risk.

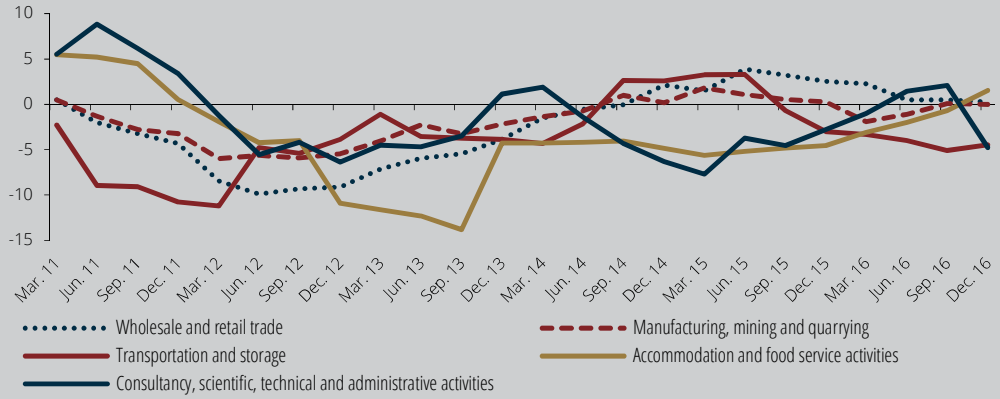
Results presented in Chart 4 show that loans granted to companies included in the higher-risk quartiles (3rd and 4th quartiles) contributed to the reduction in resident credit institutions' exposure to the NFC sector, given that the contribution to total changes in loans of companies in the two lower-risk quartiles has been positive since 2014.[31] Indeed, when looking into the rates of change in the stock of loans between 2013 and 2016, according to the z-score representing the risk quartile for companies in 2013, the distribution associated with lower-risk quartiles has a higher density in the right tail of the distribution, which means that companies in these quartiles have

Chart 2 • Loans granted by resident credit institutions to private non-financial corporations | Annual rate of change, per cent



Source: Banco de Portugal. | Note: Annual rates of change are calculated on the basis of the link between end-month positions and monthly transactions, adjusted for changes not due to financial transactions.

Chart 3 • Loans granted by resident credit institutions to private non-financial corporations, by sector of activity | Annual rate of change, per cent

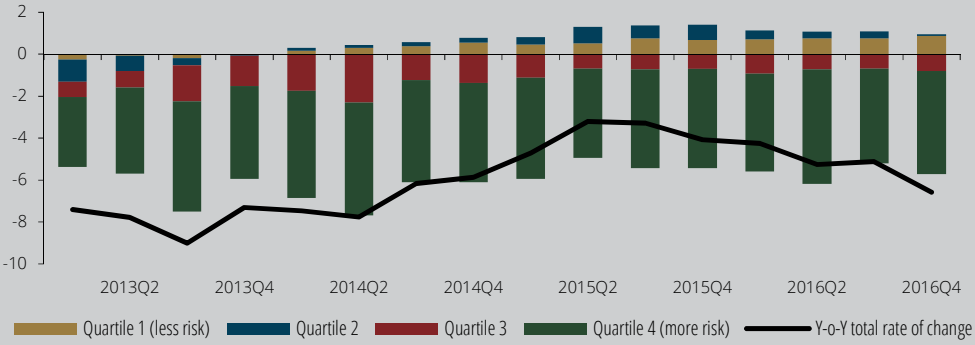


Source: Banco de Portugal. | Note: Annual rates of change are calculated on the basis of the link between end-month positions and monthly transactions, adjusted for changes not due to financial transactions.

benefited relatively more from new loans granted by resident credit institutions (Chart 5). In turn, companies in the 4th quartile are relatively more associated with negative rates of change. This indicates that the deleveraging process of resident credit institutions has mostly affected riskier companies. However, the share of resident credit institutions' exposure to NFCs in higher risk quartiles is still rather high, due to the high stock of credit underlying lending to these companies in the past (Table 1). Given that a number of companies failed to report information under the IES, it was not possible to allocate them a z-score representing the risk quartile. Nevertheless, the high credit overdue ratio associated with these companies (approximately 51 per cent) is an indication of the high risk that seems to be associated with this exposure.

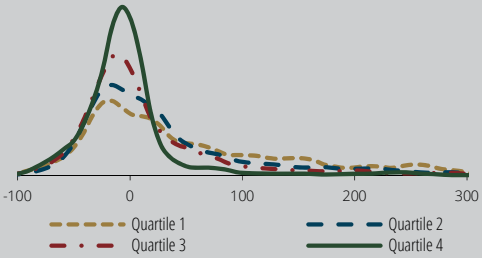
The growth in economic activity and the reduction in leveraging led to a decrease from 2013 in the average risk of Portuguese companies with performing loans.[32] If the benchmark thresholds in z-score quartiles are assumed to be constant, these developments would lead to an increase in the stock of loans associated with lower-risk quartiles to the detriment of the higher-risk quartiles.[33] However, even when controlling for this effect (looking into developments in the share of the stock of loans between 2013 and 2016 by z-score decile), there is a slight reallocation of resident credit institutions' portfolio towards less risky NFCs (small increase in the share of lower-risk deciles to the detriment of the higher-risk deciles) (Chart 6).

Chart 4 • Contributions to the year-on-year rate of change in the stock of loans to private non-financial corporations, by risk quartile | Per cent



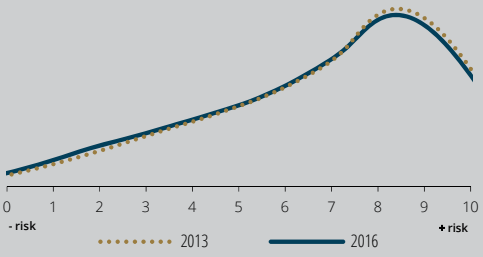
Source: Banco de Portugal. | Notes: The year-on-year rate of change in total loans granted to NFCs by resident credit institutions, published in the *Statistical Bulletin*, differs from the sum of contributions of loans taken into account in each quartile, given that it is impossible to allocate certain companies to a risk quartile as they have not reported information under the IES. Values for the year-on-year rate of change differ from those shown in Chart 2 (annual rate of change), given that the series have not been adjusted for reclassifications and write-offs.

Chart 5 • Distribution of rates of change in the stock of loans between 2013 and 2016, by z-score quartile for each company in 2013 | Per cent



Source: Banco de Portugal.
Notes: Kernel: Epanechnikov; Bandwidth=0.1. The distribution was truncated at 300 per cent.

Chart 6 • Distribution of the stock of loans | By z-score decile



Source: Banco de Portugal.
Notes: Kernel: Epanechnikov; Bandwidth=0.1. Stock of loans associated with companies with an estimated z-score.

Table 1 • Share in total loans and credit overdue ratio associated with each risk quartile
| Per cent

	Weight on the stock of loans granted to non-financial corporations (%)	Credit overdue ratio (%)
Quartile 1 (less risk)	6.3	0.9
Quartile 2	12.9	0.6
Quartile 3	21.4	2.3
Quartile 4 (more risk)	41.0	15.3
No quartile assigned	18.3	50.7

Source: Banco de Portugal.
Note: Share and credit overdue ratio at the end of 2016.

Notes

1. The balance of net lending/borrowing of the economy referred to in this section is that reported in institutional sector accounts released by Statistics Portugal. It differs from the parallel concept of the combined current and capital balance as measured by the balance of payments, due to methodological differences.

2. Measures included the 0.25 p.p. reduction in the key rate, to 0.25%, and the increase in the total value of the public sector purchase programme by £60 billion.

3. For more details on the envisaged measures see: Italian Banking Sector: Recent developments and reform and New measures for speeding up credit recovery: an initial analysis of Decree Law 59/2016.

4. The target for the monthly purchases of assets increased from €60 billion to €80 billion, the ceiling for purchases by securities issuance and issuers by euro area resident supranational entities increased from 33% to 50% and the set of eligible assets now includes investment grade corporate debt.

5. For more details, see the ECB press releases: Eurosystem introduces cash collateral for PSPP securities lending facilities and ECB adjusts parameters of its asset purchase programme (APP).

6. More specifically, through a reduction in taxes and an increase in investment in infrastructure.

7. See Chapter I. Vulnerabilities and risks.

8. The balance of external financial operations differs from the balance of net lending/borrowing of the economy due to methodological differences and statistical discrepancies.

9. This process is known as Macroeconomic Imbalance Procedure (MIP).

10. At the end of 2016, consumer confidence reached 17-year peaks: https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=274727301&DESTAQUESmodo=2.

11. See the Special Issue entitled "An interpretation of household saving rate developments in Portugal", *Economic Bulletin*, May 2016.

12. Financial debt includes loans and debt securities.

13. For more details on the Bank Lending Survey results: https://www.bportugal.pt/en/publications/banco-de-portugal/all/114.

14. For the purpose of this analysis, fixed-rate loans are those with an initial rate fixation period of over one year.

15. See the Special Issue entitled "Recent developments in consumer lending: A macroprudential approach", *Financial Stability Report*, November 2016.

16. Total debt includes loans, debt securities, trade credits and advances.

17. In Portuguese National Accounts, savings certificates and Treasury certificates are classified under the financial instrument 'currency and deposits'.

18. The profitability ratio was calculated as the percentage between EBITDA and equity plus obtained funding.

19. EBITDA corresponds to earnings before interest, taxes, depreciation and amortisation.

20. Classification of enterprise size based on Commission Recommendation 2003/361/EC of 6 May 2003: microenterprise: employs fewer than 10 persons and its annual turnover and/or annual balance sheet total does not exceed €2 million; small enterprise: employs fewer than 50 persons and its annual turnover and/or annual balance sheet total does not exceed €10 million; medium-sized enterprise: employs fewer than 250 persons and its annual turnover does not exceed €50 million or its annual balance sheet total does not exceed €43 million; large enterprise: other cases.

21. For more details on the z-score methodology, see Antunes, A. and Martinho, R. (2012), "A scoring model for Portuguese non-financial enterprises", *Financial Stability Report*, November 2012.

22. Overdue loans calculated under the Central Credit Register differ from the definition of 'non-performing loans' used in the next chapter. For more information, see the Special Issue entitled "Concepts used in the analysis of credit quality", *Financial Stability Report*, November 2016.

23. According to the definition adopted by the Eurosystem, temporary measures with an impact in 2016 include the revenue from full payments under the special programme for the reduction of debt to the State (Portuguese acronym: PERES) and the measure associated to the return by the European Financial Stability Facility (EFSF) of the fee paid by Portugal in one of the first tranches received under the EFAP. See also Banco de Portugal, *Economic Bulletin*, May 2017.

24. The loan granted by the IMF to Portugal under the EFAP is associated with an interest rate higher than average allotment yields of Portuguese Treasury bonds over the past two years, although currently they are at very similar levels. As such, the gradual replacement of the IMF loan with market financing has led to a decrease in interest expenses.

25. The IMF evaluation report on the Article IV is available at: http://www.imf.org/external/pubs/cat/longres.aspx?sk=44282.0.

26. The decline in production was only partly offset by a reduction in intermediate consumption.

27. Financial savings correspond to the calculation of net lending/borrowing of sectors on the basis of Financial Accounts calculated by Banco de Portugal, which means that it corresponds to the balance between total financial asset transactions and total liabilities transactions.

28. For more details on statistical sectors, see Box 1.3.1 entitled "Portuguese financial system: From the statistical classification to the prudential approach", *Financial Stability Report*, November 2013.

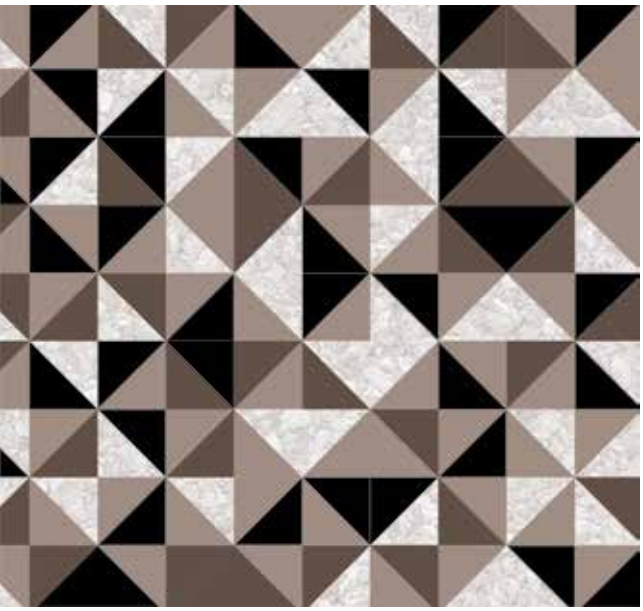
29. Castro, G. and Santos, C. (2010), "Bank interest rates and loan determinants", *Economic Bulletin*, Banco de Portugal.

30. For more details on the z-score methodology, see Antunes, A. and Martinho, R. (2012), "A scoring model for Portuguese non-financial enterprises", *Financial Stability Report*, May 2012.

31. Companies are allocated to z-score quartiles in the base year, with a constant sample for two consecutive years. As such, contributions to the year-on-year rate of change in the stock of loans are calculated on the basis of the assumption that the risk quartile for companies remains unchanged for two consecutive years. This exercise may reflect some survival bias, given that companies that cease their activities (when they stop reporting information under the IES and it becomes impossible to allocate them a z-score) will be removed from the sample.

32. For more details, see Banco de Portugal, *Economic Bulletin*, May 2017.

33. The z-score is a relative measure to assess corporate credit risk. For this reason, benchmark thresholds for quartiles are dynamic. Amid broad-based improvements in corporate credit risk, benchmark thresholds for quartiles have declined.



III
Banking sector

Box 3 • Banking supervision under the comprehensive strategy to address the high stock of NPLs

Summary

The Portuguese banking sector is in a better position today to carry out its primary activity of financial intermediation, taking an active role in the reallocation of resources in the economy, and consequently contributing to a sustained recovery of economic activity. The recent own funds strengthening operations and changes to governance in a number of institutions have contributed to the sector's resilience. However, a number of constraints and challenges remain. The uncertainty on the part of market agents regarding the quality of assets tends to affect banks' access to market funding. Conducting business in an environment of very low interest rates is challenging for banks, and should continue for some time. In addition, in a context of low profitability, the increasingly demanding regulatory framework places constraints on the activity of Portuguese banks.

In 2016 banking system assets continued to decrease, mainly reflecting a decline in the value of the portfolio of loans to customers and other credit institutions. Despite the reduction in the debt securities portfolio, its share in total assets increased slightly. As regards domestic activity, in spite of a slight increase in the share of Italian public debt securities, a very significant exposure to Portuguese public debt securities continues to be observed.

The financing structure remained on a path of adjustment, with the reinforcement of customer deposits as the main source of asset financing. As regards domestic activity, customer deposits increased, in particular household deposits. In 2016 central bank funding declined considerably to levels much lower than those observed during the Economic and Financial Assistance Programme (EFAP). Liquidity in the Portuguese banking system remained at comfortable levels, with the loan-to-deposit ratio and the commercial gap decreasing compared with 2015. In addition, the liquidity coverage ratio is above the regulatory minimum.

After posting a positive figure in 2015, banking sector profitability declined considerably in 2016, returning to a negative level. In a context of relatively stable net interest income, the reduction in commissions, the considerable decline in income from financial operations, and in particular the significant increase in impairments determined the negative developments seen in income. The increase in impairments was to a large extent due to a considerable flow of impairments for loans and other assets recorded by Caixa Geral de Depósitos, following an exercise to reassess the value of its assets. Nevertheless, the increase in impairment coverage provides favourable conditions for a faster reduction of non-productive assets. The operational efficiency of the banking sector remained virtually unchanged in 2016, reflecting similar reductions in gross income and operational costs, in particular staff costs. However, considering operational costs as a percentage of the aggregate of net interest income and net commissions, the level of efficiency has improved from the previous year.

Total non-performing loans (NPLs) declined in 2016, but remained very high. The strengthening of impairment recognition resulted in an increase in coverage ratios. The flow of written-off loans was considerable and contributed to the reduction of the total NPL ratio, in the context of a reduction in the loan portfolio.

In 2016 solvency levels declined, in aggregate terms, despite a high heterogeneity among institutions. These developments reflect to a large extent the deteriorating capital position of Caixa Geral de Depósitos at the end of the year. The decline in the CET 1 ratio is expected to have been reversed in the first quarter of 2017, following operations by Caixa Geral de Depósitos and Banco Comercial Português to strengthen their own funds. In 2016 low profitability, still negative in a number of banks, continued to limit their capacity to generate capital internally. Issues of AT1 and Tier 2 instruments remained at residual levels. Two medium-sized issues were made in the first quarter of 2017, one of Additional Tier 1 (AT1) instruments by Caixa Geral de Depósitos and the other of subordinated Tier 2 debt by Banco BPI.

In 2016 banking system assets continued the downward trend of the past few years

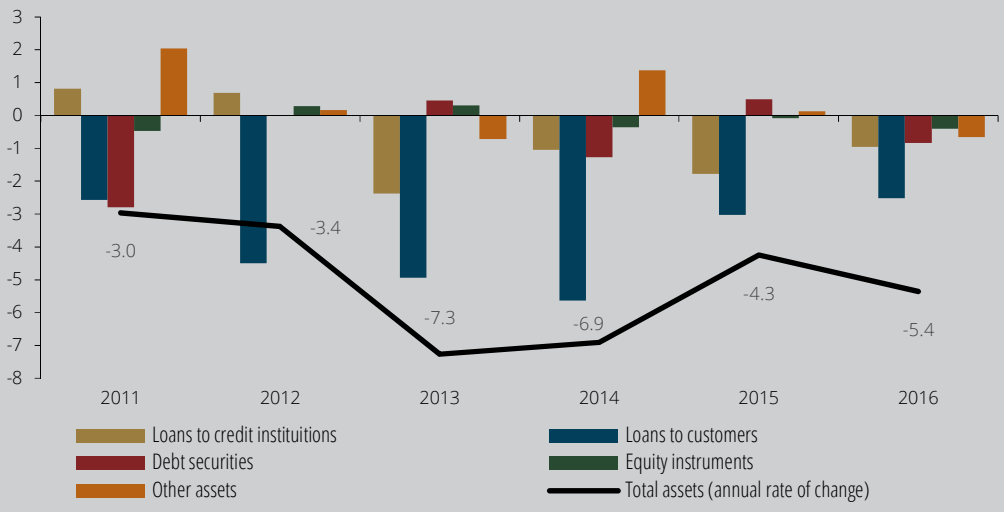
In 2016 the Portuguese banking system remained on the path of asset reduction that began in 2010 (5.4% decline from the end of 2015, Chart 1).[1] This was broadly-based across the main institutions in the banking system. However, in 2015 and 2016, a number of non-recurring events took place with an impact on the analysis of developments in the assets and the balance sheet structure of the banking system.[2] On a comparable basis, i.e. excluding the effect of these events, assets are expected to have declined by 4.8%. Since the end of 2010, the cumulative decline in total assets was 26.6%.

The reduction in banking system assets in 2016 reflects (by around 65%) a decrease in the value of the portfolio of loans to customers and other credit institutions. To a lesser extent, it also reflects a decline in claims and investments in central banks (19% of the change in assets) and the debt securities portfolio (16% of the change in assets). On a comparable basis, the declines in the loan portfolio and claims and investments in central banks remain the main factors behind the decrease in assets.

The banking system portfolio of loans to customers declined by around 4% in 2016. To a large extent, these developments are the result of a decline in loans to non-financial corporations (NFCs). As regards domestic activity, the decline in the loan portfolio was broadly-based across the non-financial corporation and household segments, despite the growth in loans to households for consumption and other purposes (Chart 2).

The debt securities portfolio declined by 4.6% in 2016, although its share in total assets increased by 0.2 p.p., to 18.5% of assets (Chart 3). In terms of issuer's institutional sector, the main changes were recorded in securities issued by central banks, general government and NFCs. Securities issued by central banks and general government contributed to the overall decrease of the portfolio by 1.6 p.p. and 3.4 p.p. respectively, while securities issued by NFCs offset the decrease, with a positive contribution of 1.9 p.p. On a comparable basis, the value of the debt securities portfolio increased slightly, owing to securities issued by the general government. As regards domestic activity, the public debt securities portfolio increased by 2.6% from 2015 and by 0.9%, considering only Portuguese public debt securities. Although these still account for the largest share of the total portfolio, Spanish and Italian public debt securities have gained

Chart 1 • Contributions to developments in assets
| Per cent and percentage points



Source: Banco de Portugal.
Note: The item Other assets includes cash and cash balances at central banks, cash balances at other credit institutions, derivatives, tangible and intangible assets and other assets.

importance in the past few years. A sensitivity analysis of the Common Equity Tier 1 (CET 1) ratio on the parallel increase of 1 p.p. in the yields of public debt securities issued by the euro area countries that were most affected by the sovereign debt crisis estimates an impact of around -0.4 p.p. on this ratio, on the basis of data for the end of 2016.[3] This exercise is particularly relevant considering that, in the last quarter of 2016, a prudential filter was removed on unrealised gains and losses on exposures to central governments classified in the accounting category of available-for-sale financial assets. However, this exercise does not take into account possible hedging operations which might mitigate this impact.

The weight of customer deposits in asset financing increased in 2016, while Eurosystem refinancing declined

In 2016 the asset financing structure remained on the path observed in the past few years, i.e. an increase in the weight of customer deposits in asset financing. This weight increased by 1.2 p.p., to 63.6% of total assets. In turn, the relative importance of funding through debt securities and Eurosystem refinancing declined by 1.4 p.p. and 0.6 p.p. respectively.

Although increasing in importance for asset financing, customer deposits decreased in

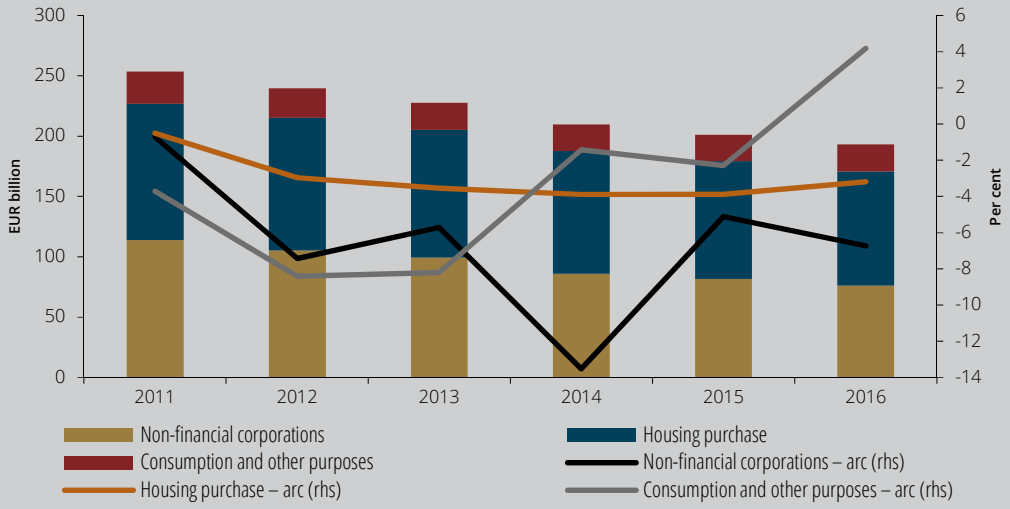


Chart 2 • Portfolio of loans to the non-financial private sector – domestic activity

Source: Banco de Portugal.
Note: Information from Instruction No 25/2014 of Banco de Portugal. End-of-period figures.

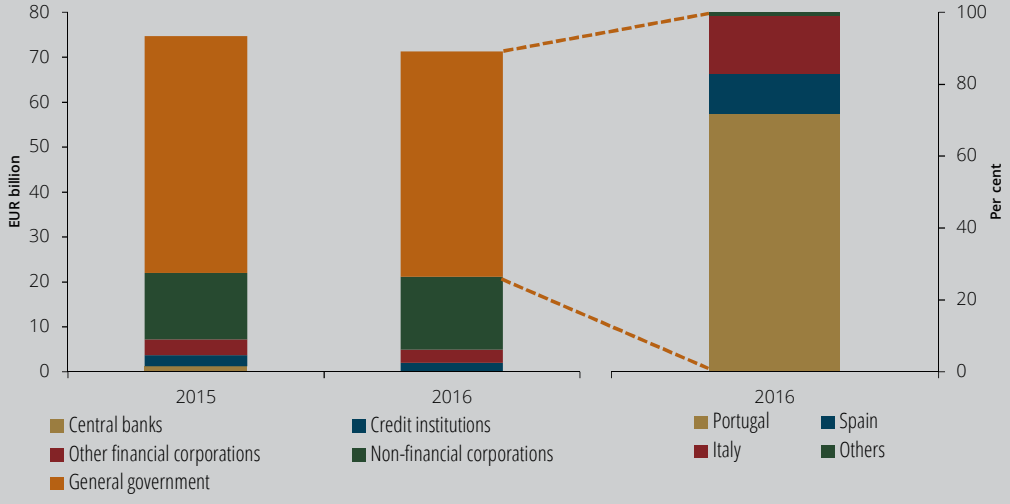


Chart 3 • Composition of the debt securities portfolio and the public debt securities portfolio

Source: Banco de Portugal.
Notes: The detail of the public debt securities portfolio (right-hand column) was obtained from Instruction No 25/2014 of Banco de Portugal. End-of-period figures.

2016. Adjusted for non-recurring effects, the decline in deposits stood at 0.6%. However, as regards domestic activity, customer deposits increased by 1.2% from 2015. By institutional sector, household deposits increased by 1.7% (€2.6 billion), and, in the opposite direction, general government deposits declined by €2 billion (Chart 4).

In 2016 the loan-to-deposit ratio declined by 0.6 p.p., standing at 95% (Chart 5). The decline was due to a decrease in loans to customers which was larger than the decline in deposits. This value in the ratio compares with the record high, of around 159%, observed in June 2010. The commercial gap (measured by the difference between loans to customers and customer deposits) also remained on a downward path, decreasing by around €1.2 billion from the end of 2015. On a comparable basis, the decline is even greater, with the decrease in loans to customers continuing to make the largest contribution to the decline in this gap.

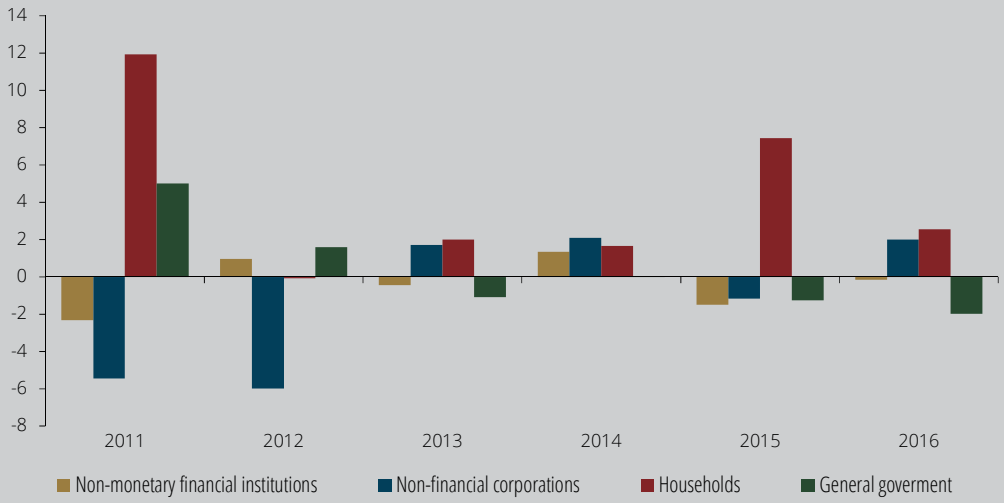
Central bank funding continued its downward trend, declining by 13.7% in 2016. These developments mainly reflected a decline in monetary policy operations with the Eurosystem. Compared with the record high of 2012 (during the EFAP), this source of financing decreased by 61.6%, accounting for 6.4% of assets, which compares with the 12.6% figure observed in June 2012.

Funding from other credit institutions, net of investments and claims in other credit institutions, increased by 12.6% in 2016 (an increase of €2.3 billion). This reflected a decrease in investments and claims on other credit institutions which was considerably higher than the decline in deposits in these institutions. The weight of this source of funding in assets, in net terms, increased by 0.8 p.p. in 2016, accounting for 5.5% of assets net of investments and claims on other credit institutions of the banking system.

In 2016 funding through debt securities declined by around €7 billion, accounting for 6.1% of assets (1.4 p.p. less than in 2015 and 12.7 p.p. less than in 2010, when it reached the highest level of the past years). This decrease, together with a decline in Eurosystem refinancing and an increase in customer deposits, continued the adjustment in the composition of asset financing. This has led to an increase in the importance of customer deposits and a decline in banks' exposure to international wholesale funding markets.

Chart 4 • Customer deposits – domestic activity | EUR billions

Source: Banco de Portugal.
Note: Information from Instruction No 25/2014 of Banco de Portugal. Figures shown correspond to changes in deposits from the previous year.



The liquidity of domestic banks remained at comfortable levels, in a context where assets used as collateral by Portuguese banks in Eurosystem monetary policy operations remained eligible

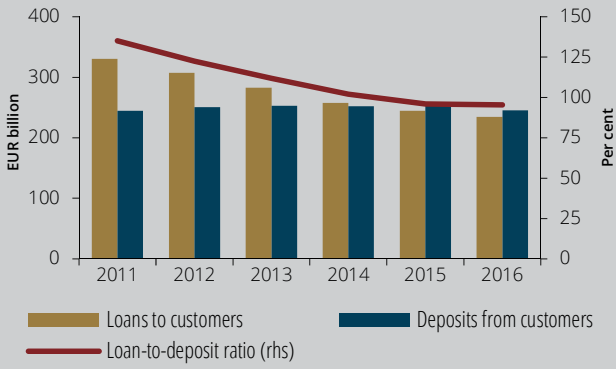
In 2016 liquidity gaps[4] declined slightly in all maturities under analysis, but remained high (Chart 6). Developments in liquidity gaps since 2011 have benefited from the structural adjustment in banks' liquidity (developments in the loan-to-deposit ratio) and changes to the framework and conduct of Eurosystem monetary policy, in a context where assets used as collateral by Portuguese banks in these operations remained eligible.

At the end of 2016, the Portuguese banking system had a liquidity coverage ratio of 154%, considerably above the regulatory minimum of 70%.[5] This requires banks to hold a minimum buffer of assets of high or extremely high liquidity and credit quality,[6] in order to meet the amount of net cash outflows for a 30 day stress scenario.[7] The liquidity coverage ratio of other systemically important institutions (O-SII)[8] ranged from 107% to 177% at the end of 2016, exceeding the minimum requirement of 100%, applicable from 1 January 2018 onwards.

The banking system posted losses in 2016, reflecting the situation of a significant number of institutions

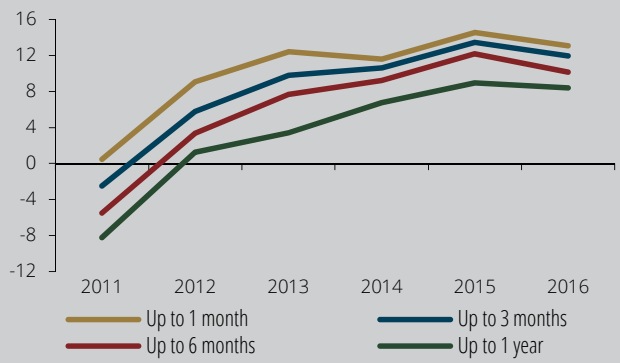
In 2016 the profitability of the banking system declined considerably from the previous year, returning to negative territory, despite the positive figure recorded in the first three quarters of the year (Chart 7). These developments are robust to the consideration of the previously mentioned non-recurring events. These events affect the analysis of the main components in the profit and loss account on a consolidated basis, as part of income and expenses for the year was recorded in Income from discontinued operations. Nevertheless, the reduction in profitability was mainly determined by a very considerable increase in impairments and provisions. This increase, amounting to more than €2.6 billion, was mostly due to a recognition of credit impairments and provisions, predominantly in the last quarter of the year, in particular by Caixa Geral de Depósitos. These developments reflected an asset portfolio reassessment, with reference to 30 June 2016, using the criteria and assumptions of a significant private investor, in accordance with EU rules on state aid. The criteria used reflected the objective

Chart 5 • Loan-to-deposit ratio



Source: Banco de Portugal.
Note: End-of-period figures.

Chart 6 • Liquidity gaps of domestic institutions in a cumulative maturity ladder | Per cent



Source: Banco de Portugal.
Notes: Liquidity gaps are assessed as a percentage of total assets less net assets.
Information from Instruction No 13/2009 of Banco de Portugal. End-of-period figures.

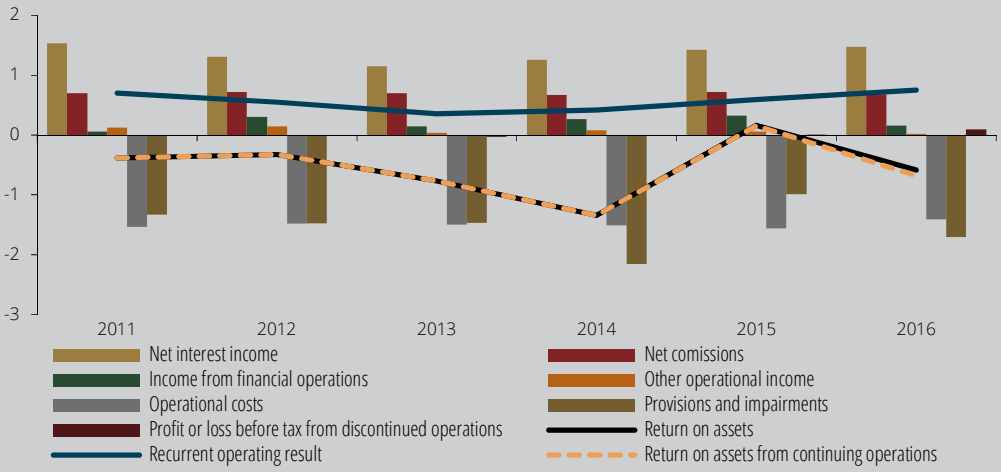
of reducing the levels of NPLs, assuming an objective of a faster deleveraging for this type of assets.[9]

Excluding income from discontinued operations, recurrent operational profit and loss (comprising the aggregate of net interest income plus net commissions less operational costs), as a percentage of assets, increased in 2016, but was insufficient to offset developments in impairments.

Amid a decrease in assets, the drop in profitability in 2016 was broadly-based across a large set of relevant institutions in the Portuguese banking system, resulting in a shift in the distribution of return-on-assets ratios to the left, compared with the previous year (Chart 8).

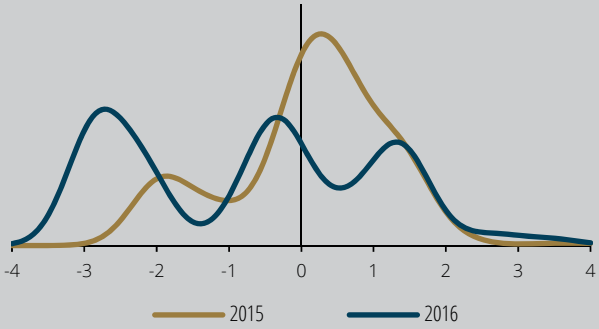
Although the low levels of profitability in the banking sector remain one of the main challenges for a broad set of euro area countries, the profitability of the Portuguese banking system continued to present an unfavourable relative position in the first three quarters of 2016 (Chart 9). The high costs incurred in the last quarter with the recognition of impairments and provisions associated with the high level of non-performing assets point to the relative position of Portugal remaining broadly the same for the year as whole.

Chart 7 • Contributions to ROA | Per cent and percentage points



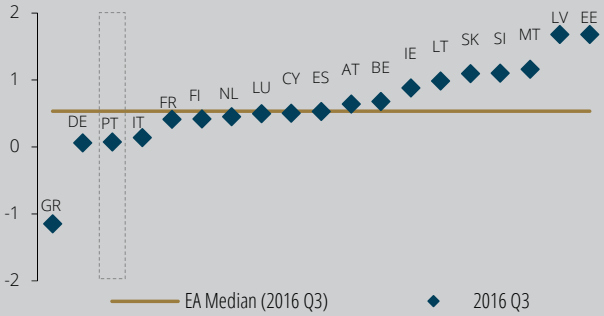
Source: Banco de Portugal.
Notes: Recurrent operating result corresponds to the aggregate of net interest income and net commissions less operational costs, as a percentage of average assets. Return on assets is computed considering income before taxes and minority interests.

Chart 8 • ROA distribution



Source: Banco de Portugal.
Notes: Empirical distribution using a Gaussian kernel in which institutions are weighted by total assets. Return on assets is computed considering income before taxes and minority interests.

Chart 9 • International comparison of ROA | Per cent



Source: European Central Bank (Consolidated Banking Data).
Note: Return on assets is computed considering the annualised result of the first three quarters of 2016 (latest data available), weighted by the average of assets for that period.

Within a context of relative stability in net interest income, gross income was affected by a strong decline in income from financial operations, traditionally characterised by high volatility

In 2016, excluding income from discontinued operations, net interest income of Portuguese banks remained relatively stable compared with the previous year, following similar decreases in interest received and interest expenses. Consequently, its contribution to profitability increased slightly. However, there were positive developments in net interest income from domestic activity, as observed since 2013.

The decrease in interest received reflects negative developments in interest from operations with customers and, to a lesser extent, interest from the portfolio of securities and derivatives, particularly the reduction in the implied interest rate on sovereign debt securities. Interest generation from operations with customers continued to be affected by a decline in the volume of credit, within the process of reducing private sector indebtedness, and a reduction in the implied interest rate on loans. In turn, the decline in interest expenses is a result of lower funding costs for banks with liabilities represented by debt securities, and, above all, with deposits (benefiting from the growing share of demand deposits in total deposits). The decline in the implied interest rate on customer deposits, together with the adjustment in the financing structure of the banking sector, which increasingly relies on this instrument to the detriment of (market) securities, led to a decline in funding costs, continuing the trend that had started in 2012.

As regards domestic activity, the spread on operations with resident customers increased slightly in 2016, reflecting a decline of the average cost of deposits that was marginally higher than the reduction in the interest rate on outstanding amounts of loans to the resident non-financial private sector (Chart 10). Interest rates on stocks of loans and deposits declined by 31 and 41 basis points, respectively, from the end of 2015. The dynamics of contraction in the average cost of deposits from NFCs and households observed in the past few years stems from the fact that new deposit operations have interest rates which are, on average, below those outstanding in the balance sheet. In 2016 the cost of new deposits from households and NFCs declined by 37 and 21 basis points respectively.

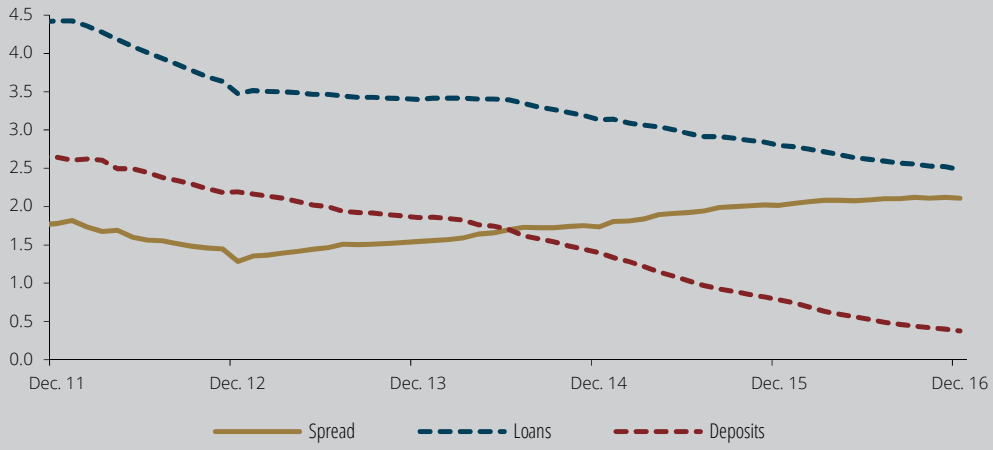


Chart 10 • Interest rates in operations with euro area resident customers (outstanding amounts)
| Per cent

Source: Banco de Portugal.
Notes: The spread corresponds to the difference between the average interest rate on the outstanding amount of loans to the non-financial private sector and the average cost of the outstanding amount of deposits. Information from Instruction No 25/2014 of Banco de Portugal.

The increase in the spread on operations with resident customers was substantially lower than the increases observed in the past few years. Consequently, the continued recovery in net interest income is expected to be mainly supported by a positive volume effect.

Looking forward, developments in net interest income are expected to depend, inter alia, on the consolidation of the economic recovery and therefore on the expenditure decisions of households and firms, to the extent that these have an impact on the volume of credit granted, namely for investment purposes, and, consequently, on interest income. Improved economic conditions may also help reallocate resources (credit) to sectors with greater growth potential and value creation, and therefore also favour net interest income. In addition, new flows of credit arising from the stronger momentum in economic activity may help increase the implied rate on loans, to the extent that they allow a repricing of the banks' credit portfolio, particularly of loans for house purchase.

Income from services and commissions and, in particular, income from financial operations penalised developments in profitability in 2016, with their contribution to return on assets declining from 2015, by 0.05 p.p. and 0.16 p.p. respectively (to 0.68 p.p. and 0.16 p.p. of assets). The former was also influenced by a decline in the volume of banking operations, arising from the sector's deleveraging process, although this effect may have been partly offset by an increase in the commission base. Looking forward, the evolution of income from services and commissions may be affected by regulatory developments – which are expected initially to typify the concept of banking service that may be subject to commissioning – and an increase in competitive pressures due to the entry of players with commissioning policies that are less costly for customers.

Income from financial operations declined considerably from 2015, largely due to a decline in net gains on the sale of Portuguese public debt, which were very significant in 2015, specifically during the first half of the year, as explained in the *Financial Stability Report* of November 2016. In addition, considering the current interest rate levels, the contribution of income from financial operations to return on assets is not expected to reach levels in line with those of 2014 and 2015 on a recurring basis (i.e. 0.27 p.p. and 0.33 p.p. of assets respectively).

Operational costs declined more markedly than in previous years

The cost reduction process of the Portuguese banking system continued in 2016, accelerating from previous years, particularly in the case of staff costs. This item, which accounts for 53% of total operational costs, declined by around 17% in 2016, making a greater contribution to the improvement in profitability compared with 2015. The non-recurring events mentioned before and the completion of the revision of the *Acordo Coletivo de Trabalho* (collective labour agreement) made a significant contribution to this decline. The main amendments to the agreement were related to the retirement age, seniority bonuses and contributions to the health subsystem of employees covered by this agreement.

In 2016 the contribution of operational costs to return on assets recorded the highest (least negative) figure since the first quarter of 2013, which shows that most institutions have made efforts to rationalise costs, specifically with regard to the resizing of branch network and the reduction of the number of employees (for more details, see Special Issue 1 "Profitability of the Portuguese banking system – determinants and prospects"). Despite favourable developments in costs, the decline in gross income led the cost to income ratio to remain virtually unchanged at around 60% (Chart 11). However, excluding the non-recurring items of gross income, i.e. only taking into account the aggregate of net interest income and net commissions to calculate the ratio, an improvement can be seen in the

levels of operational efficiency compared with the previous year, translating into a decline of more than 7 p.p. in the recurrent cost-to-income ratio.

The reduction in staff costs was broadly-based across a number of institutions, with the distribution of staff costs as a percentage of assets shifting to the left in 2016 (Chart 12). This movement followed developments observed since 2011, in relation to which total assets in the banking system have declined by around 24%, showing a significant adjustment, particularly in institutions with higher staff costs as a percentage of assets. This behaviour is expected to last, given that the restructuring processes carried out by some of the larger institutions in the system have not yet been completed.

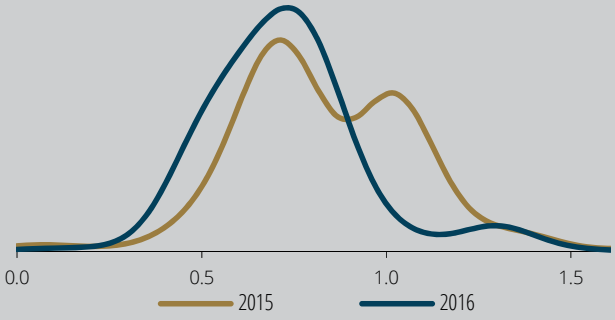
In addition, taking into account data for the third quarter of the year, the cost-to-income ratio of the Portuguese banking sector stood slightly above the median for the euro area countries (Chart 13), maintaining its relative position compared with the same period of the previous year.

Impairments increased sharply, particularly in the last quarter of the year, in order to meet the high level of non-performing assets

Chart 11 • Cost-to-Income

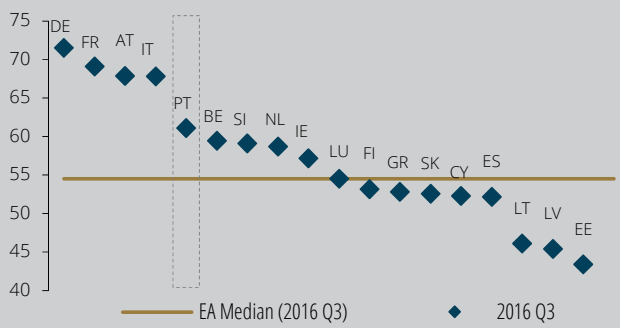
Source: Banco de Portugal.
Note: The recurring cost-to-income ratio corresponds to operational costs as a percentage of the aggregate of net interest income and net commissions.

Chart 12 • Distribution of staff costs | Per cent of total assets



Source: Banco de Portugal.
Note: Empirical distribution using a Gaussian kernel in which institutions are weighted by total assets.

Chart 13 • International comparison of the cost-to-income ratio | Per cent



Source: European Central Bank (Consolidated Banking Data).
Note: Figures refer to the third quarter of 2016 (latest available data).

Total costs with impairments and provisions increased by 64% in 2016, compared with 2015, amounting to around 1.8% of assets. This behaviour reflects growth in impairments and provisions not related to credit and, in particular, an increase in the flow of credit impairments, which, together with a decline in gross loans, led to a marked increase in the cost of risk, by around 0.65 p.p. of total loans (Chart 14). Up to the third quarter of the year, both impairment flows and the cost of risk posted figures in line with those of the previous year. Annual developments in these variables therefore mirror, to a large extent, the high flow of impairments and provisions, particularly for credit, recorded in the last quarter of the year by Caixa Geral de Depósitos. Under the recapitalisation plan agreed with the European Commission, this institution reassessed the value of its assets and potential contingencies, as mentioned before.

The increase in the impairment coverage from this measure is a first step towards promoting a reduction in the stock of non-performing assets.[10] This reduction is important to the extent that the high volume of these assets penalises banks' profitability both due to a loss of income in contracts of defaulted loans and to the recognition of impairment losses on these assets. In addition, it negatively affects access and financing costs of banks in international financial markets. Indeed, considering the uncertainty in the composition and valuation of these assets, investors tend to require a higher risk premium from institutions with higher volumes of non-performing assets. By maintaining these assets on their balance sheets, banks also incur significant opportunity costs, both with the personnel and financial resources allocated to their management and the regulatory capital assigned to these exposures. For more details, see Financial stability: Vulnerabilities and risks.

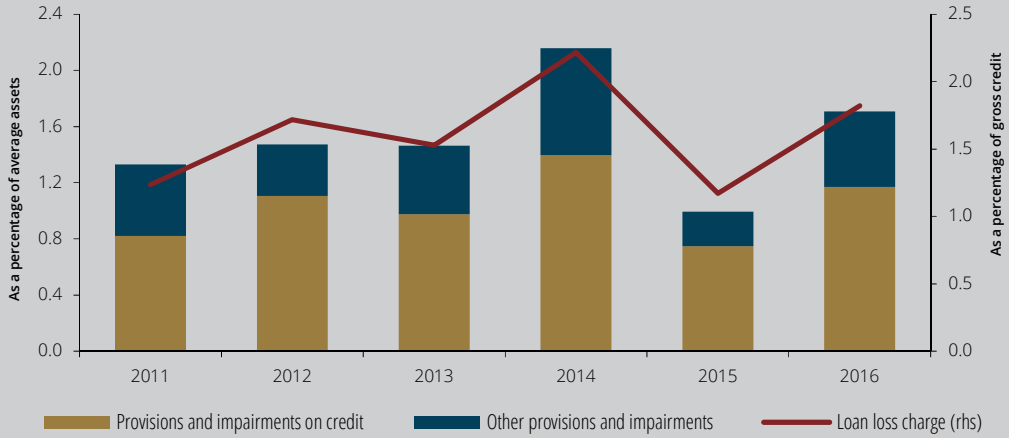
In 2016 impairment coverage of NPLs increased, within the context of a virtual stabilisation in the total NPL ratio

NPLs of the Portuguese banking system, in accordance with the definition proposed by the European Banking Authority (EBA), remain at very high levels, in aggregate terms, despite some heterogeneity among institutions. Indeed, since the start of 2011, the materialisation of credit risk increased considerably, particularly in loans to NFCs.

In 2016 total NPLs decreased by 7%, which, within the context of a decrease in the loan portfolio, resulted in an NPL ratio of 17.2% at the end of the

Chart 14 • Flow of impairments and the loan loss charge

Source: Banco de Portugal.
Note: The loan loss charge corresponds to the flow of credit impairments and provisions as a percentage of total gross loans granted to customers.



year (declining by 0.3 p.p. from the end of 2015, Chart 15).[11] The volume of written-off loans was considerable, and its contribution to the decrease in the NPL ratio was higher than the denominator effect, which contributed to the increase in the ratio, as in previous years. The flow of write-offs was quite high in historical terms, in particular for NFCs (Chart 16). These developments took place within the context of a new understanding on the part of the Tax and Customs Authority on the conditions needed to derecognise irrecoverable claims.[12] The strengthening of impairment recognition among the largest Portuguese banks led to a decrease of 1 p.p., to 9.4%, in the NPL ratio net of impairments, at the end of 2016.

The volume of NPLs of non-financial corporations, accounting for around 65% of total NPLs, declined by 5.8% in 2016. Their NPL ratio increased by 1.1 p.p., to 29.4%, at the end of the year, reflecting a decline in the loan portfolio. In turn, the net NPL ratio declined by 0.6 p.p., to 15.1%. At the end of 2016, impairment coverage of the NPL portfolio of non-financial corporations amounted to 49% (Chart 17, 44% in 2015). This indicator is rather heterogeneous for individual banks, ranging from 40% to 60%, approximately, in the case of O-SII (Chart 18).

Impairment recognition for the NPL portfolio is related to the value of associated guarantees (collateral and financial guarantees),[13] which accounted for 36% of NPLs of non-financial corporations at the end of 2016.[14] The relative position of institutions in terms of the impairment coverage ratio tends to be the

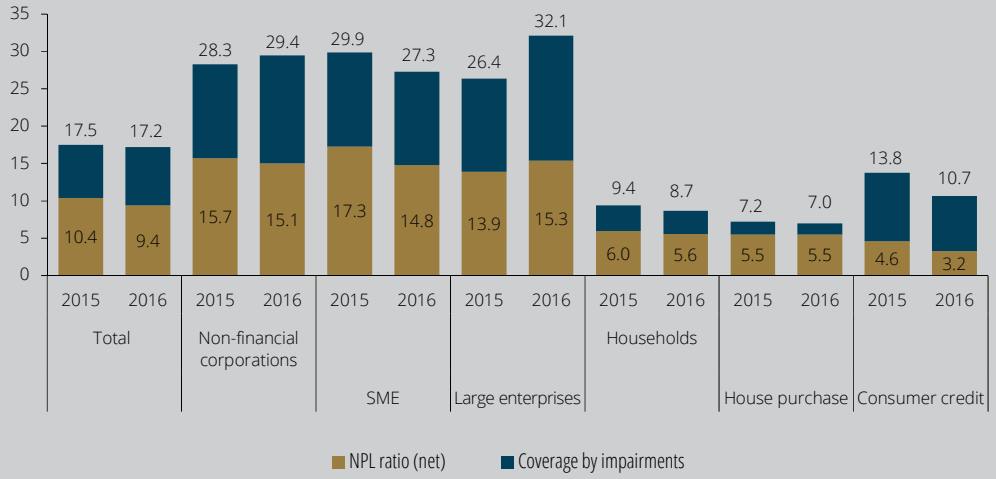


Chart 15 • NPL ratio | Per cent

Source: Banco de Portugal.
Note: End-of-period figures. NPL according to the definition proposed by the EBA.

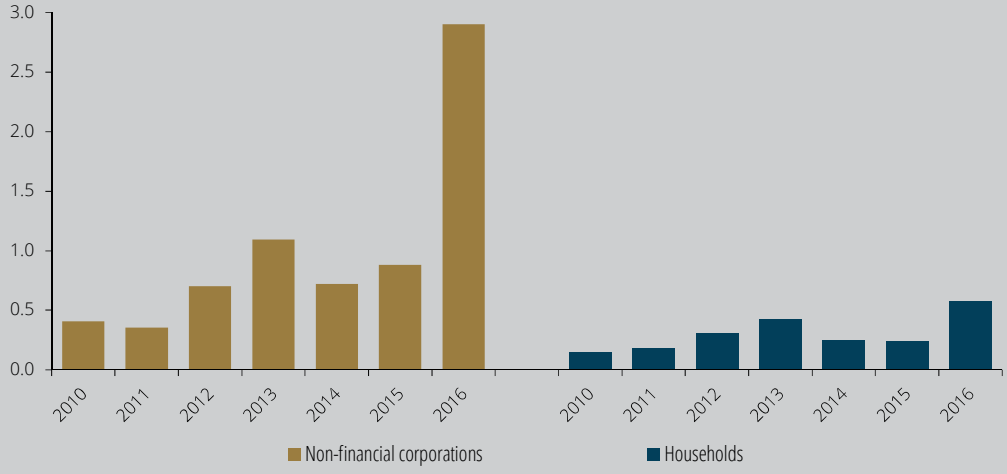


Chart 16 • Written-off loans | Per cent

Source: Banco de Portugal.
Note: Annual flow of written-off loans as a percentage of the outstanding amount of loans at the end of the previous year.

opposite of the relative position in terms of collateralisation. Consequently, considering a more encompassing NPL coverage indicator, which, in addition to impairment recognition, includes the value of associated guarantees, there is less heterogeneity among institutions.

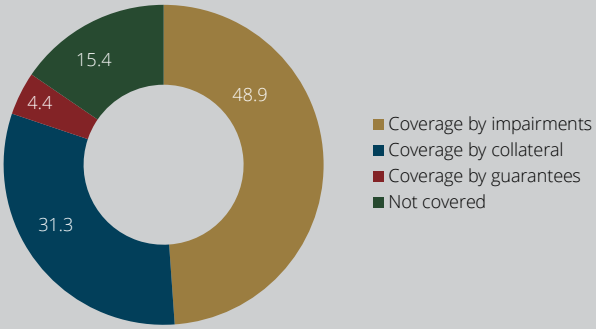
At the end of 2016, the component not provisioned or without associated guarantees accounted for 15% of the NPL portfolio of non-financial corporations. For this residual share, banks may recover their credit by, inter alia, selling the loan, or, in the extreme case of insolvency on the part of the debtor, through an assessment of the insolvent estate and the satisfaction of creditor claims in accordance with their hierarchy.

The materialisation of credit risk in loans to households was rather more contained since the start of the crisis, reflecting the fact that interest rates on a considerable number of loans to this sector are indexed to money market reference rates, thus benefiting fully and quickly from the considerable reduction in Eurosystem official interest rates. In 2016 the NPL ratio of the household segment declined by 0.7 p.p., to 8.7% (7.0% for loans for house purchase, 10.7% for consumer loans). Impairment coverage exhibited contrasting developments in loans for house purchase and consumer loans. In loans for house purchase, the coverage ratio declined, owing, inter alia, to considerable loan write-offs (with very high impairment coverage ratios) and upward developments in residential real estate prices with an impact on the value of collateral. In consumer loans, the coverage increased. This is the loan segment with the highest impairment coverage, given that associated guarantees are typically residual, in contrast with loans for house purchase. At the end of 2016, the NPL ratio net of impairments reached 5.5% and 3.2%, respectively, in loans for house purchase and consumer loans.

As mentioned in the *Financial Stability Report* of November 2016, the difference between the value of NPLs and credit at risk is mostly justified by loans without past-due instalments or interest, or loans which are past due for less than 90 days, but in relation to which the debtor is assessed as unlikely to pay its credit obligations in full. The practice to be followed when identifying this component should take into account a (contamination) approach at the debtor and/or group level (in the case of NFCs), whenever justified, and not just an identification for each individual credit. Reflecting weaker evidence of potential loss, impairment coverage in this set of exposures is lower than in the remaining NPL portfolio. This component accounted for approximately 40% of total NPLs at the end of 2016.

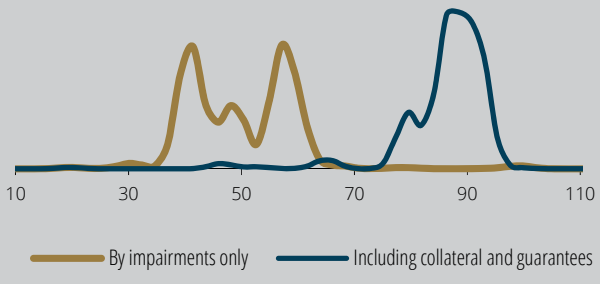
In the past few years, there has been a

Chart 17 • Breakdown of the NPL portfolio of non-financial corporations – December 2016
| Per cent



Source: Banco de Portugal.
Note: NPL according to the definition proposed by the EBA.

Chart 18 • Distribution of NPL coverage ratios of non-financial corporations – December 2016
| Per cent



Source: Banco de Portugal.
Notes: Empirical distribution using a Gaussian kernel in which institutions are weighted by assets. NPL according to the definition proposed by the EBA.

considerable effort to harmonise metrics used for asset quality evaluation at international level, both by authorities with regulatory and supervisory competency and by reporting institutions. To the extent that there are NPL components which do not merely depend on quantitative criteria, but also on an analysis which is more qualitative and comprehensive of the credit profile of debtors, the harmonising effort should continue both in the definition of metrics and their implementation. In April 2017, the Basel Committee published a set of guidelines on the treatment of problem assets, including those relating to the identification of NPLs. In particular, for the unlikely-to-pay component, the guidelines list a number of financial indicators and qualitative aspects which banks must take into account when assessing the likelihood of repayment.[15] These guidelines move in the same direction as the work carried out by the EBA, under Regulation (EU) No 575/2013 (Capital Requirement Regulation – CRR), towards harmonising the definitions of NPLs, default and other related concepts.

The decline in solvency levels, in aggregate terms, in 2016 was not broadly-based across most institutions

At the end of 2016, the CET 1 ratio of the banking sector, when the transitional provisions set out in the CRR are applied, stood at 11.4%, 0.9 p.p. less than the figure observed at the end of 2015 (Chart 19). Nevertheless, during the course of 2017, Caixa Geral de Depósitos and Banco Comercial Português conducted operations to strengthen their own funds, with an estimated impact of 1.4 p.p. in the aggregate CET 1 ratio. Consequently, the reduction seen in 2016 was temporary.

In 2016 developments in the CET 1 ratio were fairly heterogeneous among the main institutions, with changes in the banking system aggregate considerably affected by developments in the capital position of Caixa Geral de Depósitos. The heterogeneity of capital adequacy levels is partly justified by the heterogeneity in their requirements, particularly the Pillar 2 requirements, which are specific to each institution. From 1 January 2018, the buffer requirements applicable to O-SII will be an additional factor of heterogeneity.

The gradual phasing out of transitional provisions laid down in the CRR and Directive (EU) 2013/36 (Capital Requirements Directive – CRD IV), allowing for a gradual adjustment to the new regulatory requirements, has put pressure on banks towards a reduction in their capital adequacy ratios. In particular, changes to provisions applicable from 1 January 2016

Chart 19 • CET 1 ratio | Per cent

Source: Banco de Portugal.
Note: The component Other includes, inter alia, revaluation reserves of assets at fair value, actuarial gains on defined benefit pension funds and CET 1 adjustments arising from the application of transitional provisions set out in the CRR, including provisions on national options and discretions. Red bars correspond to contributions to a decrease in the ratio. Blue bars correspond to contributions to an increase in the ratio.

have implied, by themselves, a decline in the CET 1 ratio, estimated at 0.3 p.p. for the set of the seven largest banking institutions operating in Portugal.

Negative developments in the own funds of the banking sector in 2016 reflect, to a large extent, its low profitability, which remains negative in a number of institutions (even if reflecting exceptional events). This situation continues to limit institutions' capacity to generate capital internally. The other comprehensive income component also made a negative contribution to these developments, in particular due to the revaluation of fair value reserves in the portfolio of available-for-sale assets and a decline in actuarial gains on defined benefit pension funds for bank employees. In the first case, the decline in fair value takes on greater importance with the entry into force of Regulation (EU) 2016/445 of the European Central Bank, in October 2016, and Commission Regulation (EU) 2016/2067, which removed the prudential filter applicable to unrealised gains and losses on exposures to central governments classified in the accounting category of available-for-sale financial assets, that are now covered by transitional provisions applicable to the other fair value assets.[16] This change had a negative impact on the CET 1 ratio, estimated at 0.13 p.p. for the seven largest banks as a whole.

As regards pension funds, a revision of actuarial assumptions by the main institutions also made a negative contribution to developments in own funds, whose impact mainly resulted from an update in the discount rate of future liabilities (in most cases, from 2.5% to a figure close to 2.0%), only partially offset by a reduction in growth rate estimates for pensions and wages. An additional negative contribution came from the fact that returns on funds in 2016 stood below actuarial assumptions.

By contrast, making a positive contribution to the CET 1 ratio, risk-weighted assets (RWA) recorded a decline, in line with the trend of the past few years. The decline in RWA closely followed developments in total assets, also reflecting a decrease in the average risk weight of exposures.

Developments in Tier 1 and total solvency ratios were dominated by developments in the CET 1 component. Additional Tier 1 capital (AT1) continued to account for a residual share of total own funds, with only one medium-sized issue made in 2016. In turn, Tier 2 capital decreased slightly. At the end of 2016, Tier 1 and total solvency ratios reached 11.7% and 12.3% respectively. In the first quarter of 2017, two medium-sized issues were made, one of AT1 by Caixa Geral de Depósitos, with a coupon rate of 10.75%, and one of Tier 2 subordinated debt by Banco BPI, at a rate equal to the 6-month Euribor plus 5.74 p.p. (the latter underwritten by its main shareholder). These issues have an estimated impact of 0.4 p.p. on the aggregate total solvency ratio.

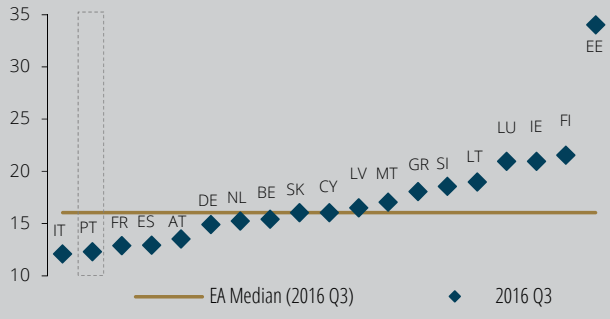
At the end of 2016, the leverage ratio of the banking system reached 6.7%, with all institutions standing above 3%, a figure which is expected to be a minimum requirement in the future. In November 2016, the European Commission published a proposal to revise the CRR, which, when adopted by the European Council and the European Parliament, will, inter alia, make the leverage ratio a prudential requirement, with the definition set out by the Basel Committee. This proposal is being negotiated at the level of the European Council and the European Parliament, and the requirement does not yet have a date to enter into force. At European level, the more favourable position of Portuguese banks in this indicator (in relation to the prudential capital ratios) reflects the fact that the RWA per asset unit (average risk weight) in Portugal are among the highest in Europe (Charts 20 and 21). This fact is expected to reflect, inter alia, less recourse by Portuguese banks to internal credit risk rating models when determining capital requirements.

The revision of the regulatory policy taking place in Basel intends to reduce the current excessive variability in the calculation of RWA at European level – by introducing restrictions to the use of internal models in terms of credit

class and risk weights – which will tend to penalise the capital ratios of institutions using internal models more intensively. The revision currently under way in Basel also sets out a holistic approach to assessing the solvency positions of banks in which – in addition to focusing on CET 1, Tier 1 and the solvency ratio – the leverage ratio will also be relevant. Within this context, the relative position of the Portuguese banking system in capital terms will tend to be less unfavourable than at present.

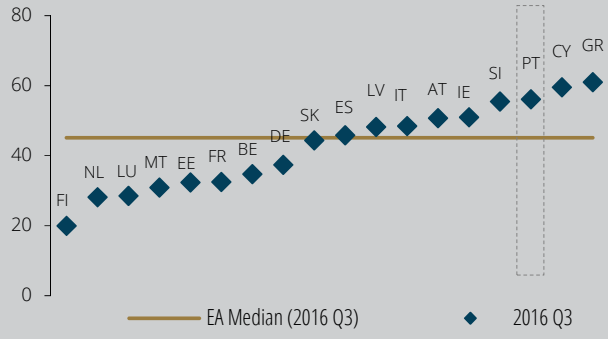
However, the entry into force of IFRS 9, on 1 January 2018, will have a non-negligible impact on the European banking system, to the extent that it results in an increased provisioning for loans and/or other assets. The impact on solvency will tend to be larger for banks using the standardised approach to calculate own funds requirements, while this effect might be mitigated by the adoption of a transitional regime. Within this context, following an impact assessment exercise, the EBA published an opinion piece advocating a gradual recognition of impacts arising from the entry into force of IFRS 9 in prudential terms. For more details, see Special Issue 2 "IFRS 9 – Main changes and impacts anticipated for the banking system and financial stability".

Chart 20 • International comparison of the CET 1 ratio
| Per cent



Source: European Central Bank (Consolidated Banking Data).
Note: Figures refer to the third quarter of 2016, due to unavailability of more recent data.

Chart 21 • International comparison of RWA per asset unit
| Per cent



Source: European Central Bank (Consolidated Banking Data).
Notes: Figures refer to the third quarter of 2016, due to unavailability of more recent data. Lithuania was not taken into account due to data unavailability.

Box 3 • Banking supervision under the comprehensive strategy to address the high stock of NPLs

The stock of non-productive assets[17] on Portuguese banks' balance sheets is very significant, despite the different measures taken during and after the Economic and Financial Assistance Programme (EFAP) addressed at both reducing the high indebtedness of the non-financial private sector and increasing the banking sector's resilience and ability to manage these assets. Overcoming this situation requires a comprehensive strategy, sustained on an approach that considers not only the impact that the current situation and its resolution will have on the banking sector, including possible contagion effects, but also the impact on the other institutional sectors and the different channels through which the resolution of the high stock of non-productive assets can affect the real economy.[18] Therefore, some factors should be taken into account, such as (i) banks' ability and willingness to finance the economy in a framework of pressure on prudential capital requirements, (ii) the impact on the banking sector financing costs due to the markets' perception of banks with high NPL stocks, accentuated by a framework where banks may need to resort to the market in order to comply with the Minimum Requirement for own funds and Eligible Liabilities (MREL), (iii) a possible excessive and abrupt decline in prices of some assets, such as those associated with the real estate sector, in the aftermath of potential fire sales of this type of asset, and (iv) the vicious circle that may be generated among a banking sector under the pressure of low profitability, a still overleveraged corporate sector, and a public sector with limited fiscal space and scope for action curbed by compliance with European rules.

Against this backdrop, the comprehensive and coordinated strategy to reduce non-productive assets on the banking sector's balance sheet involves the simultaneous development of three interdependent aspects: (i) an appropriate legal, judicial and fiscal framework; (ii) an intrusive supervision of the banking sector; and (iii) the pursuance of systemic measures, focusing on specific stock reduction objectives, either through workout processes or possibly through asset sales, where the significant heterogeneity of non-productive assets on banks' balance sheets (especially those associated with non-financial corporations) requires the definition of specific solutions for each segment.

All national and European entities relevant for the development of this strategy must be involved in its definition and adoption, with banks the main players.

This box focuses, in particular, on the supervision-related aspect.

Under the Single Supervisory Mechanism (SSM), Banco de Portugal identified the reduction of the high NPL ratio in the Portuguese banking sector as one of the main supervision priorities for 2016 and 2017. A range of initiatives/measures was thus defined to address this vulnerability in the sector, which builds on measures taken in previous years, strengthening the supervision of banks' asset quality. By way of example, the Circular Letter published on 23 February 2016 requested credit institutions to report to Banco de Portugal the impairment on specific exposures in the credit and real estate owned portfolios, duly revised by the auditor. In particular, it requested the evaluation of impairment estimates of (i) non-performing exposures with high vintage (i.e. over 3 years past-due) or high impairment coverage (i.e. exceeding 70%), (ii) exposures to certain geographical locations, and (iii) the portfolio of real estate owned and in participating units of real estate funds. This evaluation complemented the half-yearly impairment revision reports by the auditors, developed under Instruction No 5/2013 of Banco de Portugal, whose results – possible deviations in the recognition of impairments or other insufficiencies detected – are monitored by prudential supervision.

Since 2016, Banco de Portugal has also regularly requested institutions with higher NPL ratios to

provide granular information on the main non-productive assets (NPLs and real estate owned), which has sustained the development of an in-depth diagnostic of such exposures and their provisioning, by segment and vintage of the debt/default. With a view to sharing the results of the diagnostics undertaken by supervision, discussing solution strategies for the prudential concerns identified, and monitoring the results achieved by the institutions, the supervisory dialogue with the institutions and auditors on these issues has been intensified over the recent period and will continue into the future.

From the supervision and financial stability perspective, it is extremely important that banks with a high stock of non-productive assets define and incorporate a strategic and operational plan to resolve this situation. To this end, Banco de Portugal has been requesting institutions to adopt plans to reduce non-productive assets, which should include specific operational goals, by asset class and time horizon. The analysis of these plans is a dynamic, interactive process between supervision and banks' management, with a view to establishing sound, ambitious and credible plans. Compliance with the targets defined therein, as well as the implementation of the measures agreed, will be monitored by supervision.

It should also be added that the quantitative and qualitative aspects related to the internal management of NPLs by each institution are also evaluated annually under the Supervisory Review Evaluation Process (SREP).[19] The manner in which institutions address the high levels of NPL ratios, as well as their adherence to a strategy to reduce non-productive assets, affects the results of this risk evaluation process and may result in supervisory measures.

In the SSM context, a working group was set up to deal with NPLs, in order to analyse the size of these assets in the euro area banking system, and provide supervisory guidance appropriate to their solution. This also remains one of the SSM's priorities in 2017.[20]

As a result of the work carried out, the SSM's 'Guidance to banks on non-performing loans'[21] (Guidance) was recently published, which is an instrument to address the high NPL stocks on banks' balance sheets, resulting from the combination of best practices adopted by different national competent authorities of the SSM with the experience provided by the members of the working group.

Simultaneously, this Guidance will apply to banks and discloses the supervisors' expectations regarding an appropriate management structure of those assets. Specifically, the document focuses on the following aspects: (i) NPL recognition, (ii) impairment measurement, (iii) collateral valuation, (iv) recovery structures and measures, (v) internal governance associated with the whole management process of NPLs, and (vi) definition of an NPL management strategy.

In addition to guidelines on all these issues, the Guidance documents the best practice already in place in some countries on specific issues. It covers, in particular (i) NPL segmentation, considering resolution approaches adjusted to the assets' characteristics, (ii) monitoring metrics, making it possible to control the progress of activities, (iii) Early Warning Indicators, which are used to flag signs of credit quality deterioration, (iv) NPL-related policies, such as arrears management or recovery policy, (v) assessment of borrower's viability, with a view to maximising the adequacy of the measure to safeguard the borrower's and the bank's value and (vi) reporting templates, to organise the storage of relevant information across the whole NPL management system, both internally and to be shared with the supervisor.

The nature of the guidelines in this Guidance is qualitative, meaning that at this stage no targets have been set in terms of amounts or percentages in any of the large blocks covered by the Guidance. Nevertheless, the document is exhaustive in each of the abovementioned blocks.

The 'Stocktake on national supervisory practices and legal frameworks related to NPLs'[22] is also the result of work undertaken by the group. It compiles the practices followed by the national competent authorities integrated in the SSM, as regards the supervision of NPLs, as well as the legal, judicial and accounting frameworks of the jurisdiction in which each banking system operates.

The Guidance applies to significant institutions (financial institutions under the direct supervision of the SSM), including their international subsidiaries. The proportionality principle should apply, in line with the size and severity of NPLs in each bank.

The enforcement of this supervisory instrument is based on the possible triggering of supervisory measures in case of non-compliance. I.e. banks do not have to comply with the measures provided for in the Guidance, but they must appropriately explain any deviation, at the supervisor's request.

In short, the strategy to reduce non-productive assets on the banking sector's balance sheet includes the simultaneous development of the three abovementioned interdependent stages, involving different entities at national and European level. As regards banking sector supervision, the role played by Banco de Portugal, in its capacity as a national competent authority in the SSM context, has been key to strengthening supervisory actions and measures to address this vulnerability, the most relevant and recent of which are described in this box. However, it should be kept in mind that the strategy to deal with the high stock of non-productive assets is a process with gradual and continuous developments.

Therefore, the process is, and will continue to be, subject to regular control, monitoring and action by Banco de Portugal, within its field of competence.

Notes

1. The analysis of the Portuguese banking system takes into account information reported under EBA's Implementing Technical Standards with regard to supervisory reporting, established at European level. The adoption of new reporting has led to a revision of the set of institutions under analysis, while ensuring consistency with previous reporting. The definition of a number of variables considered was also revised. For more information, see the Note in the publication *Portuguese Banking System: latest developments*, Banco de Portugal, 4th quarter of 2016. In order to complement supervisory information, in particular for additional details on developments in domestic activity, statistical information on balance sheets and interest rates reported under the Monetary and Financial Statistics (Instruction of Banco de Portugal No 25/2014) for the set of resident monetary financial institutions on an individual basis is analysed.

2. The following non-recurring events were taken into account: (i) deconsolidation of Banco Millennium Angola belonging to the BCP group and merger with Banco Privado Atlântico in May 2016; (ii) sale transaction of part of Barclays' activity in Portugal to Bankinter, which, in the aggregate of the banking system, accounts for a reclassification of assets and liabilities from Other non-recurrent assets/liabilities held for sale and discontinued operations to the respective items; (iii) reclassification by Banco BPI of assets and liabilities, corresponding to the sale process of part of its shareholding position in Banco de Fomento Angola, as Other non-recurrent assets/liabilities held for sale and discontinued operations; (iv)

reclassification by Caixa Económica Montepio Geral of assets and liabilities, corresponding to the sale process of shares held at Finibanco Angola and Banco Terra Moçambique, as Other non-recurrent assets/liabilities held for sale and discontinued operations. The events taken into account have an impact on the asset structure and financing. The deconsolidation of Banco Millennium Angola belonging to the BCP group also has an effect on total assets. The sale process by Banco BPI of part of its shareholding position in Banco de Fomento Angola, the deconsolidation of Banco Millennium Angola, belonging to the BCP group, and the sale process of Finibanco Angola and Banco Terra Moçambique, on the part of CEMG, also affect the composition of the profit and loss account.

3. Impact measured as a percentage of risk-weighted assets, with reference to December 2016. Taking into account holdings of public debt securities issued by Portugal, Spain, Italy, Greece and Cyprus reported in Banco de Portugal's Securities Statistics Integrated System.

4. Liquidity gaps are defined as the difference between liquid assets and volatile liabilities as a percentage of the difference between total assets and liquid assets, for each residual maturity ladder. Indicators were calculated on the basis of data and concepts set out in Instruction of Banco de Portugal No 13/2009. This indicator allows for a comprehensive characterisation of banks' liquidity position, by considering a wide set of assets and liabilities and their residual maturities.

5. The liquidity coverage requirement is being implemented gradually: 70% from 1 January 2016; 80% from 1 January 2017 and 100% from 1 January 2018.

6. These assets are characterised by being quickly converted into cash in private markets within a short timeframe and without significant loss in value. For more details, see Article 3 of Commission Delegated Regulation (EU) 2015/61 to supplement Regulation (EU) No 575/2013 of the European Parliament and the Council.

7. Commission Delegated Regulation (EU) 2015/61 defines stress as "a sudden or severe deterioration in the solvency or liquidity position of a credit institution due to changes in market conditions or idiosyncratic factors as a result of which there may be a significant risk that the credit institution becomes unable to meet its commitments as they fall due within the next 30 calendar days".

8. For more details on the identification of Other Systemically Important Institutions (O-SII) at the domestic level, see Banco de Portugal's methodological note at: https://www.bportugal.pt/sites/default/files/anexos/doc_osii_en_0.pdf.

9. For more details, see https://www.cgd.pt/Investor-Relations/Informacao-aos-Investidores/Informacao-Financeira/CGD/Relatorios-Contas/2016/Documents/Relatorio-Contas-CGD-2016.pdf (in Portuguese only) and http://europa.eu/rapid/press-release_IP-17-556_en.htm.

10. For an analysis of recent supervisory initiatives to address the high stock of NPLs in banks' balance sheets, see Box 3 "Banking supervision under the comprehensive strategy to address the high stock of NPLs".

11. The definition of NPLs follows international standards, and is a more comprehensive concept when compared with Banco de Portugal's concept of credit at risk. For more details, see Special issue 3 "Concepts used in the analysis of credit quality", *Financial Stability Report*, November 2016.

12. For more details, see the Tax and Customs Authority's instruction sheet at: http://info.portaldasfinancas.gov.pt/NR/rdonlyres/C7216CC4-8C0C4737-AD5F-29C017E04369/0/FD_art_28_B_e_41_Proc_2014_002462_APB.pdf (in Portuguese only).

13. Collateral includes real estate and financial assets, such as deposits, debt securities and shares and other equity. Financial guarantees include contracts requiring the issuer to carry out certain payments to reimburse the holder for a loss it incurs, because a specified debtor fails to make payment when due under the original or modified terms of a debt instrument.

14. Under Commission Implementing Regulation (EU) No 680/2014, the total amount of reported guarantees (collateral and financial guarantees) may not, for each individual loan, exceed the value net of impairments. Where this is the case, and the two types of guarantee exist, amounts to be reported must be allocated in accordance with a criterion based on the collateral with the highest quality. For example, this data does not allow for an analysis of a hypothetical scenario of collateral devaluation, as the amount of guarantees associated with the loan portfolio may be higher than reported.

15. For more details, see *Prudential treatment of problem assets – definitions of non-performing exposures and forbearance*, Bank for International Settlements, April 2017.

16. For more details, see Box 2 "Options and discretions in the context of the Single Supervisory Mechanism", *Financial Stability Report*, November 2016.

17. The assets which do not regularly generate interest or any other type of income are deemed to be non-productive assets. In this framework, in particular, the most relevant non-productive assets are (i) non-performing exposures (NPEs), whose main component is non-performing loans (NPLs), and (ii) real estate owned (property received in lieu of payment). Part of the exposure to credit restructuring and real-estate investment funds may also be considered. On concepts see Special issue 3 'Concepts used in the analysis of credit quality', *Financial Stability Report*, November 2016.

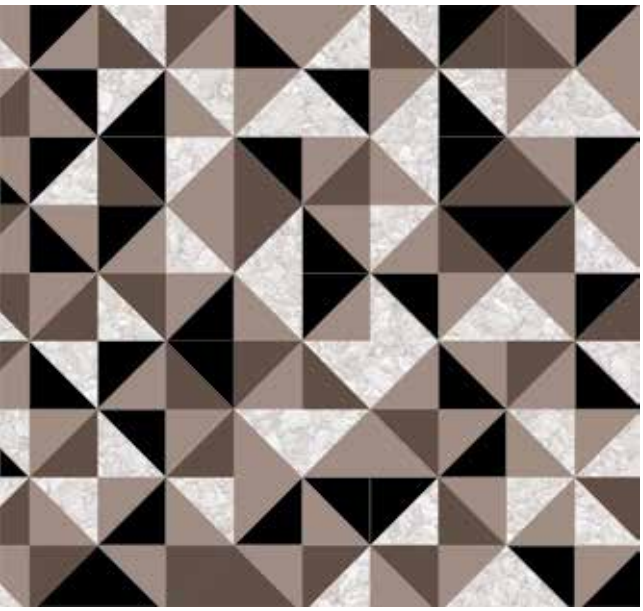
18. See, by way of example, Aiyar et al (2015), 'A Strategy for Resolving Europe's Problem Loans', *IMF Staff Discussion Note* SDN/15/19, International Monetary Fund; 'Resolving the legacy of non-performing exposures in euro area banks', *Financial Stability Report*, ECB, May 2015; and Bending et al (2014), 'Unlocking Lending in Europe', *Working Paper*, European Investment Bank.

19. Pillar 2 requirements and other supervisory measures are defined within the scope of the SREP.

20. https://www.bankingsupervision.europa.eu/ecb/pub/pdf/publication_supervisory_priorities_2017.en.pdf.

21. https://www.bankingsupervision.europa.eu/ecb/pub/pdf/guidance_on_npl.en.pdf.

22. https://www.bankingsupervision.europa.eu/legalframework/publiccons/pdf/npl/stock_taking.en.pdf.



IV
Special issues

1. Profitability of the Portuguese banking system – determinants and prospects

2. IFRS 9 – Main changes and impacts anticipated for the banking system and financial stability

3. Banking sector's exposure to mortgage loans: analysis of LTV and LTI/DSTI and implications for financial stability

1. Profitability of the Portuguese banking system – determinants and prospects

Summary

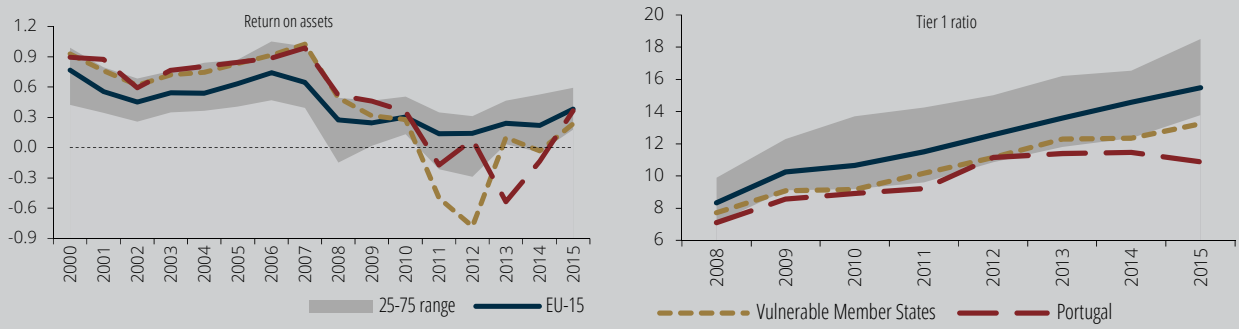
Median return on assets (ROA) levels of the Portuguese banking system were relatively high (around 0.9 per cent) and close to the EU-15 third quartile between 2000 and 2007 (Chart 1). Profitability initiated a decreasing trend from 2008 onwards and a steep deterioration was observed until 2013, when the median ROA of Portuguese banks reached a minimum of close to -0.5 per cent. This deterioration in the Portuguese banking system's profitability, also observed in other vulnerable euro area countries, was sharper than in the EU-15 as a whole and the median ROA remained negative for most of the 2010-2014 period. This is in stark contrast to the situation before 2010, when banks in countries most affected by the sovereign debt crisis enjoyed greater returns compared to the median European bank.

Low, and in particular negative, levels of profitability are challenging from the point of view of preserving financial stability, as they reduce banks' ability to withstand adverse shocks, which could deteriorate their capital bases, potentially affecting lending to the economy. Increasing capital requirements and constrained access to capital markets by Portuguese banks adds to the relevance of this issue from a financial stability perspective.

In fact, internal capital generation is one way to enhance prudential capital ratios, as an alternative to deleveraging or to raising capital in financial markets. In this context, it is interesting to notice that despite the aforementioned positive divergence in terms of profitability until 2010, the median Tier 1 capital ratio of the Portuguese banking system in 2008, i.e., at the onset of the financial crisis, was close to the EU first quartile, reflecting the dividend distribution policy followed by Portuguese banks during the pre-crisis period.

Against this background, the goal of this special issue is twofold: to describe the path of the Portuguese banking system's profitability since the early 2000s and to assess the extent to which macroeconomic developments and efficiency gains in the short-term may add to internal capital generation and thus contribute to banks' own funds accumulation. This analysis contributes to the ongoing debate on the

Chart 1 • Return on assets and Tier 1 ratio – comparison with the EU | Per cent



Source: Bankscope, SNL and Banco de Portugal.
Notes: Sample composed of 110 banks from the 15 original EU Member States for the 2000-2015 period. Vulnerable Member States include Ireland, Italy, Greece, Portugal and Spain. Shaded area displays difference in the evolution of the 25th and 75th percentiles of the full sample.

importance of these potential drivers for the recovery of banks' profitability and on the sustainability of the current banks' business models.

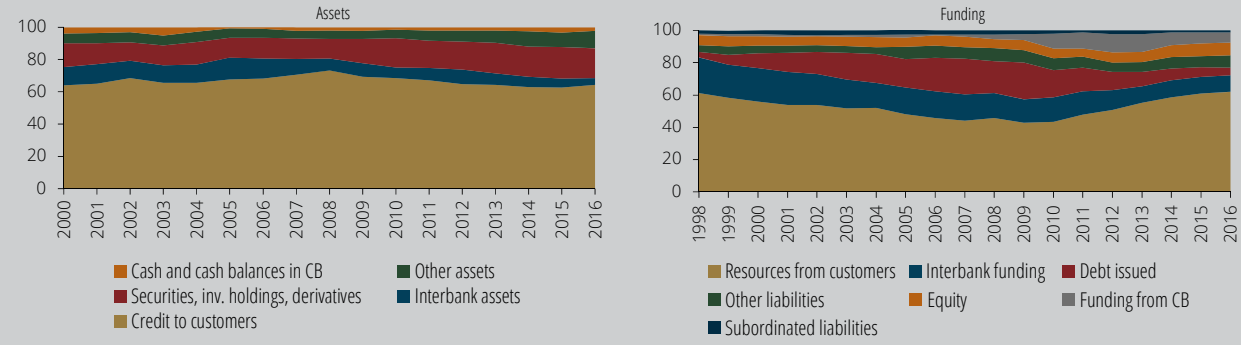
Firstly, a descriptive perspective of the ROA evolution of the Portuguese banking system since the beginning of 21th century is provided. Then, the conclusions in Martinho et al. (2017)[1] are summarised in order to characterise the main transmission channels from macroeconomic and financial developments to Portuguese banks' profitability. Secondly, based on the conclusion that Portuguese banks have room for improvement regarding the level of efficiency at which they perform financial intermediation,[2] a forward-looking exercise is presented aiming at quantifying the contribution of both macroeconomic developments and efficiency gains for internal capital generation in the next three years.

ROA of Portuguese banks: a descriptive analysis (2000-2016)

From the beginning of the century, the behaviour of both the Portuguese economy and the banking system was conditioned by participation in the euro area and the consequent financial integration. In particular, the new regime implied a steady decline in the level and volatility of interest rates, in a context of stable inflation. This favoured a significant increase in the level of indebtedness of the general government, through debt issuance in international wholesale funding markets, and of the private sector,[3] supported by the increase in the external indebtedness of Portuguese banks. This took place in a context of favourable financing conditions in international markets and ample liquidity levels at reduced costs.

In the context of a decreasing trend of interest rates to low levels and of easy access to external financing, the ratio of the Portuguese banking system's total assets to GDP increased from 195% in 2000 to 296% in 2010, despite the low trend growth of the Portuguese economy (with an annual average growth rate of real GDP of 0.7%; 7.6% in cumulative terms). In 2010, the median assets to GDP ratio for the EU-15 was 350%. Additionally, non-negligible changes in the balance-sheet structure, reflecting a change in banks' business model, were observed (Chart 2). The rise in total assets was driven by a 160% increase in credit to customers over the period. The credit portfolio to the resident private sector became particularly concentrated in real estate-related sectors (the weight of loans for house purchase, construction and real estate activities, in total loans, increased from 48% in 2000 to 60% in 2010[4]). The rise in financial

Chart 2 • Banking system balance-sheet | Per cent



Source: Banco de Portugal.
Notes: CB refers to central bank. Securities portfolio includes holdings and derivatives.

intermediation during this period led, in 2008, to a degree of utilisation of resources in terms of branches (per 1,000 inhabitants) and of number of employees (as a percentage of the labour force) of 0.61 and 1.13 respectively, which compares to 0.44 and 1.42 for the EU-15 average (please see Special issue 2 "Efficiency of Portuguese banking system", *Financial Stability Report*, November 2016).

The decreasing importance of deposits in the funding structure of the Portuguese banking system was compensated by an increase in debt issued in wholesale financial markets, including interbank funding, largely obtained from non-residents. These developments also took place in a context characterised by a decline in households' and non-financial corporations' savings rate with some of the major Portuguese banks channelling customer resources to alternative investments (debt securities, insurance and investment funds' products).

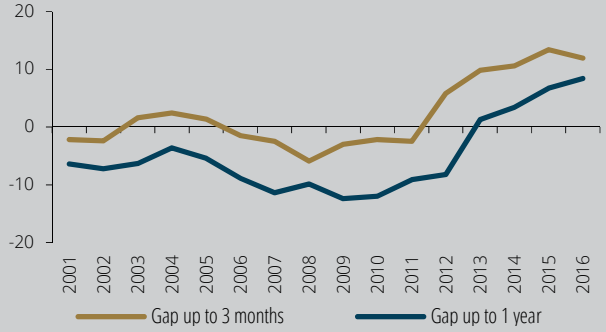
Despite the wholesale funding issuance at medium to long-term maturities, liquidity indicators deteriorated progressively (Chart 3). The descending and negative levels of liquidity gaps below one year resulted from an insufficient level of liquid assets to cover wholesale funding refinancing needs in the short-term. Likewise, the rise in the loan-to-deposit ratio confirms the increasing proportion of credit that was being funded through market financing (Chart 4).

As a result of the developments described above, Portuguese banks became more exposed to negative shocks in international financial markets as well as to economic shocks impacting on the solvency of the highly indebted non-financial private sector.

The international financial crisis that started in 2007/2008, and was significantly aggravated in Portugal by the euro area sovereign crisis, undermined the access to international wholesale funding markets by resident economic sectors, both public and private, and exposed the vulnerabilities of the Portuguese economy arising from high indebtedness levels and weak economic growth. The euro area sovereign crisis, in particular, aggravated substantially the operational environment of the Portuguese banking system, prompting an adjustment process of the sector. This was concomitant with the beginning of the correction of imbalances of the Portuguese economy as a whole (Chart 5), with important consequences in terms of banks' profitability and solvency. Chart 6 depicts the evolution of some key macroeconomic variables during the period under analysis.

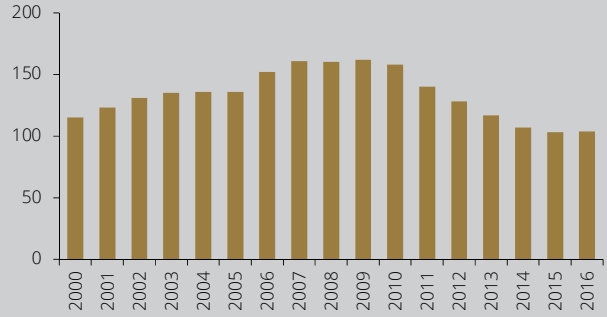
Table 1 shows that the relatively high levels of profitability observed up to 2007 were sustained throughout that period, despite the decrease in

Chart 3 • Liquidity gaps | Per cent



Source: Banco de Portugal. | Notes: Liquidity gaps are defined as the difference between liquid assets and volatile liabilities as a percentage of the difference between total assets and liquid assets, for each maturity bucket. This indicator allows for a comprehensive characterisation of banks' liquidity position, by considering a wide set of assets and liabilities and their residual maturities. Up to 2008, this indicator is computed using information from Instruction of Banco de Portugal No 1/2000 and from then on from Instruction of Banco de Portugal No 13/2009, which are applicable only to financial institutions which collect deposits.

Chart 4 • Loan-to-deposits ratio | Per cent



Source: Banco de Portugal.

the contribution of net interest income (NII), by the stability in the contribution to income from net commissions and operational costs, and, in particular, the decrease in the contribution of impairment losses recognition.

After 2008, the steep deterioration observed in ROA was driven by the upsurge in impairment recognition in addition to the continuing reduction in NII, only partially offset by the positive evolution of operational costs. Between 2008 and 2016, the Portuguese banking system generated an accumulated loss of approximately 9 billion euros,[5] despite the important role played by the international activity in partially offsetting the decline in domestic activity profitability of some of the main Portuguese banking groups.

Table 1 • Changes in ROA and contributions to changes in ROA | Percentage points

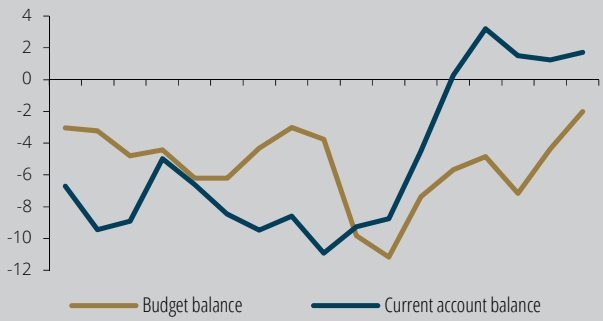
Δ	2001-2007	2008-2016	2001-2016
ROA	0.02	-1.64	-1.62
Net interest margin	-0.29	-0.44	-0.73
Net fees and commissions	0.05	-0.09	-0.04
Income from financial operations	-0.05	-0.11	-0.16
Other operating income	0.01	-0.14	-0.12
Operational costs	0.01	0.36	0.36
Impairments	0.18	-1.15	-0.97
Other	0.11	-0.07	0.04

Source: Banco de Portugal.
Notes: Values correspond to the cumulative changes during the periods considered; changes with a positive signal correspond to a positive contribution for ROA evolution. Other operating income includes dividends, results from foreign exchange revaluations, results from other financial assets sales and other net operating income.

Net interest income

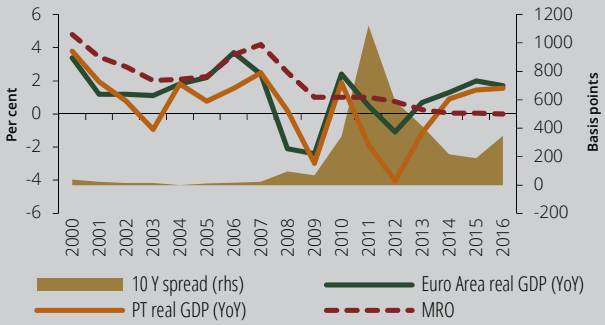
The declining contribution of the NII to ROA, while intensifying in the course of the international financial crisis, has been taking place since the beginning of 2000s and explains a considerable part of the reduction in profitability of the Portuguese banking system (Table 1). This is in line with the banking sectors of other euro area Member States more severely hit by the crisis, but not with all countries considered in the sample. Chart 7 shows not only the higher starting

Chart 5 • General government budget balance and current account balance | Per cent



Sources: INE and Banco de Portugal.

Chart 6 • GDP and interest rates



Source: Banco de Portugal.
Notes: 10-year spread refers to the difference between the yields of 10-year Portuguese and German government bonds. MRO refers to main refinancing operations.

point for the former set of countries compared to the full sample – it remained always at or slightly above the third quartile of the EU-15 sample – but also the steeper decline of the median NII as a percentage of total assets in those countries since 2008. The latter effect is explained by a large drop in interest income which was not accompanied by a directly proportional decrease in interest expenses.

The decomposition of the NII evolution of Portuguese banks into price and volume effects highlights that, until 2013, the price effect was in overall terms negative, with an inversion of the trend in 2014 (Chart 8). In contrast, the margin generation benefitted from a positive volume effect until 2011. Until 2009, this positive volume effect was supported by credit growth, sustained by the favourable international financial conditions, despite low GDP growth. On the contrary, in 2010, the positive volume effect is explained by the increase in the portfolio of domestic public debt, while in 2011 it mainly results from the significant reduction in debt securities issued. From 2012 onwards, the volume effect became negative reflecting the deleveraging process of the Portuguese banking system.

Price effect contributions reflect changes in the total spread (difference between the implicit rates on assets and liabilities), including in the customer spread (difference between the implicit rates on credit and deposits, given the importance of these items for Portuguese banks' balance-sheets).

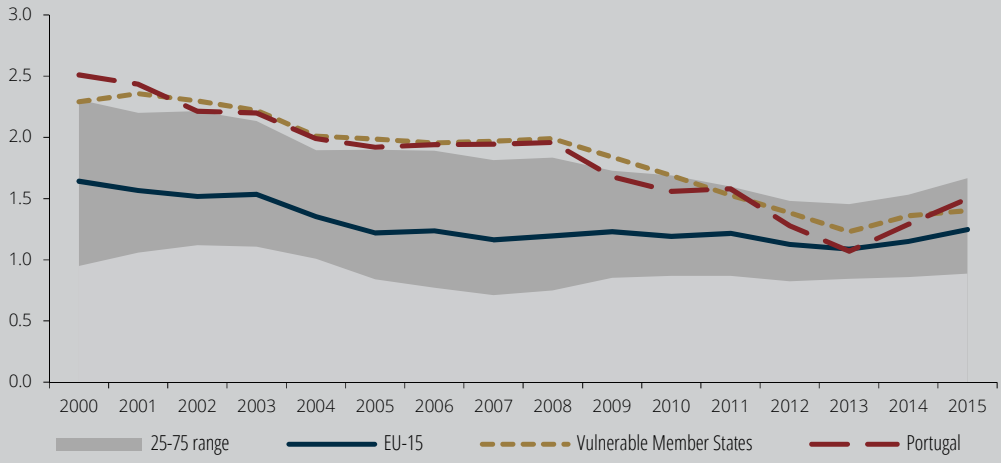


Chart 7 • Net interest income – international comparison | As a percentage of total assets

Source: Bankscope, SNL and Banco de Portugal.
Notes: Sample composed of 110 banks from the 15 original EU Member States for the 2000-2015 period. Vulnerable Member States include Ireland, Italy, Greece, Portugal and Spain. Shaded area displays difference in the evolution of the 25th and 75th percen-tiles of the full sample.

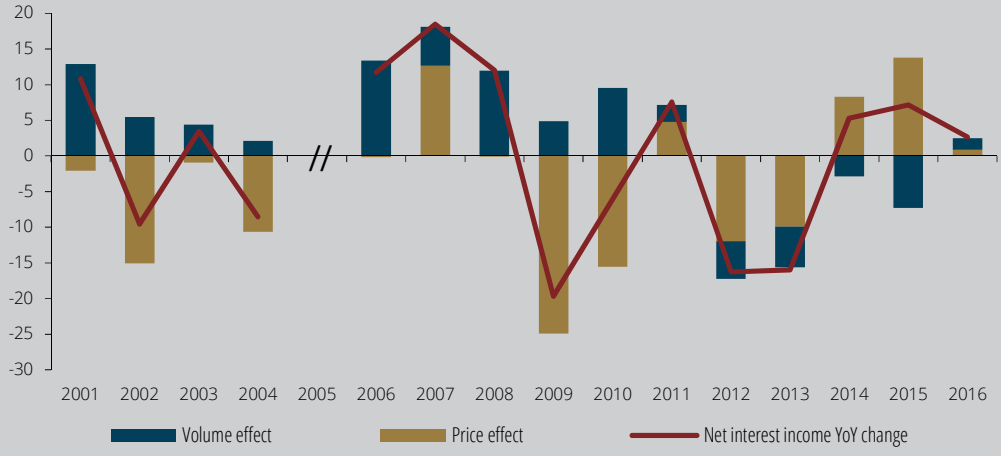


Chart 8 • Decomposition of NII year-on-year changes: volume and price effects | Per cent

Source: Banco de Portugal.
Note: Volume effect reflects changes in balance sheet components that generate receipts and payments. Price effect captures changes in the implicit interest rates associated with such components. Series break in 2005 is driven by the introduction of the International Accounting Standards (IAS).

Until 2004, the downward trend of the total spread resulted from the decline of credit interest rates, in a context of decreasing reference rates and also of compression in loan spreads, which was only partially compensated by the decrease in the cost of deposits and market funding (Table 2). The compression in loan spreads occurred in a context of ample and cheap liquidity, which increased competition pressures across banks, thus promoting less strict credit standards and a lower pricing of credit risk (Chart 9). These pressures were particularly visible in the most dynamic credit segments, especially housing loans, and their impact was reinforced as the weight of mortgage loans in total loans increased from 35% in 2000 to almost 43% in 2004.

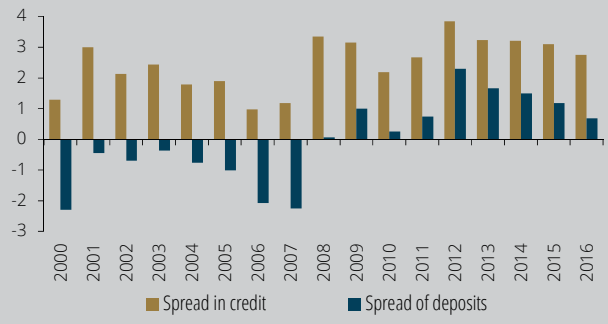
Between 2005 and 2007, the increase in the total spread was driven by a new cycle of ECB interest rate rises. Increasing money market interest rates resulted in a positive evolution in deposit spreads and in the total spread of operations with customers. This is explained by the time lag in the pass-through of changes in these rates to interest rates on the outstanding amounts of operations with customers, as the speed of adjustment is lower for deposits than for credit: in general the average fixation period is longer for deposits than for loans and the remuneration of demand deposits is very low (or even zero) and less sensitive to changes in money market interest rates (this effect increases with the share of these deposits in the funding structure).

Table 2 • Portuguese banking system spreads and interest rates

	2001	2004	2007	2013	2016	Δ 2001-2016	Δ 2007-2016
Total spread (p.p.)	**1.9**	**1.4**	**2.0**	**1.1**	**1.6**	**-0.3**	**-0.5**
Assets (%)	5.4	3.3	5.6	3.3	2.5	-2.9	-3.1
Liabilities (%)	3.6	1.9	3.5	2.2	0.9	-2.7	-2.6
Spread with customers (p.p.)	**3.6**	**2.6**	**3.4**	**1.6**	**2.1**	**-1.5**	**-1.4**
Credit (%)	6.1	4.0	5.9	3.6	2.7	-3.4	-3.1
Deposits (%)	2.5	1.4	2.5	2.1	0.7	-1.8	-1.8

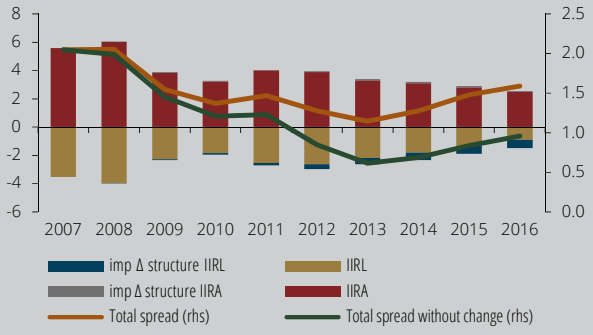
Source: Banco de Portugal.
Notes: Implict interest rates on assets (and credit) and on liabilities (and deposits) corresponds to the ratio between the interest received (or interest paid) and the average volume of assets or liabilities in a given year. The spread corresponds to the difference between the implicit interest rate on assets and the implict interest rate on liabilities. Activity with derivatives was not considered.

Chart 9 • Spreads of loans and deposits | Percentage points



Source: Banco de Portugal.
Notes: Spread is defined as the difference between the implicit interest rates and 6-month Euribor.

Chart 10 • Impact of the balance-sheet structure adjustment in total spread | Percentage points



Source: Banco de Portugal.
Notes: IIRA = Implicit Interest Rates on Assets and IIRL = Implicit Interest Rates on Liabilities.

For the period between 2007 and 2016, the total implicit spread decreased from 2.0% to 1.6%, while the decline in the spread on customer operations was much higher, from 3.4% to 2.1%.

The relatively lower reduction of the total spread reflects, essentially, the adjustment in the banks' funding structure towards a more deposit-based financing, with a substantial decrease in market funding sources (both through bonds and interbank funding), and the increase in the weight of Eurosystem's funding, in the context of the changes in the operational framework of the Eurosystem monetary policy. In fact, without the impact of the funding structure adjustment, the implicit interest rate on liabilities in 2016 would have been 1.4% instead of 0.9% and the total spread would have dropped, between 2007 and 2016, by 1.1 p.p. instead of 0.5 p.p. (Chart 10). The impact of the change in the assets' structure, although small, also had a positive effect on total spread evolution, stemming from the decrease in interbank assets and the increased weight of the debt securities portfolio, namely of domestic sovereign debt.

In turn, the steep deterioration in the spread on customer operations until 2013 is explained by the strong decline in credit interest rates and a smaller adjustment of the cost of deposits. The evolution of credit interest rates largely mirrors the reduction observed in reference interest rates – that decreased to very low levels amid low inflation and weak economic growth in the euro area. The interest rate on the housing loans portfolio explains a substantial part of this evolution, as most of the contracts are indexed to Euribor rates, with long maturities and fixed spreads, which strongly limits banks' ability to reprice this portfolio. Conversely, the increase in loan spreads, resulting from the adoption of more restrictive lending standards in the context of worsening economic and financial environment and an increase in the materialisation of credit risk, contributed to slightly offset the aforementioned reduction in money market interest rates.

Additionally, until 2013, the cost of deposits did not compensate the reduction in credit interest rates. In fact, difficulties in accessing financing in international wholesale markets, at the onset of the international financial crisis and especially at the height of the sovereign debt crisis period, led banks to adopt more competitive strategies, offering higher rates of remuneration for resources from customers.[6] In order to mitigate the risks for financial stability underlying those deposits' remuneration strategies, in 2011 Banco de Portugal introduced a penalty in own funds for banks paying excessive remuneration rates.[7]

The changes introduced by the ECB in the monetary policy framework at the end of 2011 improved the liquidity position of Portuguese banks. Nevertheless, the cost of deposits remained under pressure both by the remuneration offered by alternative savings products, namely treasury certificates, and by the rigidity introduced by the higher proportion of longer maturity time deposits with step up clauses agreed at the peak of the liquidity crisis.

From 2014 onwards, the steep decrease in the cost of deposits, reflecting the impact of the repricing of the deposit base, was sufficient to trigger a recovery of the spread in operations with customers. The positive effect arising from the cost of deposits was amplified by the growth in this source of financing. Nevertheless, the context of negative interbank interest rates implies that the cost of deposits remains above the benchmark rates, in contrast to what was observed until the financial crisis.

Overall, between 2000 and 2016, the evolution of NII was explained by weak economic growth, money market interest rates cycles but also by changes in the perception of customer credit risk and liquidity restrictions, observed since the onset of the financial crisis and which intensified during the sovereign debt crisis. Changes in the balance sheet structure, to a certain extent, helped to mitigate the impact of the adverse macroeconomic developments. The current environment of negative levels of money market interest rates and the prospects embodied in futures rates make the zero lower bound an active restriction for the evolution of funding costs, creating additional pressure on margin generation, given the slow adjustment in the implicit rate of a considerable part of the loan portfolio.

Non-interest income: net commissions and results from financial operations

The above-mentioned decreasing trend in NII contribution to ROA since 2000 led Portuguese banks to diversify income sources.

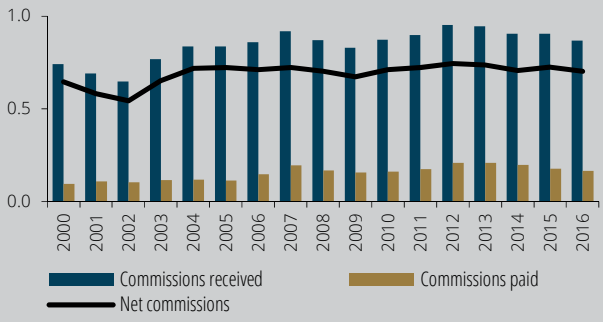
In this context, it is worth emphasizing the stability of the net commissions' contribution to ROA during the entire period under analysis (Table 1 and Chart 11). However, the composition of net fees and commissions has been changing since 2007 (Chart 12). In particular, the contribution of commissions related with financial operations and market performance has been decreasing since 2007, explained by the reduction of commissions received from investment fund management and from the operations with securities carried out on behalf of customers, including brokerage fees. This decreasing trend observed mainly until 2012 is consistent with (i) financial markets developments, inducing a reduction of the value of assets under management and the reduction of new market issuances, and (ii) banks strategies to collect resources from customers in the form of deposits, as described above. In turn, commissions associated with card management and annuities remained relatively stable (though decreasing somewhat in the most recent years).

Results from financial operations have been (and are by nature) a volatile component of operating income, dependent on the performance of financial markets, with an average contribution to ROA over the period (2000-2016) of around 0.18%. The years that clearly deviate from this average level coincide with atypical developments in the financial markets, either equity or debt markets. From 2000 to 2016 the results from financial operations had a cumulative negative contribution to the evolution of asset profitability, despite the net gains obtained during the 2011-2015 sub-period. These latter capital gains were mainly driven by the trading of domestic public debt carried out from 2012 onwards, in the context of significant reductions in sovereign yields – after the peak in the country risk premium reached in 2011 – to which contributed the non-standard monetary policy measures taken by the Eurosystem as a response to the sovereign crisis. The magnitude of these results was also explained by the increase in the portfolio of domestic public debt, as previously explained.

Operational and impairments costs

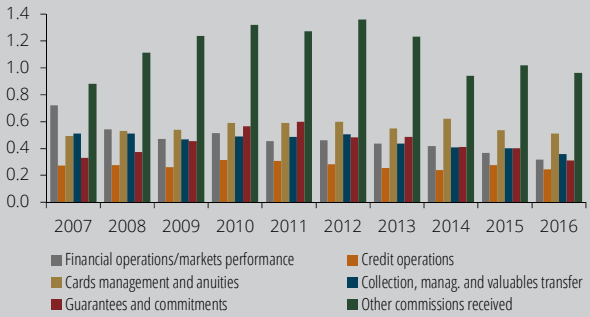
Operating costs have contributed positively to the evolution of profitability of the banking system's assets in the recent years (Table 1). As described in the Special issue 2 "Efficiency of Portuguese banking system", *Financial Stability Report*, November 2016, the Portuguese banking system has been reducing its overhead costs. An

Chart 11 • Net fees and commissions
| As percentage of total assets



Source: Banco de Portugal.

Chart 12 • Net fees and commissions | EUR billion



Source: Banco de Portugal.

efficiency analysis of Portuguese banks using the stochastic frontier method, which allows the effect of factor prices or bank dimension to be controlled for, corroborated the idea that, despite the efforts undertaken, it is still possible to improve the use of resources in banking intermediation in Portugal. In fact, after controlling for the cost of financing and the relatively small scale of Portuguese banks, the Portuguese banking system is still below the European median in terms of the efficiency metrics produced by the model.

Concerning impairments, the environment of declining interest rates and low risk aversion (also reflected in compressed country risk premium) before 2007 contributed to intensify competition and promoted an easing of the credit standards, resulting in a compression of spreads and a lower pricing of credit risk. In this context, the recognition of impairments remained fairly constant up to 2007. When compared with EU figures, impairments' recognition in Portugal was at or above the third quartile (Chart 13).

The sharp increase in the recognition of impairment losses explains a significant part of the deterioration in ROA, especially since 2008. The vulnerable position of the Portuguese economy resulting from the accumulated imbalances, namely the high deficit of the balance of payments and of the public sector combined with the high levels of domestic sectors' indebtedness, explains the sizeable impact on the real economy of the financial crisis and, in particular, of the euro area sovereign crisis. The materialisation of credit risk is reflected in the strong increase in the overdue credit ratios and led to a considerable increase in impairments and in the cost of risk of the Portuguese banking system, despite the mitigating effect on credit default levels from the prevailing context of low interest rates (Chart 14 and Chart 15).

The recognition of impairment losses from 2011 onwards was mostly determined by the protracted period of economic recession. In this context, reference should be made to the special inspections programme performed by Banco de Portugal throughout 2011 and 2013 and to the Asset Quality Review exercise performed by the Single Supervisory Mechanism (SSM) in 2014, aiming at ensuring a prudent asset valuation.

It is worth mentioning that currently, as shown in Chart 7 and Chart 13, the major factor draining the profitability of Portuguese banks when compared to the European peers is the level of impairments, thus highlighting the need to promote a faster reduction of the stock of legacy assets.

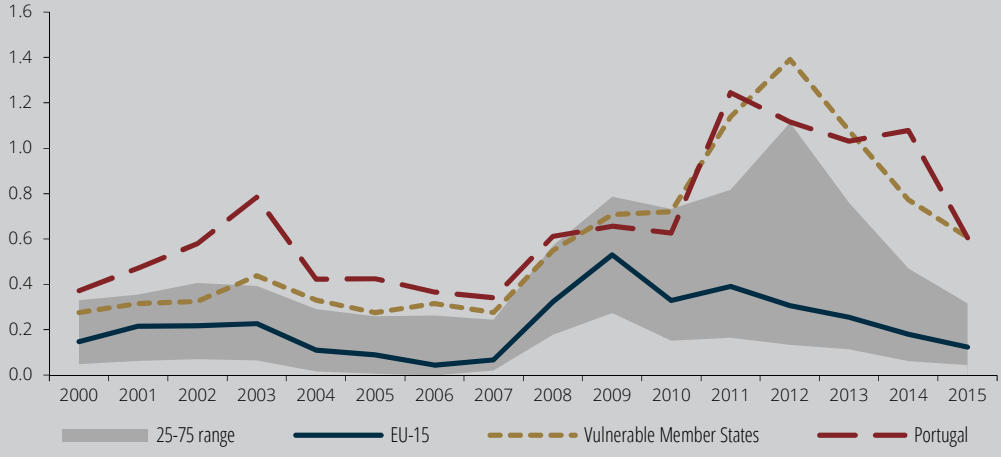


Chart 13 • Impairments and provisions – international comparison
| As a percentage of total assets

Source: Bankscope, SNL and Banco de Portugal.
Notes: Sample composed of 110 banks from the 15 original EU Member States for the 2000-2015 period. Vulnerable Member States include Ireland, Italy, Greece, Portugal and Spain. Shaded area displays difference in the evolution of the 25th and 75th percentiles of the full sample.

The role of macroeconomic developments in the profitability of the Portuguese banking system

In this section, the model in Martinho et al. (2017) is used to quantify the role of macroeconomic developments in the changes in the ROA observed in the period under analysis, in particular as regards the significant deterioration observed after 2008.

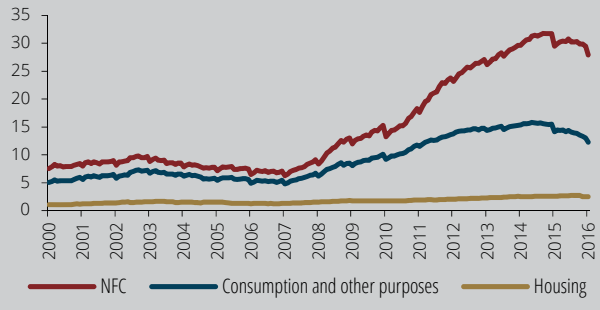
In Martinho et al. (2017) the response of bank profitability to macroeconomic developments is examined through the estimation of a linear dynamic model of bank profitability, for the 2000-2015 period, using bank accounting information drawn from Bankscope and SNL, corresponding to a sample of 110 banks from 15 EU Member States. Evidence is found of a positive contemporaneous effect of GDP growth and of a negative contemporaneous effect of country risk premium on bank profitability, mainly stemming from their impact on impairments. The significant positive relationship between impairments and country risk premium may reflect the fact that the former explanatory variable may be capturing financial and economic conditions not mirrored in GDP growth, working as a crisis signalling variable. With respect to the impact of short-term reference rates, the study finds an overall positive impact on bank profitability, although it cannot identify the transmission channels. In particular, the effect of an increase in interest rates on impairments remains uncertain, especially in a context of high indebtedness levels of households and non-financial corporations.

Table 3 shows the decomposition of changes in the average ROA of Portuguese banks based on the common-coefficient model estimated in Martinho et al. (2017). Macro factors explain a considerable fraction of the evolution of ROA in Portugal, namely the drops observed from 2008 onwards, while the contribution of bank-specific variables is negligible.

By analysing the estimation results concerning the impact of macroeconomic developments on ROA and ROA components together with the stylised facts for the Portuguese banking system described in section 2, the following conclusions may be drawn:

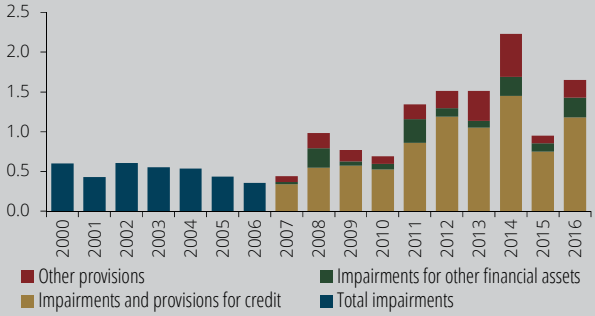
- The abrupt increase in impairments' recognition and consequent negative impact on ROA is consistent with the deterioration in macroeconomic conditions in this period, namely the strong recession and the steep increase in country risk premium;
- Concerning the evolution of NII, a slightly negative relation with GDP growth is estimated, possibly capturing the impact of economic prospects and credit risk perception on the spreads of new loans;
- The overall negative impact of country risk premium on NII generation corroborates the idea that the positive impact on interest received (driven by the higher remunerations

Chart 14 • Overdue loans – non-financial private sector | Per cent



Source: Banco de Portugal.

Chart 15 • Impairments | As a percentage of total assets



Source: Banco de Portugal.
Notes: The decomposition of the contribution of impairments and provisions to ROA is only available from 2007 onwards with the broad introduction of IAS. The contribution of other provisions in 2013 and in particular 2014 is explained by the recognition of provisions to cover contingent liabilities assumed by BES.

of the growing domestic public debt portfolio associated with the financing restrictions of the sovereign and possibly the increase in customer loan spreads) is offset by the negative impact on funding costs, mainly through the higher cost of deposits following the loss of access to international funding markets;

- During the entire period, the contributions of money market interest rates and country risk premium represent the majority of macro factors explaining macroeconomic factors' contribution to ROA decline, in particular after 2008. Since this year, and as expected, the contribution of GDP gained increased importance. Developments in the yield curve slope, after 2008, contributed to slightly offset the negative contribution of the other macroeconomic variables. Nevertheless, as mentioned above, the contribution of short-term market interest rates has to be considered carefully, due to the inherent difficulty in estimating its effect using banks from multiple countries, with different levels of interest rate and credit risk.

In summary, there is compelling evidence that deteriorating macroeconomic conditions were key contributors to the large drops in ROA experienced by the Portuguese banking system. However, there is a fraction of variation which is not attributable to the explanatory variables considered, indicating that other drivers were at work – such as changes in bank asset structure, like the expansion of the domestic sovereign debt portfolio, or international activity developments.

Table 3 • Decomposition of changes in average ROA | Percentage points

	2002-2007	2008-2015	2008-2012	2002-2015
ROA	0.141	-0.854	-1.400	-0.714
Macro factors	0.002	-0.748	-2.327	-0.746
Real GDP growth	0.049	-0.082	-0.536	-0.033
Short-term interest rate	0.001	-0.308	-0.266	-0.308
Term slope	-0.064	0.064	0.110	0.000
Country risk premium	0.027	-0.314	-1.631	-0.288
Crédit growth	-0.011	-0.107	-0.004	-0.118
Bank-specific factors	-0.082	0.158	0.084	0.075
Persistence	-0.003	-0.090	-0.187	-0.093

Source: Martinho et al, 2017.

Contribution of macroeconomic factors and operating efficiency gains to the strengthening of capital ratios

In this final section, a set of scenarios on banking system profitability is presented aiming at better understanding to what extent the macroeconomic recovery and efficiency improvement may contribute to the reinforcement of bank capital, given tighter capital requirements in the future. These scenarios have a three-year horizon, starting from December 2016. Projections of real GDP growth, interest rates, the yield curve, and Portuguese sovereign yield spreads are based on Banco de Portugal's December 2016 *Economic Bulletin* and used as inputs for the profitability model mentioned in the previous section. This exercise generated a projection for banks ROA for the six largest Portuguese banks, excluding Novo Banco.

According to the model, aggregate bank ROA should recover and reach a moderate positive level in 2019, driven mainly by the gradual increase in the NII, due to the slightly higher projected short-term interest rates, and a reduction in impairments relative to 2016. Based on this macroeconomic scenario, and without considering further adjustments from banks, retained earnings are expected to provide a net contribution of 0.5 per cent to total prudential capital (or an increase of 0.1 percentage points in the prudential capital ratio) by 2019 with respect to 2016, after an initial negative impact.

Note that the bank profitability model uses only macroeconomic variables for the projections. Hence, this does not take into account other key factors, such as changes in banks' business models in response to new regulatory conditions or to competitive pressures, which could lead to

improved revenue generation or a more efficient running of operations. Instead, those projections show the extent to which profitability and own funds might recover due solely to changes in macroeconomic conditions, given historical patterns captured by the model and highlighting the importance of further efforts in the adjustment of the banking business model.

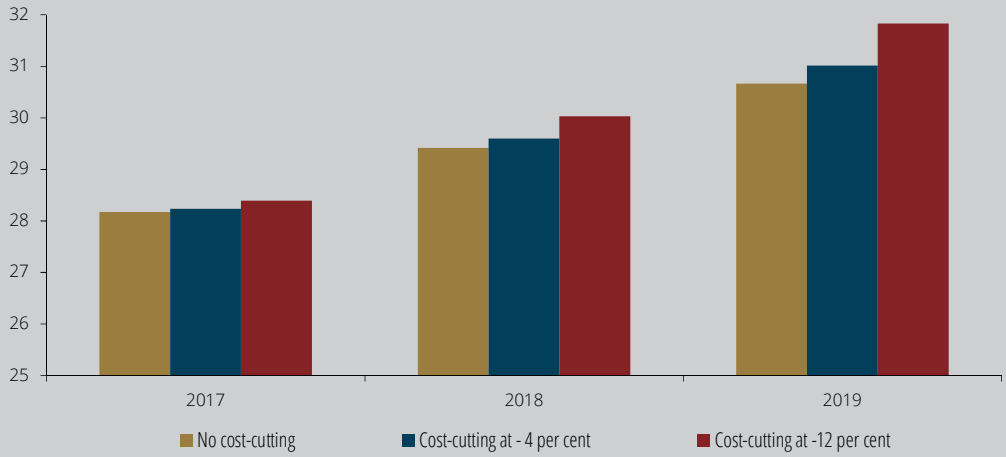
To illustrate how banks may adjust to respond to this environment, a baseline cost-cutting scenario was designed for the 2017-2019 horizon, while assuming an otherwise static profit and loss account for each bank. This enables us to quantify the contribution that a given cost-cutting profile can make to internal capital generation via retained earnings. In this second scenario operational costs are thus the control variable, i.e. the variable to be adjusted in order to measure its incremental effects on profitability.

The baseline cost-cutting profile is designed as follows: we assume that there is a maximum cost-to-income ratio of 50% that banks aim to achieve.[8] Banks already at or below this benchmark in 2016 keep a constant volume of operational costs over the next three years, while those above this minimum are assumed to cut operational costs at a rate of 3.9% per year, on average, which corresponds to the average rate of change in operational costs for sample banks in the 2013-2016 period.[9]

The remainder of the scenario is designed as follows: net interest margin and other operational income are assumed to remain at 2016 values for the following three years. Impairments are adjusted to reduce the impact of one-off events, but otherwise remain close to 2016 levels for most institutions. A tax rate on profits of 25% is assumed, which corresponds to the average proportion of taxes in profits in 2016, for those banks in the sample which had profits. Other profits/losses and goodwill are assumed to be zero for all years. Under those assumptions, banks are able to increase the prudential capital ratio by 0.2 percentage points until 2019 with respect to the scenario with no cost-cutting.

Note that cost-cutting has an increasing effect over time, as permanent drops in operational costs in previous years increase net income levels in every subsequent year. This indicates that increasing efficiency is especially effective at generating net income over the medium term, as its effect is compounding. In the last scenario, it is assumed that cost-to-income must be lower than or equal to the benchmark value for all banks in 2019. This implies an average cost-cutting rate of 12 per cent for those banks that are above the benchmark. This has the potential to increase the prudential capital ratio by 0.5 percentage points in 2019, compared with the scenario where there is no cost-cutting, assuming that risk weighted assets remain unchanged. Chart 16 shows the sensitivity of this conclusion to different assumptions about the rate at which banks may reduce operational costs.

Chart 16 • Estimated aggregate total prudential capital: sensitivity to yearly cost-cutting rates | EUR billion



Source: Banco de Portugal.
Notes: Estimates based on the previously presented scenario for the six largest banks excluding Novo Banco, with indicated average yearly changes in the volume of operational costs for those banks which engage in cost-cutting. Estimated aggregate total prudential capital is obtained by adding retained earnings over each year to 2016 total prudential capital, adjusted for expected capitalisations in 2017.

Conclusion

Since 2010, the Portuguese banking system's profitability declined markedly, mainly driven by the deterioration in net interest income and the upsurge in impairments. This occurred after a decade in which domestic banks enjoyed higher profits than their European counterparts, even though real GDP growth remained subdued. This was the result of the low cost of funding arising from increased access to international financial markets which translated into high credit growth. At the onset of the 2008 crisis, the Portuguese banking system, as many other European banking sectors, relied on international debt markets to obtain a non-negligible fraction of its funding and was heavily exposed to sectors related to the real estate market. In comparison with Europeans peers, Portuguese banks presented a median ROA close to the third quartile, whereas the median Tier 1 ratio was close to the first quartile, reflecting the dividend distribution policy followed by Portuguese banks during the pre-crisis period.

As the crisis unfolded and affected sovereign funding, Portuguese banks access to international funding markets became increasingly constrained, adversely affecting their liquidity positions, just as they expanded balance sheet exposures to the domestic sovereign and were forced to recognise impairments due to increasingly difficult economic conditions in Portugal. The worsening macroeconomic situation, as well as difficulties in sovereign and bank funding led to a sharp drop in profitability from 2008 onwards. This culminated in an economic and financial assistance programme in 2011 and the public recapitalisation of banks in 2012 in the context of the EBA capital recommendation.[10]

From this point on, banks have started adjusting to the new environment, albeit in an uneven manner. Currently, they rely mostly on domestic deposits for their funding and cut operational costs, while maintaining access to Eurosystem funding at levels above the pre-crisis ones. Profitability has recovered and some banks have been successfully capitalised with the attraction of new investors.

Despite the improving situation, additional impairments are to be expected for the system as a whole over the coming years, which will constrain profitability. This will be offset by positive developments in net interest income and a persistent level of net fees and commissions, barring additional adverse macroeconomic shocks. If the banking system is able to undertake further adjustment in its operational costs, it can internally generate additional retained earnings, which are compounding in the medium term. However, required restructuring brings about costs for entities in the short-term, in the form of settlements.

Given the expected increasing capital requirements in the next few years, such as the O-SII and the capital conservation buffers phasing-in in 2018 and 2019,[11] compliance with regulatory capital rules in the short run cannot be grounded only on the contribution of macroeconomic recovery to internal capital generation or on the improvement of operational efficiency but also on a prudent risk management and NPL resolution.

2. IFRS 9 – Main changes and impacts anticipated for the banking system and financial stability

Overview

In the aftermath of the 2007-2009 global financial crisis, G20 leaders considered that it would be useful to introduce changes in the accounting standards, with a view to earlier recognition of credit losses – as opposed to later recognition, and to amounts not necessarily appropriate to the implied risk (too little too late) – in order to contribute to promoting a more resilient banking system.

In response to G20 recommendations, the International Accounting Standards Board (IASB) started preparatory work for a new standard, which culminated with the adoption by the European Union, on 22 November 2016, of the International Financial Reporting Standard 9 (IFRS 9), which will enter into force on 1 January 2018, replacing the International Accounting Standard 39 (IAS 39). This consisted in amending the accounting standard in force (IAS 39), to include provisional information in the calculation of credit impairment losses and to move from an incurred credit loss model to an expected credit loss model.

This special issue presents a description of the main accounting changes introduced by the IFRS 9, its foreseeable interaction with the prudential requirements and its potential impacts for the financial system (in particular the banking system) and for financial stability.

Introduction

As a result of the reflection about the performance of the standard in force during the financial crisis, the G20 recommended the International Accounting Standard Board (IASB) to reconsider the incurred credit loss model provided for in the IAS 39, which regulates the classification and measurement of the financial instruments. For this purpose, the adequacy of alternative models to the calculation of impairment losses was considered, which would enable a higher volume of information on credit to be included and the materialisation of credit risk to be timely identified.

Similarly to the standard currently in force (IAS 39), the implementation of the new standard in the European Union shall apply to all companies – whose securities are admitted to trading on a regulated market of any Member State – that prepare consolidated accounts (Regulation (EC) No 1606/2002 of the European Parliament and of the Council). In the Portuguese case, the financial statements on a consolidated and/or non-consolidated basis (Notice of Banco de Portugal No 5/2015) of institutions subject to supervision by the Single Supervisory Mechanism (SSM) and Banco de Portugal are prepared in accordance with that standard.

The incurred credit loss model, resulting from recognition on the basis of incurred losses, will be replaced by an expected credit loss model. This model is expected to contribute to an impairment loss recognition more appropriate to the implied credit risk in the asset portfolio of the institutions, thus contributing to greater soundness of the banking system.

However, some aspects should be taken into account by the institutions, auditors, regulators and supervisors. Such aspects are largely associated with the preparation and timing of introduction of the new standard, but also with characteristics that are projected to extend beyond the implementation phase.

This topic gains importance as the new standard will soon enter into force and considering the press release issued by the European Securities and Markets Authority (ESMA) in November 2016, which deems

appropriate and relevant that the issuing entities in the market publish estimates on the impact of the new standard by the end of 2017.

Classification and measurement

The International Financial Reporting Standard (IFRS) 9 will replace the International Accounting Standard (IAS) 39, which regulates the accounting classification and measurement of financial assets and liabilities from January 2018 onwards. As regards the recognition and derecognition of financial instruments, the new standard maintains, overall, the rules enshrined in the IAS 39. As regards the classification of financial instruments, the new standard is more strongly based on principles than on rules. Table 1 summarises the changes introduced by the new standard which are expected to have a greater impact on the banking system.[12]

Table 1 • Main differences between the IAS 39 and the IFRS 9

	IAS 39	IFRS 9
Classification	The standard classifies financial assets into the following four categories: • Financial assets at fair value through profit or loss; • Held-to-maturity investments; • Loans and receivables; and • Available-for-sale financial assets.	The financialFinancial assets shall be classified into three categories: fair value through profit or loss, fair value through other comprehensive income and amortised cost. This classification depends on the evaluation of: • the contractual cash flows characteristics of the financial asset in question, in particular where it gives rise on specified dates to payment of principal and interest (Solely Payment of Principal and Interest - SPPI-test); and • the business model within which: - assets are held whose objective is to hold financial assets in order to collect contractual cash flows assets (hold-to-collect); - assets are held whose objective is achieved by both collecting contractual cash flows and selling financial assets (hold-to-collect-and-sell).
Measurement	The assets considered in the categories 'Held-to-maturity investments' and 'Loans and receivables' are measured at amortised cost. The assets considered in the category 'Available-for-sale financial assets' are measured at fair value through other comprehensive income, unless the instrument is subject to impairment, whose amount is presented in profit or loss.	The financial assets that do not pass the SPPI-test shall be measured at fair value, with changes in the fair value presented in profit or loss. An exception is made to capital instruments classified at fair value, where the entity may opt for recognising the differences in value through other comprehensive income (considering that these instruments are not held for trade and are not subject to the IFRS 3). The financial assets considered hold-to-collect that pass the SPPI-test are measured at amortised cost (unless the entity opts for measuring them at fair value), whereas the assets considered to be hold-to-collect-and-sell are measured at fair value.
Impairment model	Incurred credit loss model	Expected credit loss model

Source: Banco de Portugal.

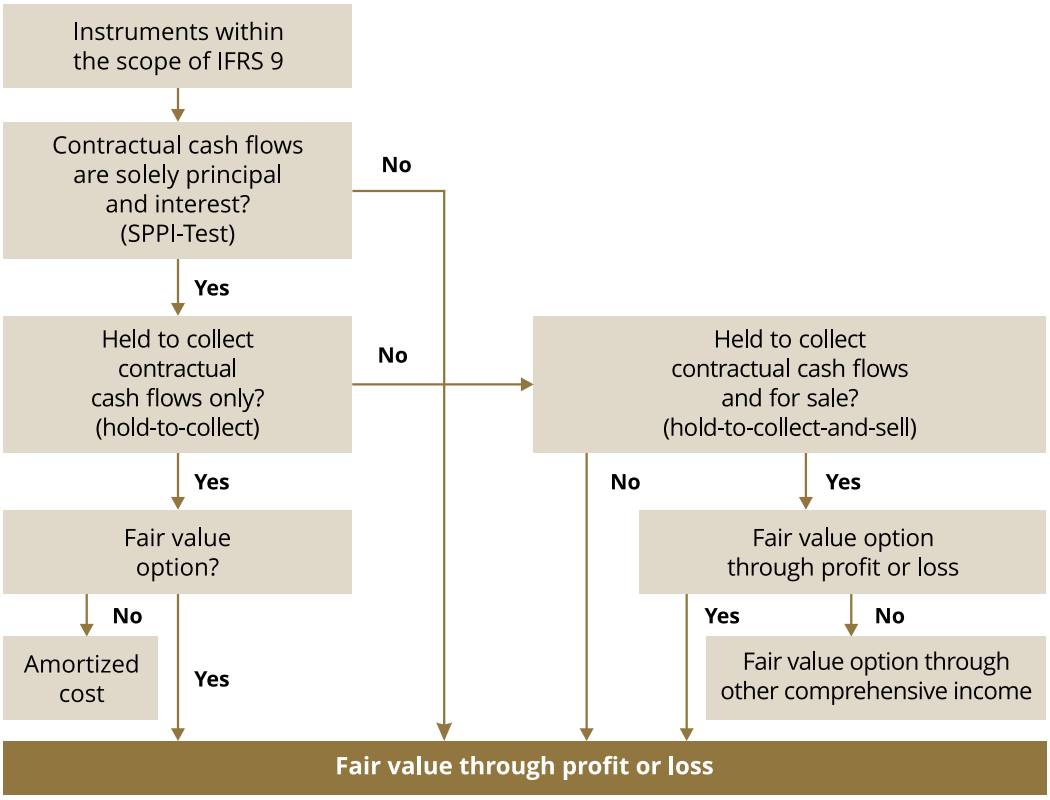
In the context of the IFRS 9, similarly to the standard currently in force, in principle, all instruments shall be initially measured at fair value. Subsequently, the asset shall be measured on the basis of both: (i) the contractual cash flow characteristics of the financial asset (Solely Payments of Principal and Interest – SPPI-test); and, sequentially, (ii) the entity's business model for managing the financial asset.

Where the cash flows resulting from the financial asset to be measured do not include the payment of principal and interest, the asset shall be measured at fair value. Otherwise, the financial asset is deemed to have passed the SPPI test, i.e. the contractual cash flows include the payment of principal and interest.

For the financial assets that have passed the SPPI test, the entity's business model for managing the financial asset shall be assessed. Regarding the aforementioned model, we shall distinguish between two different types of instruments: (i) instruments whose objective is

to hold assets in order to collect contractual cash flows (hold-to-collect), which may be measured at amortised cost;[13] and (ii) instruments whose objective is to hold assets in order to collect contractual cash flows as well as the proceeds from the sales (hold-to-collect-and-sell), which are measured at fair value (Figure 1).

Figure 1 • Classification and measurement of financial instruments according to the IFRS 9



Source: Adjusted from the IASB (2014).

Impairment model

Another major change between the IFRS 9 and the IAS 39 is the manner through which impairment losses are calculated, with a paradigm´s shift in the calculation model: from an incurred credit loss model we will move to an expected credit loss model. This change is the result of criticism addressed at the current model envisaged in the IAS 39, which contributes to the late recognition of losses, given the assets' intrinsic risks.

Therefore, the new impairment calculation model follows G20's recommendations to incorporate a higher volume of information on the future developments of risk parameters. A trigger event will thus cease to prevail as the single prior requirement for loss recognition. This differentiates between the incurred credit loss model and the expected credit loss model. In effect, the incurred credit loss model only recognises the impairment when the event materialises, and therefore the losses incurred between the timing when the event occurs and the timing when the event is reported will not be recognised.[14] The expected credit loss model anticipates the recognition of the loss, largely taking into account the macroeconomic scenarios and the deterioration of the resulting asset portfolio.

Table 2 describes the impairment calculation model. As previously mentioned, this is characterised by impairment recognition on an expected credit loss basis, to reflect the changes on the credit risk of financial assets.

This approach introduces three stages, which correspond to asset classifications as performing, underperforming and non-performing or credit-impaired (in the case of credit).

Stage 1 includes the whole financial asset portfolio (represented or not by securities), considered to be performing, with the calculation of a minimum impairment value. I.e., for all financial assets measured at amortised cost, the entity shall calculate an impairment amount considering a 12-month time horizon (12-month expected credit losses). The assets shall be considered performing as long as there is no significant increase in credit risk.

As regards underperforming assets (stage 2), i.e., those that are associated with a significant increase in credit risk, the impairment calculation was stipulated taking into account lifetime expected credit losses. At the time of the first underperformance by the counterparty, the asset moves to the next stage and is designated as non-performing (stage 3), where the reference lifetime for the impairment calculation is similar to that used in the previous stage.

Taking into account the changes to the model for the impairment calculation, it is expected that the definition of relevant events for the transfer of an asset from stage 1 to stage 2 (and vice-versa) will correspond to one of the main challenges for the governance of the institutions as well as for the auditors, regulators and supervisors.

The innovation of the model corresponds to the introduction of two new stages: stage 1 and stage 2. In effect, stage 3 corresponds roughly to current non-performing assets. A material increase in impairments regarding this class of assets as a result of the implementation of the IFRS 9 is not foreseeable.

Table 2 • Expected credit loss model of the IFRS 9

	Stage 1	Stage 2	Stage 3
Definition	Initial recognition	Operations with significant risk increase since recognition	Default operations
Classification	Performing	Underperforming	Non-performing ou Credit-impaired
Time horizon used in impairment calculation	12 months	Remaining term to maturity	Remaining term to maturity
Probability of default (PD)	PD 12 months Point-in-time	PD lifetime Point-in-time	100% Point-in-time
Loss given default (LGD)	Point-in-time	Point-in-time	Point-in-time
Recognition of interest in profit or loss (interest rate incidence)	Gross value	Gross value	Net value (of impairments)

Source: Banco de Portugal.

Interaction with prudential requirements

The loss impairment calculation model provided for in the IFRS 9 (i.e. based on expected loss) is not entirely unfamiliar in banks using the internal ratings-based approach for the calculation of minimum capital requirements.

This method considers that expected losses will be recognised through profit or loss affecting own funds, whereas unexpected losses shall be covered by capital requirements.

Expected losses, calculated for prudential purposes, are based on a model where risk parameters are adjusted for economic cycle fluctuations (Through-The-Cycle – TTC).[15] In turn, the risk parameters inherent in the calculation of expected losses for accounting purposes (IFRS 9) do not take into account this adjustment (they are Point-in-Time - PIT).[16] Table 3 presents the main differences between the expected credit loss model in the IFRS 9 context and the model considered for prudential purposes.

Table 3 • Main differences between expected credit loss models of the IFRS 9 and the internal ratings-based approach

	IFRS 9	Prudential Requirements
Existence of macroeconomic scenarios	At least 2 macroeconomic scenarios are required	No macroeconomic scenarios are required
Risk parameters estimates	Point-in-Time	Through-the-Cycle
Probability of default (PD)	12-month estimate or remaining term to maturity, depending on the respective stage (see Table 2)	12-month estimate

Source: Banco de Portugal.

Impairment accounting losses in banks using the abovementioned internal ratings-based approach are compared with losses calculated in the context of prudential requirements and the differences, if any, will impact the institutions' own funds. In particular, where the differences between the accounting impairment and the expected losses calculated for prudential purposes are positive, these may be added to Tier 2, up to a limit of 0.6 per cent of the total risk exposure amount. In the case of negative differences, these shall be deducted from Common Equity Tier 1 (CET 1).

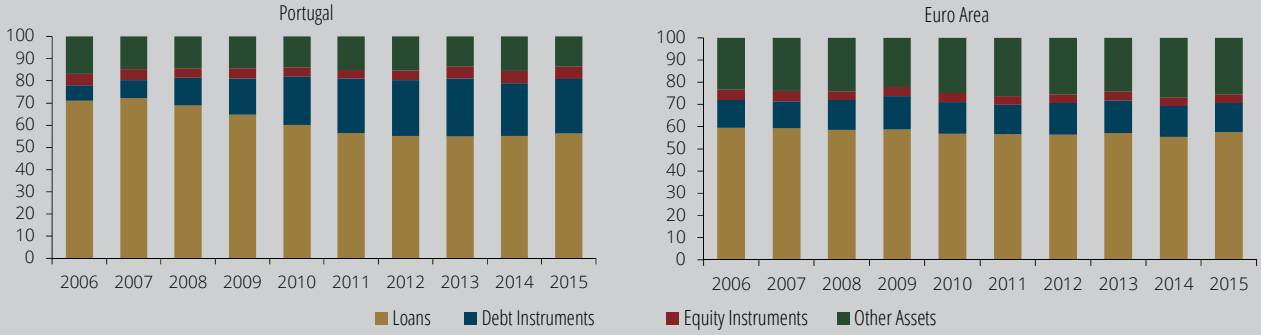
Therefore, no significant changes are expected in the manner in which the institutions using the internal ratings-based approach will assess their own funds. This facilitates the transition of this type of institution to the new standard and mitigates the potential impact of increasing impairment losses in the institutions' capital ratios.

In the case of banks using the standardised approach, an impact may be expected in capital ratios exceeding that foreseeable for banks using the internal ratings-based approach. This larger impact results from the fact that they have different starting points. In banks using the standardised approach, losses used for the calculation of prudential requirements are the same used for accounting purposes, with no own fund adjustments. Therefore, as there is no transitional period, the potential increase resulting from the transition to a new standard will chiefly have an impact, via profit or loss, on the own funds of banks using the standardised approach, with no adjustments, as in the case of banks using the internal ratings-based approach.[17]

Potential impact on the banking system and financial stability

Chart 1 clearly shows that the credit portfolio is materially far higher than the other financial assets, in both the Portuguese and the euro area banking system (representing,

Chart 1 • Decomposition of the banking system total assets | Per cent



Source: European Central Bank.

on average, 60 per cent of the assets). In this context, the impacts on the banking system resulting from the introduction of the IFRS 9 are chiefly due to the move from an incurred credit loss model to an expected credit loss model, for the calculation of credit impairments.

The implementation of the new standard will imply potential benefits for the soundness of the financial system, and therefore for financial stability, as described below. Nevertheless, some aspects cannot be neglected and should deserve the attention of the entities subject to the new standard such as auditors, regulators and supervisors.

The IFRS 9, by including prospective information on macroeconomic and financial developments, will boost the early recognition of losses. This early loss recognition will foster the adjustment of banks to adverse scenarios through, inter alia, a more conservative profit distribution policy (Novotny-Farkas, 2015), a more prudent attitude in lending (Akins et al., 2015) and the early issue of capital instruments. As a result of this behaviour, some mitigation should be expected of the economic cycle in banks' profit or loss. This will occur if the institutions build up sufficient impairments, in the upward phase of the economic cycle, enabling them to prevent, in the downward phase of the economic cycle, excessive impairments, and therefore to face conditions better supporting the maintenance of credit flows to the economy.

In this sense, the IFRS 9 may partly adjust the pro-cyclicality characterising the standard currently in force (IAS 39), due to the more gradual loss recognition. However, there is some uncertainty regarding the correction level of pro-cyclicality. In effect, at the time of reversal of the economic cycle, i.e. at the start of the recessive phase, the risk for the financial instruments may increase significantly (condition required for the move from stage 1 to stage 2), which translates into a higher impairment value, with a potential decline in lending. Moreover, the fact that, in their risk evaluation, banks consider similar economic projections may also amplify the start of the downward phase of the economic cycle. Nonetheless, the introduction of the IFRS 9 must prevent a lately impairment recognition, only at the time of the economic cycle's recessive phase.

On the other hand, the fact that the new expected credit loss model is characterised as being Point-in-Time may promote its pro-cyclicality. This characteristic may also result in increased volatility in profit or loss and therefore in capital, given that banks will tend to use economic projections for relatively short horizons, instead of projections for longer horizons consistent with the maturity of some financial assets (Domikowsky et al., 2015).

Considering that the consequences for financial stability of the implementation of the new standard will depend on the manner in which it is implemented by the agents, it is highly relevant to signal the increased subjectivity introduced by the new standard. Contrary to the recent trend observed in regulations,[18] the IFRS 9 provides incentives to the use of internal models, with particular stress on the preparation of macroeconomic scenarios, which will be the basis for the calculation of risk parameters used to assess impairment losses. Associated with the absence of objective definitions regarding the default concept, as well as the criteria for the transfer of financial instruments across the different stages that make up the impairment model, this boosts the use of professional judgement, giving greater openness to managerial discretion. This increase in subjectivity introduced by the new standard is deemed to be one of its main disadvantages, given the negative impact it may have on the comparability and consistency of financial statements between the different entities (BCBS, 2015 and EFRAG, 2015).

The increased effort in dissemination and transparency, namely as regards the assumptions, models and techniques used, is key to mitigate the mentioned negative impacts (Novotny-Farkas, 2015). In this

sense, in 2015 the Basle Committee issued a set of principles/guidelines that should be taken into account in the implementation of the new standard, either by financial entities or by auditors and supervisors, especially the adoption of appropriate risk analysis criteria and practices and the adoption of an internal control systems able to monitor the implementation of the new standard and the corresponding calculation of impairment losses. EBA's guidelines issued in 2016 show wider scope than those previously mentioned, revealing the need for documentation supporting the calculation of the impairment model risk parameters (namely as regards the PD and the LGD), including some information on the factors that should be taken into account in the building up of macroeconomic scenarios, the minimum criteria to be considered in customer risk assessment and the procedures to be used in the validation of the models implemented.

Another aspect is related to the potential implications of the new standard in structuring the products provided by credit institutions to their customers. In this context, a first reference should be made to the incentive to reduce the maturity of loans granted by the institutions, in order to mitigate the potential increase in impairment losses resulting from the transfer of loans from stage 1 to stage 2, given that it involves a change in the time horizon for the calculation of losses. This possibility is more likely to occur in loans to corporations with medium maturities instead of loans for house purchase with usually long maturities, where the increase in losses is not proportional to their original maturity.

In addition to the maturity, the new standard may also affect the price/cost inherent in the products provided by banking institutions to their customers. Changes may be the result of either the implementation of the IFRS 9, which implies the calculation of impairments for the whole portfolio[19] (stage 1 of the model) with the respective loss recognition, or the costs resulting from future investments related to the implementation of the new standard. This increase in total costs may be offset by a rise in spreads and commissions charged by the institutions to final customers. It should be added that, according to the study prepared by Deloitte (2016), most banks surveyed point to an increase in the price of the products/services provided. The price rise of products/services resulting from the new impairment model implies the recognition of losses for the whole credit portfolio (with a 12-month time horizon) and, as a result, they reflect the portfolio-implied risk earlier, thus contributing to a more appropriate profitability-risk ratio. This positively influences the soundness of banking institutions, favouring financial stability.

Other aspects resulting chiefly from the transition to the new standard may, in the short run, require some adjustment effort by the entities, namely in the development of new infrastructures and allocation of technical resources, in order to gather all the information required within the scope of the new impairment calculation model provided for in the new standard.

According to information extracted from studies carried out by Deloitte (2016), EY (2016) and EBA (2016), this investment has not been fully made. 50 per cent of the respondent banks claimed that, currently, they did not have in place the necessary infrastructures to implement this new model (Deloitte, 2016). The vast majority of the respondents project the investment required at high levels and chiefly addressed at IT for data collection, data quality analysis and development of models to estimate impairment losses.

As a result of the above, however, the institutions, chiefly those whose infrastructures deserve substantial development, may build up more sophisticated systems enabling them to analyse, based on a greater volume of available information, financial assets' intrinsic risk, thus contributing to a better evaluation of credit risk and timeliness, when recognising the respective losses. These developments, which are expected to be broadly based across the whole financial system, will also contribute to the soundness of the financial system.

Finally, the potential increase in the value of impairments to be recognized as a result of the transition to the new standard is another relevant aspect. In effect, the standard requires that a significant share of the asset portfolio be subject to impairments at least equivalent to the losses expected within one year (stage 1 of the model) or expected during the maturity of the loan (stage 2 of the model). The surveys conducted by Deloitte (2016), EY (2016) and EBA (2016) estimate an increase between 25 and 30 per cent of impairments, considering samples of 91 banks in different regions of the world (Asia, America, Europe and Africa), 36 European banks and 58 European banks respectively. Such impact will be first felt on profit or loss and capital.

In this respect, some regulatory proposals have been submitted to gradually recognise this potential impact on capital by the Basle Committee (BCBS, 2017), EBA (EBA, 2017) and the European Commission. Two public proposals are currently under discussion. The European Commission's proposal incorporates the introduction of a new Article in Regulation (EU) No 575/2013 of the European Parliament and of the Council, within the scope of its revision, specifically targeting the implementation of a "dynamic" process and the gradual recognition (5-year maturity) of the impact on capital of the potential increase in impairments resulting from the transition from the IAS 39 to the IFRS 9. A dynamic process is based on an approach considering not only the impact on own funds at the time of transition, but also the impact during the transition period, chiefly resulting from the impairments calculated during stage 1 and stage 2 of the new model. EBA's proposal is based on a static and gradual procedure (4-year maturity). A static approach involves the calculation of the impact resulting from an increase in own fund impairments at the time of transition to the new standard.

Conclusion

The earliest recognition of impairment losses to an amount appropriate to financial asset credit risk will create more favourable conditions for the preservation of financial stability. However, institutions, auditors, supervisors and regulators should pay special attention to some aspects related to the introduction of the new standard, mainly as regards pro-cyclicality, profit or loss volatility, and the increase in subjectivity.

A first line of defence of the banking system, to mitigate profit or loss volatility in capital and some pro-cyclicality elements of the standard in profit or loss, may include the building up of capital reserves during an upward phase of the cycle, in order to successfully address the early recognition of impairment losses determined by the model, following a recessive period. Moreover, the use of forecast models with a high sophistication level, making it possible to credibly build macroeconomic scenarios for longer horizons and determine the upward/downward phases of the cycle within a reasonable time, may also contribute to reduce the abovementioned volatility.

Finally, as regards the increase in discretion expected with the introduction to the new standard, Banco de Portugal may resort to the possibility of issuing guidelines on certain aspects of the new standard, and will do it if deemed necessary, taking into account, on the one hand, the potential costs associated with subjectivity and discretion in the new standard (for instance the comparability of the financial situation between institutions) and on the other hand the need to grant to the institutions under the supervision of Banco de Portugal the same conditions provided to its European counterparts, which will take into consideration the work undertaken in the SSM context.

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3. Banking sector's exposure to mortgage loans: analysis of LTV and LTI/DSTI and implications for financial stability

Summary

A number of factors explain the importance of the real estate sector for financial stability. The fact that construction and real estate purchases are mainly financed through bank credit, with real estate being given as a guarantee, implies that disturbances in the real estate market may expose the banking sector to credit risk, with major repercussions on its financial situation. In turn, financing conditions are crucial to developments in the real estate market, thereby creating a close connection between the two sectors with a potentially systemic impact.

Moreover, the weight of housing in household wealth and the fact that mortgage loans usually represents the main source of household indebtedness implies that changes in real estate prices or mortgage credit conditions may have significant impact on household balance sheets as well as on consumption and investment decisions. In addition, taking into account the importance of the construction sector for economic activity, developments in the real estate market may also have major implications for economic activity.

Indeed, risks stemming from the real estate market have triggered several financial crises. Speculative bubbles originated in this market have been observed in several countries in the period immediately before the crisis, leading to abrupt price corrections and a sharp increase in borrowers' default. In Portugal, despite the high growth of mortgage loans in the pre-crisis period, house prices remained in line with fundamentals (see Lourenço and Rodrigues, 2015). Although the level of borrowers' default is currently higher than in the period before the crisis it is far lower than in other credit segments and in other countries. This may be explained by the fact that mortgage loans in Portugal are usually granted at a variable rate[20] and with long maturities, which in the current environment of very low interest rates has helped contain the debt burden of borrowers. Lending conditions before the onset of the economic and financial crisis may also explain lower default levels. According to Costa (2012) – who estimated the probability of default according to household characteristics – mortgage loans were mainly concentrated in households with lower probability of default, contrasting with consumer credit. However, despite the containment of default, banks' portfolios have a significant volume of real estate repossessed due to non-performing mortgages.

The Portuguese banking system's high exposure to mortgages,[21] the weight of housing in household wealth,[22] the risk of interest rate hikes, even if gradual, and their implications for borrowers' default highlight the need to monitor and evaluate resulting risks. This analysis is made through the LTV (loan-to-value) and the LTI/DSTI (loan-to-income/debt service-to-income) indicators, frequently used to characterise risks resulting from this exposure.

Definition of the indicators and information source

The LTV, LTI and DSTI indicators are useful to assess credit risk associated with bank exposure to mortgages. The LTI/DSTI may signal the borrower's default probability, by correlating the loan's amount/monthly instalment with the borrower's income. In turn, the LTV, by relating the amount of the loan with the value of the asset given as collateral, provides information on potential losses for the financial system in the event of the borrower's default (being also likely to affect the probability of default[23]).

These indicators may be calculated for the mortgage loan at origination and subsequently updated. Although current values are more relevant to characterise risks resulting

from exposure to mortgages, their value at origination makes it possible to monitor the evolution of banks' behaviour regarding risk at the time credit is granted. The value of these variables at origination is also a relevant benchmark for macroprudential policy, as the imposition of limits on LTV, LTI or DSTI falls on the values of these variables when new loans are granted. The information on individual credit contracts allows the analysis of these indicators, not only in aggregate terms, but also regarding their distribution, making it possible to detect higher risk segments. Thus, the usefulness of this information for analysis and to support macroprudential policy decisions can be considerably increased.

The indicators analysed were calculated on the basis of information on credit contracts relating to immovable property outstanding on 31 December 2015, reported to Banco de Portugal by the eight major banking groups.[24] These credit contracts account for nearly 98% of the total number of outstanding loans in December 2015 and almost 92% of the total amount of mortgage loans.

Most credit outstanding at the end of 2015 was granted after the end of the 1990s, reaching a peak just before the financial crisis. The stock of loans granted by the resident financial system for house purchase has declined since 2013, reflecting the net repayment of this type of debt. However, the annual flow of new loans for house purchase has been increasing since 2013 (Chart 1).

As mentioned above, the indicators under analysis can be calculated at loan origination to characterise the conditions practiced by banks when they grant credit and updated on a reference date, as indicators of risk associated with these credit contracts.

LTV at origination is calculated as the ratio between the initial loan amount and (i) the purchase price (LTVop) or (ii) the value of the first appraisal (LTVoa) of the real estate pledged as collateral.

LTV at 31 December 2015 (LTV) is calculated as the ratio between the amount of credit overdue on that date and the value, updated on the same date, of the latest bank valuation of the real estate pledged as collateral.[25]

LTI at origination (LTIo) corresponds to the ratio between the initial loan amount and the borrower gross annual income at origination.

LTI at 31 December 2015 (LTI) is given by the ratio between the total amount of credit overdue on that date and the latest borrower's gross annual income reported by the credit institution.[26]

DSTI at origination (DSTIo) is calculated as the ratio between the monthly instalment at origination (including charges such as interest and commissions excluding insurance) and the value of the borrower's gross monthly income at origination.

DSTI at 31 December 2015 (DSTI) corresponds to the ratio between the monthly instalment at that date and the value of the latest information on the borrower's monthly gross income reported by the credit institution.

The analysis of the reported information made it possible to identify a number of questions with implications for the calculation of the indicators concerned. These are chiefly related to: (i) the existence of multiple credit contracts secured by the same real estate property (e.g. related loan contracts[27] and other contracts provided they are secured by the same real estate property); and (ii) the existence of credit contracts for house purchase secured by multiple real estate properties.

To address these issues and to better reflect the intended purpose of this analysis, the following was considered:

- For the numerator of LTV and LTI the total amount of loans secured by the same real estate was aggregated (in the case of the DSTI numerator the corresponding monthly instalments were aggregated);[28]
- Where the same credit contract is secured by several real estate properties, their value was aggregated to calculate the total value of the collateral securing the loan (LTV denominator).

In addition, a number of observations with extreme values in some variables (outliers) were excluded from the analysis, to avoid biased results where the information had little consistency.

Analysis of the LTV and LTI/DSTI indicators

Situation at 31 December 2015

Table 1 illustrates the average values at origination for the indicators under review (for total credit contracts for house purchase and related loan contracts outstanding at 31 December 2015 and for those originated in 2015) and the size of the sample considered for their calculation.

As it can be seen, the average values of the indicators at origination of loans granted in 2015 are far lower than those of total credit in the portfolios of banks at the end of this year, reflecting tighter credit conditions. LTI and LTV at origination relating to mortgages granted in 2015 stood at 4% and 78% respectively (when calculated on the basis of the purchase price of the real estate, or 71.2%, when calculated on the basis of the first appraisal).

Although in aggregate terms, the values at origination of credit outstanding at the end of 2015 of the indicators do not seem to show significant risks regarding bank exposure to mortgage loans, the analysis of the distribution of mortgage loans per percentile indicates the existence of a significant number of mortgage loans with a higher degree of risk (e.g. 25% of mortgages had LTVop above 100 or LTIo above 6).

Table 1 • Indicators at origination and representativeness of the respective sample

Indicators at origination	Total loans		Total loans, per percentile			Loans granted in 2015	
	Average	Sample (%)	p25	p50	p75	Average	Sample (%)
LTVop (%)	**88.9**	24.5	74.5	94.7	100	**78**	37.9
LTVoa (%)	**82.3**	92.8	56.5	78.6	90	**71.2**	87.7
LTIo (Number of times)	**4.6**	58.8	2.1	3.8	6	**4**	80.5
DSTIo (%)	**34.7**	26.3	11.3	21.3	34.8	**27.8**	49.3

Source: Banco de Portugal.
Note: The sample corresponds to the percentage of credit contracts for which it was possible to calculate the indicators, taking into account data availability.

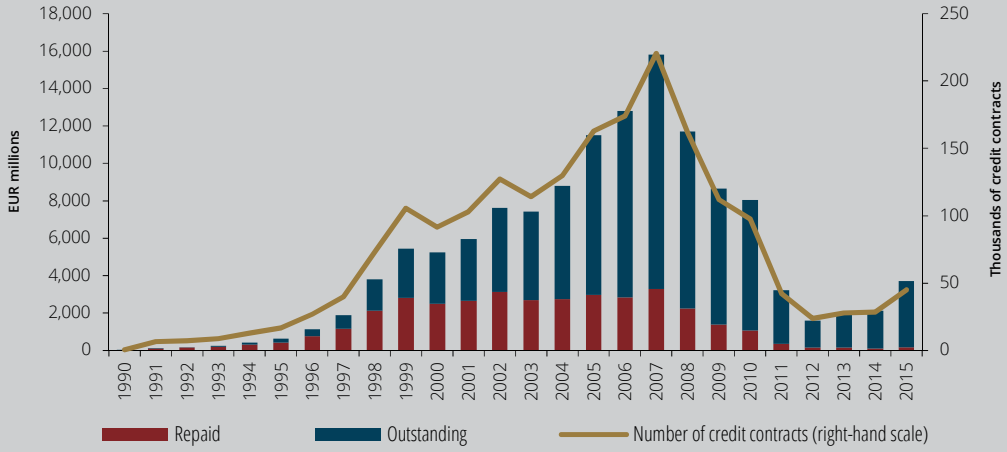


Chart 1 • Amount of credit outstanding and number of mortgage loans at 31 December 2015, broken down by year of origin

Source: Banco de Portugal.

However, the values of the indicators at the end of 2015 (3.6% for LTI and 59.8% for LTV) are lower than the values at origination for total credit (Table 2), mainly reflecting the fact that part of the loan has already been repaid.

Table 2 • Indicators at 31 December 2015 and representativeness of the respective sample

Indicators at 31 December 2015	Total loans			Total loans, per percentile		
	Average	Sample (%)	**Weighted average**	p25	p50	p75
LTV (%)	**59.8**	96.7	**77.0**	29.9	54.3	77.0
LTI (Number of times)	**3.6**	60.5	**5.5**	1.1	2.6	5.0
DSTI (%)	**20.1**	60.4	**25**	9.1	15.9	25.8

Source: Banco de Portugal.

It should be noted that the treatment given to data (aggregation of loans) and some caveats to reported information restrict the number of observations available for the calculation of the indicators. The representativeness of the sample is more reduced regarding the LTV at origination, based on the purchase price, and the DSTI at origination, given that information reported on the price of the real estate property and the first monthly instalment was limited.

The indicators in 2015 weighted by the amount of credit overdue are far higher, indicating that credit with higher values in these indicators are associated with larger amounts of credit.

In so far as the LTI chiefly conditions the loan repayment capacity, and the LTV affects the losses incurred by banks in the event of default (even though it may also affect the probability of default), risk associated with a mortgage loan largely arises from the combination of the two indicators. Indeed, when the borrower's income is reduced compared with the amount of the loan (high LTI), this may not represent a significant risk for the institution if credit is secured by a real estate property whose value is far higher than the amount of the loan outstanding (low LTV).

For illustrative purposes, Table 3 highlights, the various categories of risk combining sets of the two indicators. Loans with higher risk (marked in dark shade) are the credit contracts simultaneously characterised by LTV above 100% and LTI above 6. Loans classified in the following category of higher risk (marked in medium shade) were defined as the remaining credit contracts with LTV above 80% and LTI above 4. Credit contracts with LTV below 80% and LTI below 4 (marked in light shade) have the lowest risk. As illustrated, the category with the highest risk corresponds to 7.6% of the amount of credit outstanding and the category with medium risk corresponds to 53.7% of credit.

Table 3 • Credit outstanding at 31 December 2015, broken down by intervals of LTV/LTI | Per cent

LTV	LTI					Total
	<= 2	]2 - 4]	]4 - 6]	]6 - 8]	>8	
<= 30	6.0	1.7	0.5	0.2	0.2	**8.6**
]30 - 60]	8.2	9.9	4.9	2.2	2.6	**27.8**
]60 - 80]	3.4	9.5	7.8	4.2	5.4	**30.4**
]80 - 100]	1.2	4.6	5.7	3.7	5.5	**20.7**
]100 - 120]	0.2	0.8	1.0	0.8	1.8	**4.6**
>120	0.5	1.2	1.2	2.7	2.2	**7.9**
	19.6	27.7	21.1	13.9	17.7	**100.0**
	38.7		53.7		7.6	

Source: Banco de Portugal.

Conditions of credit granted in 2015 were, on average, less permissive, with higher risk credit representing around 2% of the total (Table 4).

Table 4 • Credit granted in 2015, broken down by intervals of LTV/LTI | Per cent

LTVoa	LTIo					Total
	<= 2	]2 - 4]	]4 - 6]	]6 - 8]	>8	
<= 30	1.4	0.7	0.3	0.1	0.1	**2.6**
]30 - 60]	5.5	6.6	3.3	1.3	2.0	**18.8**
]60 - 80]	8.8	17.1	12.0	5.1	5.6	**48.6**
]80 - 100]	2.3	6.9	7.6	3.5	3.6	**24.0**
]100 - 120]	0.2	0.4	0.5	0.4	0.4	**2.0**
>120	0.2	0.5	2.0	1.0	0.4	**4.1**
	18.5	32.2	25.8	11.4	12.1	**100.0**
	40.1		57.7		2.2	

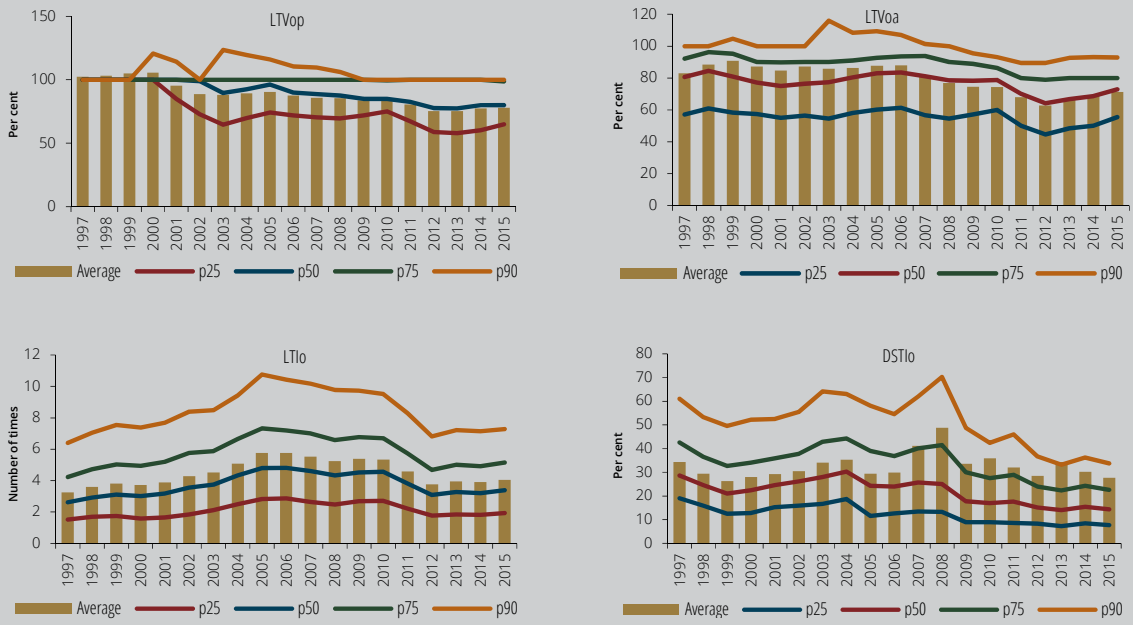
Source: Banco de Portugal.

Evolution of indicators at origination

Given that the current banking exposure to mortgage loans results from loans taken out during the last two decades, an analysis of the LTV and LTI/DSTI indicators at origination, throughout this period, provides information on the banking practices that gave rise to the current risks.

The annual average LTV at origination calculated on the basis of the purchase price for the period 1997-2015 stood above 100% during the first years revealing less tight conditions regarding the granting of credit for house purchase (Chart 2). From 2000 onwards there has been a progressive decline in this indicator, which recorded a slight reversal in the most recent years. The indicators calculated on the basis of the bank appraisal are lower, resulting from the fact that the appraisal amount systematically exceeds the purchase price of real estate property.[29]

Chart 2 • Indicators, broken down by origination year of credit contracts (average values and percentiles)



Source: Banco de Portugal.

The annual average LTI at origination of credit contracts between 2004 and 2010 recorded annual average values above 5. It should be noted that the LTI started a downward trend after the LTV, translating a rise in the purchase price of real estate property higher than the borrowers' income levels.

As to the DSTI, the growth of this indicator in the initial period was less significant. Although the samples underlying the calculation of the various indicators do not fully coincide, the different evolution of the DSTI, compared with the LTI, is partly attributable to the rise in the average maturity of mortgage, diluting the effect of the increase in credit on the monthly instalment.

As it can be seen through the analysis by percentile, the distribution of the LTI and DSTI is characterised by high dispersion around the average (as compared to the LTV).

Although developments in the indicators analysed reflect tighter credit standards on loans for house purchase in the most recent periods, the analysis of histograms of new credit contracts in 2015 reveals the existence of a still significant number of contracts with quite high values for the various indicators (Chart 3).

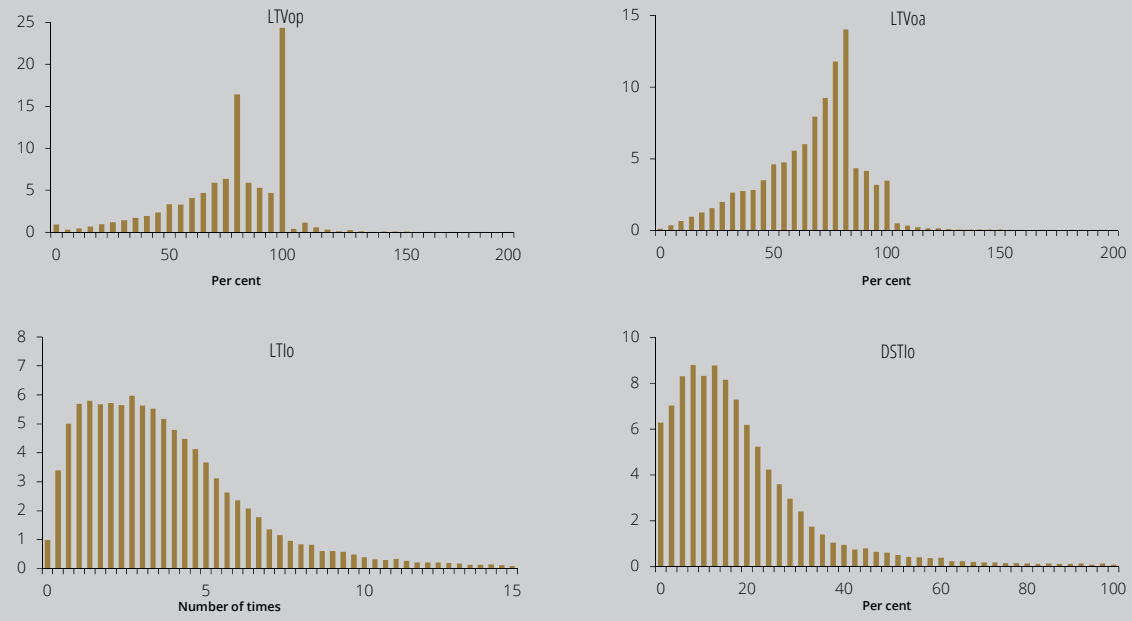
The information provided by credit institutions on banking practices regarding mortgage loans, confirm tighter credit standards on loans for house purchase in the last few years. The analysis of credit risk is based on solvency criteria and collateral valuation. However, there is higher flexibility in the assessment of the LTV, in particular in lending for the purchase of real estate property held in banks' portfolios and real estate property held by construction companies financed by the same credit institution and also when the loan is also secured by a financial collateral. These factors are also taken into consideration to calculate the loan spread.

Conditions of loan contracts

The developments in the various variables characterising credit contracts for house purchase shows some regular banking practices applied to lending.

After a substantial fall in the wake of the financial crisis, the interest rate on new loans started to increase from 2010 onwards. These

Chart 3 • Histograms of credit contracts granted in 2015, by indicator



Source: Banco de Portugal.

developments were chiefly due to a rise in spreads to counterbalance the sharp fall in the interest rate index (6-month Euribor). From 2012 interest rates declined, initially due to a fall in the index as a reflection of monetary policy and, subsequently, as a result of the reduction in spreads mirroring greater competition between institutions. These developments have also been influenced by the recovery of economic activity (Chart 4). Reflecting tighter credit conditions, the average maturity of credit contracts decreased from 35.5 years in 2006 to 32.5 years in 2015, remaining however at a higher level than in the 1990s (Chart 5). This variable is important to calculate the risk associated with a credit contract, as in a loan with a shorter period, maturity can be extended to facilitate loan restructuring in the event of repayment difficulties by the borrower.

Conclusion

The analysis of the LTV, LTI and DSTI indicators since 1997 has shown the existence of less tight conditions for the expansion of mortgage loans towards the end of the 1990s and in the beginning of this century. In fact, for a number of years, credit granted exceeded the loan collateral value and exceeded more than five times the annual income of the borrower.

This situation changed gradually after the onset of the financial crisis, with the indicators analysed recording a significant reduction. The past few years seem to indicate some reversal

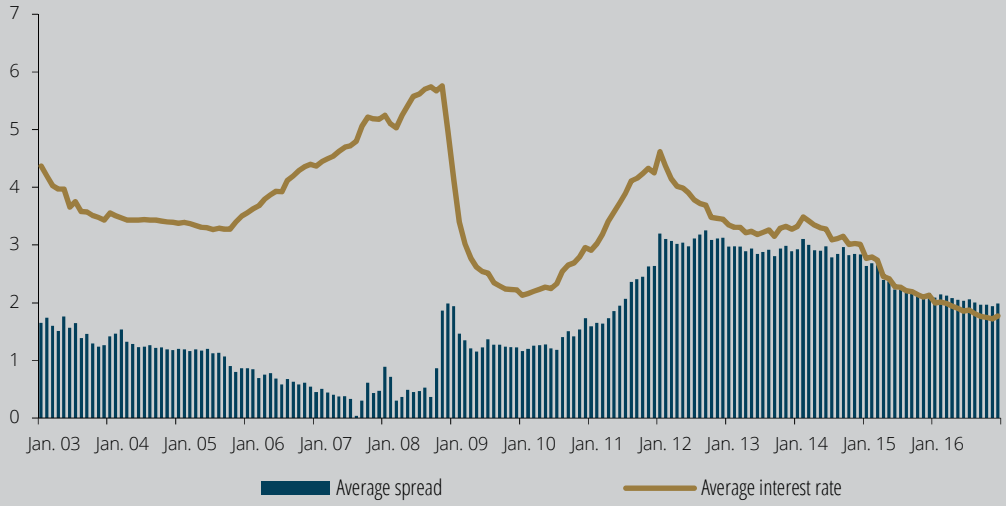


Chart 4 • Interest rate and spreads of new loans for house purchase | Per cent

Source: Banco de Portugal.
Note: Average spread calculated as the difference between the average interest rate of new bank loans for house purchase with an initial rate fixation period of up to one year and 6-month Euribor.

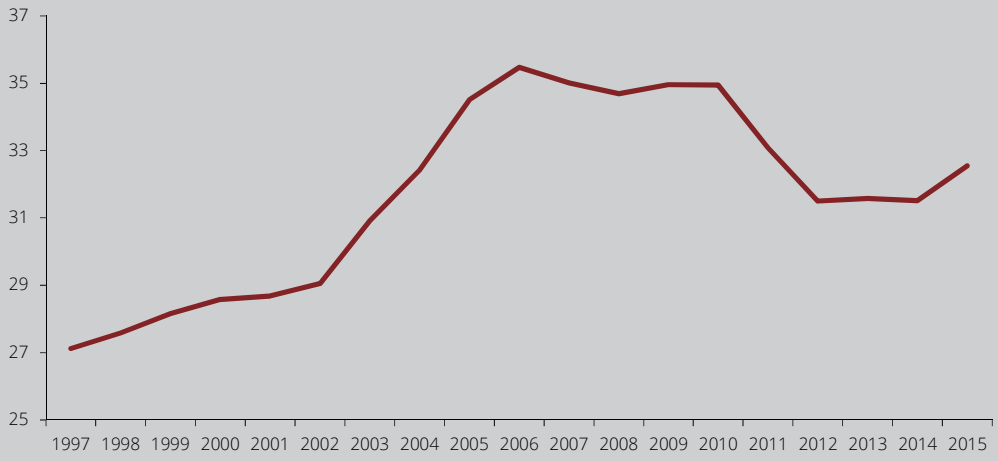


Chart 5 • Maturity of credit contracts for house purchase | Number of years

Source: Banco de Portugal.

of this trend, with the average LTV and LTI at origination recording a slight rise from 2014 onwards. Equally significant is the fact that the distribution of mortgage loans still shows a considerable number of loans with very high values in the indicators analysed. However, the percentage of mortgages that combine the two indicators in the intervals with higher risk is relatively low.

Although in Portugal developments in mortgage loans have not given rise to significant disruption in financial stability, the high exposure of the banking sector to this market warrants continued monitoring of the risk associated with mortgages. The current environment of higher economic growth, rising real estate prices and higher competition between institutions may imply some easing of credit standards. The indicators analysed, by correlating the amount of the loan with the value of collateral and the borrower's financial capacity, are particularly relevant for assessing credit risk associated with the exposure to mortgage loans.

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Notes

1. Ricardo Martinho, João Oliveira e Vitor Oliveira (2017), Bank Profitability and Macroeconomic Factors. Mimeo.

2. As presented in the Special issue 2 "Efficiency of the Portuguese banking system", *Financial Stability Report*, November 2016.

3. In parallel to banks' situation, the relatively high levels of profits were not translated in a higher level of savings nor in higher capitalisation levels of non-financial corporations, as a result of the dividend distribution policies followed before the financial and economic crisis.

4. In particular, between 2000 and 2010, the weight of loans for house purchase in total loans increased from 36% to 46% and of loans to non-financial corporations for construction and real estate activities increased from 12% to 15%.

5. The marginally positive level observed in 2015 was supported by the high contribution of non-recurrent items, namely the results of financial operations, following the broad-based decrease in sovereign bond yields.

6. In any case, it is worth highlighting that part of the increase in customer resources was the result of the transfer from off-balance sheet resources which was facilitated by the context of greater risk aversion and preference of bank customers for products less exposed to market developments.

7. Defined as 300 basis points over the reference rate of interbank market for the relevant maturity (see Instruction of Banco de Portugal No 28/2011).

8. The benchmark cost-to-income corresponds to the 20th percentile of the cost-to-income distribution in September 2016 for SSM countries.

9. This value was adjusted to reflect recent changes in the consolidation perimeter of some banking groups.

10. http://www.eba.europa.eu/documents/10180/16460/EBA+BS+2011+173+Recommendation+FINAL.pdf/b533b82c-2621-42ff-b90e-96c081e1b598

11. https://www.bportugal.pt/page/medidas-macroprudenciais?mlid=859

12. Changes are also envisaged in hedge accounting, but these are not addressed in this document.

13. Unless the institution opts for measurement at fair value.

14. This is mitigated by the recognition of impairment losses known as Incurred But Not Reported (IBNR).

15. Terminology used to indicate the calculation of losses considering at least one full economic cycle instead of a given timing.

16. Terminology used to characterise impairment calculation at a given timing.

17. In the past, the institutions using the standardised approach underwent an adjustment in own funds resulting from general provisions. However, the difference between general and specific provisions is not relevant in the current context because, on the one hand, Notice of Banco de Portugal No 3/95 (implementing the IAS 39) has been revoked and, on the other hand, impairments assessed under the IAS 39 are, as a whole, deemed to be adjustments for specific credit risk. However, taking into account the dual treatment of impairments between institutions opting for the standardised approach and those opting for the internal ratings-based approach, in the context of discussing the impacts of the IFRS 9, the Basle Committee (BCBS, 2017) has decided to maintain the distinction between specific and general provisions, recommending regulators to issue guidelines to classify the impairments resulting from an expected credit loss model under specific and general losses, in order to ensure the consistency of treatment among institutions.

18. As, for instance, the introduction of the leverage ratio in order to mitigate model´s risk in the calculation of the minimum capital requirements.

19. It should be recalled that the IAS 39 already implied the calculation of impairment losses known as IBNR. However, given the model for the new standard (prospective), this value of the losses associated with financial assets allocated to stage 1 is expected to be higher than that resulting from the IBNR.

20. Indexed to money market interest rates.

21. Mortgage loans account approximately for 80% of credit granted to households and virtually half of total credit granted by the banking sector.

22. In Portugal the percentage of households owning their own homes is 75%, compared with an average of 70% in the European Union.

23. A low LTV (higher value real estate property compared to a given amount of credit) may be a higher incentive to repay the loan, as default, implying the loss of the real estate property pledged as collateral, brings about higher costs for the borrower.

24. Information reported by the eight major banking groups (Novo Banco, Banco BPI, Banco Santander Totta, Millennium BCP, Caixa Geral de Depósitos, Montepio Geral, Banco Nacional do Funchal – BANIF – and Grupo de Crédito Agrícola) pursuant to Circular Letters No 107/2015/DSC and No 6/2016/DES.

25. Given that in many cases the latest appraisal of the real estate property was made before December 2015, and in order for the indicator to reflect adequately the risk associated with the credit in question, the appraisals used for the calculation of the denominator were updated on the basis of a ratio calculated from developments in the Housing Price Index compiled and disclosed by Statistics Portugal (Instituto Nacional de Estatística).

26. Although in many cases the latest update of the borrower's income value was made well before 2015, no correction was made, considering the difficulty in selecting an adequate indicator for the purpose – the consumer price index or the average change in disposable income would not take into account the evolution of individual income over the borrower's life cycle which should be considered given the maturity of mortgage loans.

27. A related loan contract is a credit contract secured by a mortgage, totally or partially on a real estate property that simultaneously also secures a credit contract for house purchase concluded with the same credit institution, under the terms laid down in Article 1 (2) of Decree-Law No 51/2007 of 7 March 2007.

28. In the case of the LTV and LTI (and DSTI) at origination, aggregation only included the amounts (or instalments) of loans secured by the same real estate property where such loans had been contracted on the origination year of the main contract. In fact, where the second mortgage has been granted several years after the first, it would make no sense to aggregate the new loan to the previous loan amounts, as when the new loan is granted, the first has already been partially repaid. Moreover, it would make no sense to consider the new loan on the origination date of the first loan.

29. This differential, which may have resulted from the existence of tax incentives for the undervaluation of the purchase price, may also reveal a tendency to overvaluation of the appraisal, particularly marked in years of less tight credit conditions.