



MACRO-PRUDENTIAL POLICY IN PORTUGAL: OBJECTIVES AND INSTRUMENTS

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1. Background

The international financial crisis showed that the accumulation of imbalances and vulnerabilities associated with the financial sector and strong interconnectedness within this sector may cause risks to financial stability, with significant costs for the economy as a whole. This evidence has given rise to profound reforms in financial regulation and supervision at the global level, in particular to the development of an appropriate framework for macro-prudential policy, aimed at strengthening the resilience of the financial system and promoting financial stability. These reforms are substantiated in the Basel III agreement and in the European Union regulatory framework,¹ which define the conditions for applying a set of instruments available for the purpose of implementing macro-prudential policy.

In this context, the European Systemic Risk Board (ESRB), which is the entity responsible for coordinating macro-prudential policy in the European Union, has issued recommendations to the national macro-prudential authorities on the implementation of this policy. In particular, the ESRB has defined a set of intermediate objectives for implementing macro-prudential policy and has established an indicative list of instruments available in order to pursue the identified objectives. In accordance with Recommendation ESRB/2013/1,² the national macro-prudential authorities shall define the intermediate objectives and select the instruments for the implementation of the macro-prudential policy by the end of 2014, and shall define their policy strategy by the end of 2015. Regulation (EU) No 575/2013 (CRR) and the transposition of Directive 2013/36/EU (CRD IV) to national law, in October 2014, provided the set of instruments envisaged therein.

Banco de Portugal as the national competent authority in macro-prudential policy and taking into account its objective of strengthening the resilience of the financial sector, explicitly provided for in its Organic Law, is responsible for defining a strategy for the implementation of this policy.³

It is important to note that, although macro-prudential policy falls under the responsibility of the national authorities, the European Central Bank (ECB), within the framework of the Banking Union's Single Supervisory Mechanism (SSM), may propose stricter requirements than those applied by the national authorities regarding the measures addressed to the banking sector foreseen in EU legislation.⁴ This need to interact with the ECB over macro-prudential policy also increases the national authorities' need to define a framework to make this policy operational.

In this context, with a view to facilitating the implementation and increasing the transparency of macro-prudential policy and in compliance with Recommendation ESRB/2013/1 mentioned above, Banco de Portugal defines the intermediate objectives of macro-prudential policy, taking into account the specific risks and the structural characteristics of the national financial system, and selects a set of instruments that may help mitigate such risks. These options were chiefly

¹ In the European Union, these provisions are substantiated in Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 (CRD IV) and in Regulation (EU) No 575/2013 of the European Parliament of the Council on prudential requirements for credit institutions and investment firms (CRR).

² Available from http://www.esrb.europa.eu/pub/pdf/recommendations/2013/ESRB_2013_1.en.pdf

³ See Banco de Portugal (2014) and Basto (2013) for more detailed analyses of macro-prudential policy strategy and implementation.

⁴ The adoption of these measures is however subject to prior notification to the national authority, which may oppose the ECB's proposals, but the reasons for disagreeing must be explained.

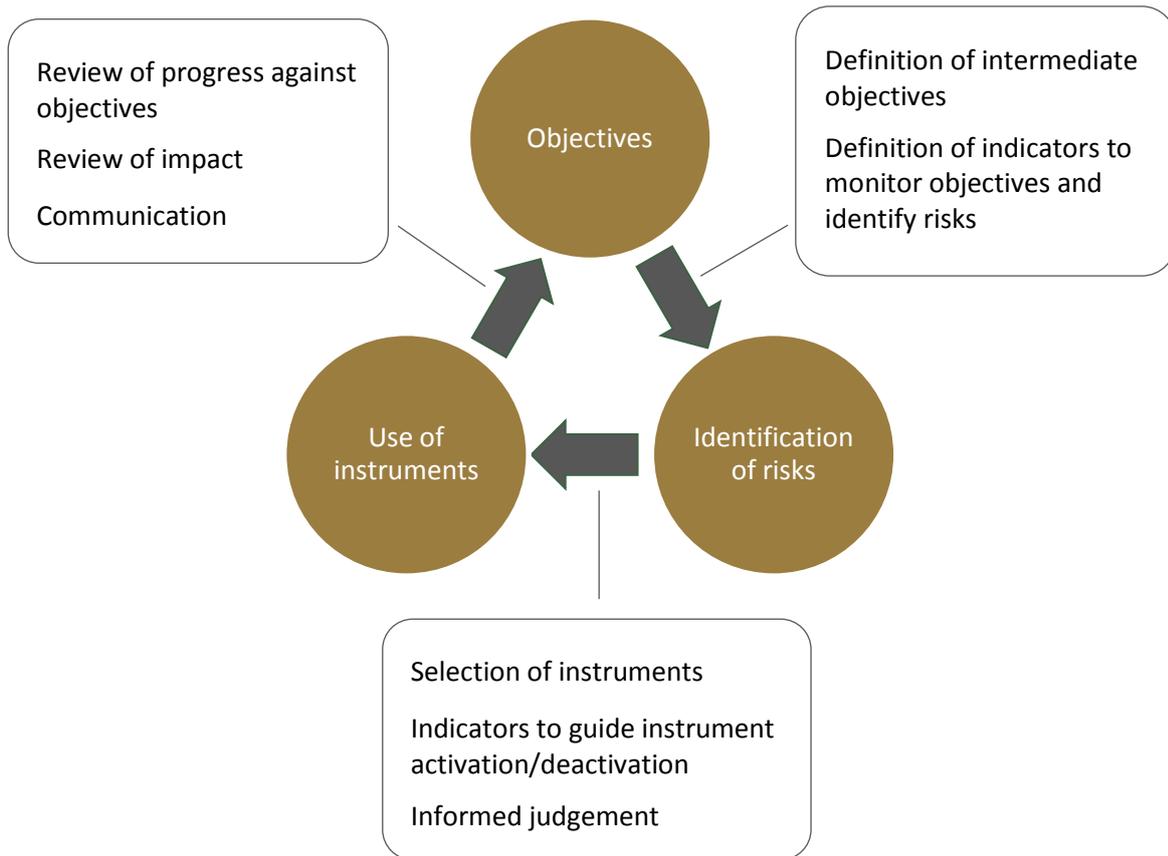
based on studies undertaken within the ESRB, in which Banco de Portugal took part, and which were focused on identifying market failures and defining the appropriate instruments to mitigate the associated risks.

Considering that macro-prudential policy is quite recent, in particular at European level, the intermediate objectives and priority instruments selected at national level are expected to be revised and updated over time. Moreover, the list of selected instruments should not be considered exhaustive (i.e. other instruments may be activated, if necessary), being merely indicative of the instruments given priority by Banco de Portugal and whose conditions for implementation at national level will be further developed.

It is also important to stress that, although the scope of macro-prudential policy covers the financial system as a whole, the instruments that have been selected so far only target the banking sector. This decision is related to the greater importance of this sector in the national financial system and to the fact that the appropriate instruments to mitigate systemic risk originating in the insurance sector or in the securities market have not been sufficiently studied at international level either.

2. The macro-prudential policy decision-making process

In operational terms, macro-prudential policy involves the definition of objectives, the identification of risks that may pose a threat to the achievement of such objectives and the selection of instruments to mitigate or prevent those risks, thereby enabling the intended objectives to be achieved (see the chart below). In this context, the decision-making process inherent in macro-prudential policy is not much different from that related to other economic policies. However, the wide scope of its objective, the nature of risks to be mitigated and the still initial phase of its implementation, confer on macro-prudential policy a considerable degree of complexity and uncertainty that condition the decision-making process.



The first step towards the adoption of a policy is the definition of objectives. The ultimate objective of the macro-prudential policy is to contribute to the safeguarding of financial stability, by strengthening the resilience of the financial sector and preventing systemic risk. The latter is defined as the risk of disruption to financial services, arising from vulnerabilities in the financial system, in part or as a whole, potentially leading to negative spillovers to the economic activity. Taking into account the variety of factors that may lead to the build-up of systemic risk, the ultimate objective of this policy is too wide and difficult to measure. In this context, the definition of intermediate objectives, more directly related to the mitigation of the various sources of systemic risk, to the underlying market failures and to the appropriate policy instruments to prevent them, make macro-prudential policy more operational and transparent. By monitoring the intermediate objectives it is also possible to better assess progress against the ultimate objective and take more direct action on the origin of the risk factors.

Once the objectives have been defined, the next step in macro-prudential policy implementation is to monitor the developments observed in the various areas that contribute to the achievement of such objectives and to the timely identification of the underlying risks. Over the past few years, considerable research has been undertaken in these areas, namely in the selection of a set of appropriate indicators to signal the accumulation of risks, the estimation of the probability of occurrence of a financial crisis (based on that information) and the design of models that explain the interconnectedness between the various economic sectors (financial and non-financial), to determine the impact of a crisis and identify the most systemically important institutions.

Despite the significant progress made, the analysis of systemic risk continues to pose countless challenges due to the complexity of the financial system, the changes seen as a result of financial innovation and the lack of available information. First, a distinction between the accumulation of imbalances that may trigger a crisis and the long-term trends or cyclical fluctuations determined by the fundamentals is not obvious. Second, the fact that a crisis is a rare event implies that the volume of information needed to determine its probability of occurrence requires data with very long time-series, which are not always available. However, taking into account the innovation and dynamism that characterise the financial system, historical data with very long time-series may not be the most appropriate for describing the current interconnectedness between the financial system and the other economic sectors.

The uncertainty associated with the identification of risks and the still limited experience with macro-prudential policy naturally condition decisions over instrument activation. However, these difficulties may be minimised through the prior selection of a number of priority instruments and the development of conditions to implement them. To this end, the instruments' transmission mechanism to the remaining economy, the potential costs and the impact associated with their activation should be analysed. In the third stage, it is important that the selection of instruments ensures adequate coverage of the risks to be mitigated and be based on effectiveness, efficiency and transparency criteria, intended to assess (i) the degree to which the instrument can achieve the objective; (ii) whether the cost or potential adverse effects arising from its activation are proportional to the intended objectives; and (iii) whether the instrument is clear and perceptible as to its application and intended objectives, to foster the credibility and accountability of policy decisions.

A mechanical link between a risk measure and the activation/deactivation of instruments should however be avoided given the complexity inherent in the identification of systemic risk. Policy decisions necessarily require a qualitative assessment (informed judgement, as identified in the chart above). In fact, there is relative consensus on the need to base, as much as possible, the decision-making process on the analysis of the various indicators and models available, leaving however room for discretion. This process will simultaneously grant transparency to macro-prudential policy and greater flexibility to adjust the decision-making process to experience gained or new information.

Finally, the impact of the instruments used on the objectives set must be monitored. Macro-prudential policy's credibility also depends on a clear-cut communication strategy regarding its stance: the interaction with other types of economic policy, such as the monetary or micro-prudential policies, and its potential impact on the non-financial sectors of the economy, implies that the regular provision of information, and the clarification of the intended objectives are key to the success of macro-prudential policy.

3. Macro-prudential policy objectives in Portugal

Taking into account the recommendations of the ESRB and with a view to making macro-prudential policy operational, Banco de Portugal considers the following four intermediate objectives to be the most relevant for macro-prudential policy in Portugal:⁵

- To mitigate and prevent excessive credit growth and leverage;
- To mitigate and prevent excessive maturity mismatch and market illiquidity;
- To limit direct and indirect exposure concentrations;
- To limit incentives for excessive risk-taking by systemically important institutions

Mitigate and prevent excessive credit growth and leverage

Most financial crises emerge following excessive credit growth, with leverage acting as an amplification channel of shocks/materialisation of risks to financial stability. Financial system vulnerabilities and imbalances tend to accumulate in the upswing of a credit cycle: lower credit risk and over-optimistic valuation of assets given as collateral in expansionary phases contribute to an increase in credit and investment in financial and real estate assets, which may fuel the emergence of speculative bubbles and excessive indebtedness. During this phase, risks are usually undervalued, thus generating excessive risk-taking. In downswings, the decreasing price of assets and the lower income of borrowers contribute to a rise in credit default and ensuing losses. The behaviour of economic agents, resulting from over-indebtedness and increased risk-aversion, may lead to fire sales, amplifying these effects and worsening the recession.

In the wake of the Portuguese economy's process of integration in the European Union, high credit growth was recorded, reflecting easier access to external funding, with lower interest rates. Overall, the shortage of domestic savings relative to investment translated into significant macroeconomic imbalances that led to a considerable rise in the indebtedness levels of the Portuguese economy's various institutional sectors. In the case of households, credit growth was mainly channelled to house purchasing. In the case of non-financial corporations, the rise in indebtedness was due to credit financing, without being accompanied by an appropriate capitalisation level. Both situations increased the financial system's leverage. Therefore, the monitoring of resulting risks becomes more important for the stability of the national financial system.

Mitigate and prevent excessive maturity mismatch and market illiquidity

Systemic risk may also arise from excessive residual maturity mismatches between banks' assets and liabilities. As shown by the recent economic and financial crisis, the funding of less liquid assets and/or long-term assets through short-term liabilities increases the vulnerability of institutions, with potential destabilising effects on the financial system. The pressure to meet short-term liabilities may force fire sales and lead to a sharp fall in these asset prices, also

⁵ Although the ESRB recommendations also define the strengthening and resilience of financial infrastructures as an intermediate objective, Banco de Portugal does not consider this a priority to guide the implementation of macro-prudential policy in Portugal. This decision is related to the fact that the infrastructures therein envisaged (mainly clearing houses for derivatives transactions) are not significant in the Portuguese financial system.

impacting on the balance sheet of other institutions with similar assets. Additionally, the resulting uncertainty about the quality and degree of liquidity of banks' assets may lead to disturbances in the interbank market, jeopardizing the effectiveness of monetary policy and the liquidity situation of the economy as a whole.

As shown by the recent European sovereign debt crisis and subsequent fragmentation of the euro area financial markets, the countries with higher macroeconomic imbalances, such as Portugal, were subject to significant financial pressure. Potential disturbances in the interbank market, such as those following the international financial crisis of 2007-08, aggravated by the so-called 'sudden stop' during the sovereign debt crisis, may have a significant adverse impact on national financial system liquidity, which must be prevented.

Limit direct and indirect exposure concentrations

The interconnectedness and concentration of exposures in the financial system may increase the potential for systemic risk to materialise. The common concentration of exposures to one sector or asset in particular gives rise to a higher correlation between the risks of the various institutions and an increased possibility of financial system contagion. In particular, this excessive concentration makes the financial system more vulnerable to risks arising from the simultaneous sales of assets, and may lead to decreasing prices of these assets, with a negative impact on the balance sheet of other institutions.

These risks may be associated with structural changes in the financial system, resulting for example from financial innovation or changes in the economic or regulatory framework, therefore being more difficult to predict.

In Portugal, the recent structural changes in the economic and financial framework (resulting from the financial crisis, the Economic and Financial Assistance Programme and the regulatory reforms) make the monitoring of this type of risk particularly complex. The close monitoring of these factors' impact on the structure of the national financial system is key. In addition, after the rise in household indebtedness that preceded the financial crisis, the banking sector has considerable direct and indirect exposure to the real estate market. Direct exposures arise from the stock of real estate, residential or commercial immovable property transferred in lieu of payment and indirect exposures arise from risk underlying the collateral given in housing loans and from holdings in real estate investment funds. Credit institutions also have exposures to a restricted number of counterparties, most notably to the general government, increasing their vulnerability to sovereign risk. The close interconnectedness between the financial and the non-financial sectors, inherent in the complex structures of certain economic groups, also represent a potential risk factor to take into account. In this context, in order to promote financial stability, it is crucial to monitor and prevent the excessive concentration of these and other potential types of exposure.

Limit incentives for excessive risk-taking by systemically important institutions

A high level of concentration in the financial system and, in particular, the existence of institutions that, due to their size or interconnectedness with other institutions of the financial or non-financial sector, are deemed systemically important, may be an additional source of risk. The implicit guarantees given to these institutions, resulting from their larger size or systemic

importance, may be an incentive for excessive risk-taking, which has more potential to propagate across the financial system.

In Portugal, the financial system is relatively concentrated, with a low number of banking groups representing significant market shares in the various financial activity segments. Although the said groups are systemically important only at national level, they may become an important source of risk contagion within the Portuguese financial system. In this context, it is important to limit the incentives for excessive risk-taking by systemically important institutions, as the intermediate objective of macro-prudential policy.

4. Macro-prudential policy instruments

Banco de Portugal has available a number of instruments for macro-prudential policy implementation, aimed at achieving the intermediate objectives identified above. Given the complexity and scope of the objective of maintaining financial stability, the lack of experience in the application of this policy, which is still recent at international level, and the fact that some micro-prudential requirements are currently being revised (e.g. liquidity requirements), the set of instruments selected is necessarily flexible, and must be assessed on a permanent basis. Moreover, as referred to in the introduction, the list of instruments selected should not be seen as exhaustive, being merely indicative of the instruments given priority by Banco de Portugal and whose conditions to be made operational at national level will be further developed.

Finally, the identification of this set of instruments by Banco de Portugal is in compliance with commitments assumed at European level. As this document aims to make clear, future activation/deactivation of the instruments will depend on the economic and financial conditions that will have to be assessed on a regular basis.

The conditions for applying some instruments are explicitly laid down in the regulatory framework of the CRR/CRD IV package:

- Countercyclical capital buffer, applicable from 1 January 2016 onwards;⁶
- Buffer for systemically important institutions, applicable from 1 January 2016 onwards;
- Systemic risk buffer, already applied.
- Sectoral capital requirements, already applied.

Additionally, Member States may apply instruments that are not envisaged in the CRR/CRD IV regulatory framework (e.g. use of instruments that act directly on access to credit, such as the limit on the loan-to-value, or on the loan-to-deposit ratio, provided for in national legislation).

The European Union regulatory framework is based on a balance between the development of harmonised rules and the need for national flexibility. The harmonisation aims to avoid distortions in competition between the authorised institutions in different Member States. National flexibility makes it possible to take into account structural differences and differences in the credit cycle of various countries, that materialise in specific risks, and which require autonomous use of the instruments.

⁶ The application of this instrument may however be brought forward in case of excessive credit growth.

The table below presents the instruments selected by Banco de Portugal, according to the intermediate objectives defined for macro-prudential policy.

Intermediate objective	Macro-prudential policy instrument
Mitigate and prevent excessive credit growth and leverage	Countercyclical capital buffer
	Sectoral capital requirements
	Limits on the loan-to value ratio – LTV
	Limits on the loan-to-income ratio – LTI / debt service-to-income ratio – DSTI
Mitigate and prevent excessive maturity mismatch and market illiquidity	Loan-to-deposit ratio ⁷
Limit direct and indirect exposure concentrations	Systemic risk buffer
	Large exposure restrictions
Limit incentives for excessive risk-taking by systemically important institutions	Capital buffer for systemically important institutions (O-SII)

Instruments to mitigate risk arising from excessive credit growth and leverage

Risks associated with excessive credit growth, identified above, may be mitigated through instruments, which by acting in a countercyclical way, make it possible to contain the accumulation of vulnerabilities and imbalances in the financial system.

The countercyclical capital buffer is an additional core Tier 1 capital requirement, which can be built up during the upswings of the credit cycle with the purpose of increasing the resilience of the banking system to vulnerabilities associated with excessive credit growth. This capital buffer must be released during the cyclical downturn, in order to allow for the absorption of losses without compromising lending to the economy, therefore contributing to reducing the procyclicality of capital requirements.

This instrument increases the resilience of the financial system, as meeting this additional capital requirement means that financial institutions will have to increase their regulatory capital level (by issuing additional capital, or retaining profit or dividends), or to condition the evolution of their risk-weighted assets (by reducing assets or increasing the share of assets with lower risk weights). In addition, the adjustment of the capital ratios imposes costs on banks which, by being reflected in credit conditions, impact on the interest rate and credit growth. Where the adjustment takes the form of a reduction in assets, there is a direct effect on credit supply.

⁷ Basel III introduced minimum requirements for the following ratios to mitigate liquidity risk: liquidity coverage ratio – LCR and net stable funding ratio – NSFR. Note that these limits are imposed only as regulatory minimum levels. The possibility of adjusting them to the financial cycle or the structural characteristics of the financial system (i.e. as a macro-prudential policy instrument) has not been studied yet. In any case, the macro-prudential measures that will be adopted must take into account these minimum requirements.

In accordance with CRD IV, this instrument is country-specific, i.e. reciprocity is mandatory⁸ for buffer rates up to 2.5 per cent. The reciprocity principle, by allowing the application of the regulatory requirement to total bank exposures in a given country, limits the possibility of regulatory arbitrage, i.e. transfers of operations to institutions that are not under the same regulatory jurisdiction.

Assessing the effectiveness of the countercyclical capital buffer requires real time monitoring of the credit cycle phase. This involves defining adequate indicators to identify the phase of the credit cycle and, consequently, to guide the instrument's activation. In this regard, the countercyclical capital buffer has the advantage of probably being the most widely studied macro-prudential instrument. Several analyses carried out internationally⁹ led to the identification of a set of relevant indicators for the instrument activation. The deviation of the credit-to-GDP ratio and its long-term trend generally appears as the most suitable indicator overall to signal financial crises.

This instrument may be supplemented by imposing a leverage ratio.¹⁰ As this instrument does not consider risk-weighted assets, it eliminates potential incentives on the part of financial institutions to readjust the asset portfolio according to risk weights.

As referred to above, risks resulting from excessive credit growth may concentrate on a specific economic sector, such as the real estate sector. Although the countercyclical capital buffer may be considered an effective and efficient instrument to mitigate risks of a cyclical nature, this instrument is too wide and not tailored to situations in which the risk factors are concentrated in a given sector. In these cases, it may be more efficient to use instruments that specifically act on sectoral risks, without imposing restrictions on the economy as a whole. This is the case of the sectoral capital requirements or of the instruments aimed at restricting credit access conditions, such as the limits on the value of a loan relative to the underlying collateral (loan-to-value ratio – LTV) or the limits on the value of a loan or on debt servicing costs relative to the borrower's income (loan-to-income ratio – LTI / debt service-to-income ratio – DSTI).

The sectoral capital requirements are generally applicable to exposures collateralised by immovable property. These requirements may be imposed directly, through additional capital requirements on loans secured by mortgages, or indirectly, through changes in the parameters that determine the capital requirements: higher risk weight for housing loans or higher minimum limit on Loss Given Default – LGD, which is a variable used in the calculation of risk weights by banks using advanced credit risk models.

In addition to restricting access to credit, the measures that impose limits on LTV, LTI and/or DSTI strengthen the banking sector's resilience: a limit on the LTI/DSTI contributes to reduce the probability of default and a limit on the LTV makes it possible to limit the value of any losses arising therefrom.

These instruments' efficiency depends largely on the definition and measurement of the variables underlying their calculation. A correct assessment of collateral value (both in current

⁸ Reciprocity means that branches of banks having their head office in the European Union carrying on their activity in the country in question are subject to the same regulatory requirements as national banks.

⁹ See, for example BCBS (2010), ESRB (2014 and 2014a) and Bonfim and Monteiro (2013).

¹⁰ The possibility of using this instrument for macro-prudential purposes, adjusted for the economic cycle, is currently being studied.

and prospective terms) is crucial to limiting future losses in case of default. The numerator of the LTV and LTI/DSTI ratios should be defined in a comprehensive manner (covering the total value of loans secured by mortgages) to prevent the instrument from being circumvented by a second mortgage or loan splitting.

Instruments to mitigate excessive maturity mismatch and market illiquidity

The loan-to-deposit ratio may be used as an instrument to mitigate liquidity risk insofar as it ensures that a significant share of the banking system's assets are financed through a relatively stable source, such as deposits. This instrument, not being defined in the European regulatory framework, confers significant discretion on national authorities as to the ratio's value or scope of application. Therefore, it may be adjusted to the credit cycle in order to impose stricter requirements in periods of excess liquidity, usually characterised by the overvaluation of assets given as collateral and by reduced interest rate spreads, thereby making available liquidity reserves in periods of increased market turbulence.

The CRR/CRD IV package introduced, in a harmonised way, two requirements to mitigate the risks resulting from an excessive maturity mismatch and market illiquidity: liquidity coverage ratio – LCR and net stable funding ratio – NSFR. These minimum liquidity requirements shall be applied from 2016, for NSFR, and from 2018 for LCR.¹¹

The LCR ensures that institutions keep the adequate liquidity buffers to withstand possible disruptions of liquidity flows under increased stress over a period of 30 days. The NSFR ensures that the institutions' illiquid assets are financed through stable sources, both under normal conditions and adverse scenarios.

Note that the latter two requirements are only applied as regulatory minimum levels and their activation in relation to the financial cycle has not been envisaged yet. In this regard, they are not considered macro-prudential instruments. However, after the implementation of these minimum liquidity requirements and the assessment of their impact, it may be possible to study the macro-prudential adjustment of liquidity ratios.

Instruments to limit direct and indirect exposure

The capital buffer for systemic risk consists in add-ons to core Tier 1 capital applicable to all or to a subset of credit institutions that may be a source of long-term systemic risk, of a non-cyclical nature.

Compared with the other instruments foreseen in CRD IV, this regulation confers on national authorities higher discretion and flexibility regarding this instrument's implementation, insofar as different requirements may be introduced for different subsets of credit institutions and different types of geographical exposures. The systemic risk buffer is at least 1 percentage point and may be adjusted at intervals of half a percentage point.

¹¹ A transitional period was defined for the application of the LCR starting in January 2015. On this date, institutions shall comply with 60 per cent of the LCR. This ratio will increase 10 percentage points per year until 2018, when 100 per cent compliance will be reached.

This flexibility makes this instrument appropriate to mitigate risks resulting for instance from the concentration of exposures or interconnectedness in the financial system, often associated with financial system innovation or structural changes, which are very difficult to predict.

The direct and indirect concentration of exposures may also be mitigated through requirements regarding large exposures. According to European Union legislation, the limit of exposures to a client or group of connected clients cannot exceed 25% of the eligible own funds of the institution, after considering the effect of the credit risk reduction. The application of this instrument for macro-prudential purposes consists in occasional reductions of that limit.

Instruments to limit incentives for excessive risk-taking by systemically important institutions

The capital buffer for global systemically important institutions (G-SII) and other systemically important institutions (O-SII) is designed to mitigate risk associated with misaligned incentives and moral hazard by institutions benefitting from implicit State guarantees due to their 'too big to fail' status. In effect, these guarantees may be an incentive for excessive risk-taking, with a potential impact on taxpayers in case of failure.

This buffer comprises core Tier 1 capital, being exclusively applied to institutions deemed systemically important by the macro-prudential authority. The regulatory framework identifies two types of systemically important institutions: G-SII, systemically important at EU level, and O-SII, which may be systemically important at national level. In Portugal there are no banking institutions identified as G-SIIs. Therefore only the instrument relating to O-SII may be applied. The O-SII's capital buffer may reach 2 per cent of the total amount of positions at risk.

When the capital buffer is imposed on the systemically important institutions their robustness and resilience is strengthened and, hence, the financial system as a whole. In addition, the capital buffer helps to mitigate the risk of contagion, as the O-SII's capacity to absorb immediate losses increases, without affecting other institutions.

Similarly to the G-SII identification methodology defined in CRD IV, the systemic importance of a banking institution at domestic level may be assessed on the basis of at least one of the following criteria: size; importance for the economy of the Union or Member State in question; importance of its international activity; and interconnectedness of the institution or group with the financial system.

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