



South African Reserve Bank

Financial Stability Department

A new macroprudential policy framework for South Africa

November 2016

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Executive summary

There is growing consensus among jurisdictions globally to direct regulatory frameworks towards placing more emphasis on mitigating systemic risks in the financial system. South Africa launched a formal review of its financial regulatory system in 2007, resulting in a number of policy papers and culminating in the publication of the Financial Sector Regulation Bill (FSR Bill). The FSR Bill assigns primary responsibility to the South African Reserve Bank (SARB) for protecting and enhancing financial stability, and seeks to ensure cooperation between regulators in pursuing the stability of the financial system. This discussion paper outlines the SARB's approach to executing its financial stability policy mandate within this context.

In considering the macroprudential policy framework it is important to understand systemic risk and assess the sources thereof. It is the SARB's responsibility to take all reasonable steps to prevent systemic events from occurring and to mitigate the adverse effects of events on financial stability through the application of a toolkit of macroprudential policy instruments. Three key steps can be identified in the process of activating macroprudential instruments. These are a systemic risk assessment, motivating a case for macroprudential intervention, and selecting and implementing the most appropriate macroprudential instruments. Instruments should be monitored continuously while active with regard to their calibration and appropriateness, and be subjected to an ex post analysis of their costs and benefits once deactivated.

Macroprudential instruments are generally classified in three categories, namely capital-based instruments (e.g. countercyclical capital buffers, sectoral capital requirements and dynamic provisions); asset-side instruments (e.g. loan-to-value (LTV) and debt-to-income (DTI) ratio limits); and liquidity-based instruments (e.g. countercyclical liquidity requirements). Although empirical evidence is still limited at this stage, a detailed understanding of how different instruments function, including their transmission mechanisms, will be crucial for their effective and transparent application.

It is against this background that the SARB seeks to outline the rationale for a macroprudential policy approach and describe the steps to be taken in its execution.

1. Introduction

The severity of the 2007–08 global financial crisis and the magnitude of the costs imposed on the real economies of countries resulted in a renewed focus on the role of the financial system as the source of financial crises. The growing consensus is that an important and necessary dimension of reforming the global financial system is for regulatory frameworks to focus on mitigating the risks to the financial system as a whole. Significant risks can build up and threaten the stability of the financial system while individual financial institutions seem to be healthy and stable. Several jurisdictions have identified the lack of a clear mandate and powers to analyse and address systemic risk as one of the regulatory failures preceding the global financial crisis.

In South Africa, as in many other jurisdictions, the macroprudential policy discourse is currently mostly centred on banks. However, the externalities that macroprudential policy seeks to address extend beyond the banking sector. It is not only large banks that can be systemically important financial institutions, but also insurers, payment and market infrastructures, pension funds and other financial intermediaries, including the so-called ‘shadow banks’.¹ The discussion in this paper should be understood to apply to this wider group of institutions, although the examples cited may weigh more heavily on the experience of the banking sector.

This discussion paper outlines the South African Reserve Bank’s (SARB) proposed framework for macroprudential policy. In terms of its expanded mandate for financial stability, provided by the Financial Sector Regulation Bill (FSR Bill), the SARB’s responsibility is to take all reasonable steps to prevent systemic events from occurring and to mitigate the adverse effects of such events on financial stability. The paper sets out the institutional structure, the objectives of macroprudential policy and the decision-making process to be applied. It also describes a range of possible instruments to mitigate systemic risk.

¹ See section 29 of the FSR Bill for the designation of systemically important financial institutions.

2. Institutional structure

In February 2010 the Minister of Finance reaffirmed the role of the SARB of overseeing and maintaining financial stability in a letter to the Governor of the SARB. A year later National Treasury published a policy paper titled 'A safer financial sector to serve South Africa better' confirming that... "the Reserve Bank is best placed to play the role of a macroprudential supervisor". This was followed by a further paper in 2011 on 'Implementing a twin peaks model of financial regulation in South Africa'. National Treasury has subsequently published several drafts of the FSR Bill since 2013.²

The FSR Bill confers on the SARB the mandate to protect and enhance financial stability. The definition of financial stability adopted stresses the importance of 'resilience' and 'confidence', as emphasised by Tucker (2011). For the purposes of the FSR Bill (October 2016), 'financial stability' means that:

- i. financial institutions generally provide financial products and financial services, and market infrastructures generally perform their functions and duties in terms of financial sector laws, without interruption;
- ii. financial institutions are capable of continuing to provide financial products and financial services, and market infrastructures are capable of continuing to perform their functions and duties in terms of financial sector laws, without interruption despite changes in economic circumstances; and
- iii. there is general confidence in the ability of financial institutions to continue to provide financial products and financial services, and in the ability of market infrastructures to continue to perform their functions and duties in terms of financial sector laws, without interruption despite changes in economic circumstances.

² The FSR Bill was tabled in Parliament on 27 October 2015. Subsequent to this, the Standing Committee on Finance (SCOF) held a series of public hearings and invited public submissions on the FSR Bill. On 21 July 2016, National Treasury published a comprehensive comments matrix responding to comments submitted, as well as a further draft of the FSR Bill reflecting proposed drafting changes. Following further comments by the SCOF and stakeholders, a new comments matrix and revised draft of the FSR Bill were published on 21 October 2016. References here are to this most recent draft.

The SARB is tasked with monitoring the financial system for potential systemic risks. The SARB must, at least every six months, publish and table in Parliament a financial stability review that identifies and assesses the risks to financial stability, and provides an overview of steps taken by it and other financial sector regulators to identify and manage risks. Also, if a systemic event is imminent or has occurred, the SARB is tasked with maintaining and restoring stability.³ The SARB must take steps to mitigate risks to financial stability, including advising the financial sector regulators and any other organs of state of the policies to implement to mitigate these risks.

The FSR Bill seeks to ensure cooperation, collaboration, coordination and consistency between the Financial Sector Conduct Authority, the Prudential Authority, the National Credit Regulator, the SARB and other organs of state in pursuing the stability of the financial system. The Governor of the SARB may direct financial sector regulators, in writing, to provide the SARB with information and to assist the SARB in meeting its financial stability responsibilities by acting in accordance with the directive when exercising their powers.⁴

The FSR Bill also provides for the establishment of an advisory committee, the Financial Stability Oversight Committee (FSOC), to be chaired by the Governor of the SARB, and to include member representatives from the SARB, National Treasury and financial regulators.⁵ The FSOC will meet at least every six months. The primary objectives of the FSOC are to support the SARB when it performs its functions in relation to financial stability, and to facilitate cooperation and coordination of action among the financial sector regulators and the SARB in respect of matters relating to financial stability.

³ A systemic event means an event or circumstance, including one that occurs or arises outside the Republic, that may reasonably be expected to have a substantial adverse effect on the financial system or on economic activity in the Republic, including an event or circumstance that leads to a loss of confidence that operators of, or participants in, payment systems, settlement systems or financial markets, or financial institutions, are able to continue to provide financial products or financial services (FSR Bill, 2016: Chapter 1).

⁴ See section 18 of the FSR Bill (2016).

⁵ In terms of the draft Bill, the Financial Stability Oversight Committee will consist of the following members: (a) The Governor of the SARB; (b) the Deputy Governor of the SARB responsible for financial stability matters; (c) the Chief Executive Officer of the Prudential Authority; (d) the Commissioner of the Financial Sector Conduct Authority; (e) the Chief Executive Officer of the National Credit Regulator; (f) the Director-General of the National Treasury; (g) the Director of the Financial Intelligence Centre; and (h) a maximum of 3 additional persons appointed by the Governor.

The FSOC will serve as a forum for representatives of the SARB and the financial sector regulators to discuss their activities regarding financial stability. It will also make recommendations to the SARB on the designation of systemically important financial institutions, and advise the Minister of Finance and the SARB on steps to be taken to promote, maintain or prevent risks to financial stability, and on matters relating to crisis management and prevention. In addition, the FSOC will make recommendations to other organs of state regarding steps that are appropriate for them to take to assist in promoting, protecting, or maintaining financial stability, or managing or preventing risks to financial stability.

Within the SARB, the formulation of macroprudential policy in support of the financial stability mandate will be the responsibility of the Financial Stability Committee (FSC). The FSC was established in 2000 and was recently restructured in accordance with the SARB's enhanced mandate. The FSC has overlapping membership with the Monetary Policy Committee (MPC) of the SARB, which facilitates communication between the committees and the coordination of macroprudential and monetary policies.⁶ In addition to MPC members, the FSC also includes senior SARB officials who represent relevant areas of the Bank. The FSC meets each quarter, or as required, and a press statement will be issued following FSC meetings once the FSR Bill has been promulgated.

The coordination of policies that have a bearing on financial stability is a challenging issue. Macroprudential policy clearly interacts, and is interdependent, with monetary policy. Both are aimed at economic stability in the interest of maximising sustained long-term growth. However, coordination with other policies is also important. For example, when international capital mobility is high, some recent literature suggests that macroprudential capital flow management measures – controls aimed at mitigating externalities to reduce the risk of financial crises – may be considered. There are also both complementarities and possible conflicts with fiscal, microprudential, market conduct, exchange control, resolution and competition policies. Furthermore, where financial institutions have cross-border operations, it

⁶ See, for example, the discussion in Kohn (2015).

makes the assessment of systemic risk in both home and host countries more difficult, and requires bilateral and multilateral coordination and consultation. A detailed discussion of these issues is beyond the scope of this paper, but strong mechanisms facilitating consultation between the various authorities will be required to ensure the effective coordination of policies. Research into these coordination issues forms part of the SARB's current research agenda, as is the case in many other jurisdictions.

3. Systemic risk as the focus of macroprudential policy

In considering the macroprudential policy framework it is important to focus on systemic risk and the sources thereof. Macroprudential policy is primarily concerned with the use of macroprudential instruments to limit systemic risk. Systemic risk is defined here as the risk of disruptions to the provision of key financial services that is caused by an impairment of all or parts of the financial system, and which can cause serious consequences for the real economy. Systemic risk may arise at certain points in the economic cycle where borrowers exceed their means, when leverage in the financial sector is high, and when maturity transformation is excessive.

Systemic risks are usually divided into cyclical and structural risks. The cyclical or time dimension of systemic risk, on the one hand, focuses on how risks can build up over time, for example through credit booms and asset price bubbles, and impact negatively on the real sector following busts. The structural or cross-sectional dimension, on the other hand, is concerned with how the concentration of risk and the interconnectedness of different parts of the financial system contribute to systemic risk.

Cyclical risks refer to the tendency of financial firms, companies and households to assume excessive risks during upswings in financial and credit cycles, and then to become exceedingly risk-averse during downswings. It is during the upswing phases – characterised by strong optimism, financial innovation, the underpricing of risk and strong credit growth – that systemic risk usually builds up. When these bubbles in asset markets such as real-estate and equity markets burst, it often leads to the

selling of assets, severe price falls and a credit crunch, and to financial crises with serious repercussions for the real economy. Cyclical risks also have the ability to amplify the impact of adverse aggregate shocks due to feedback mechanisms between excessive credit growth, asset price bubbles, excessive leverage and maturity mismatches.

The structural risks relate to the distribution or concentration of aggregate risk in the financial system at any time. Financial institutions are often closely interconnected through exposures to counterparties resulting in direct and indirect linkages across the financial system. Adverse aggregate shocks could be amplified through the spillovers, contagion, moral hazard, opacity and complexity of financial institutions, markets and products. The degree of concentration in the financial system, where a large portion of the financial system's functions are conducted by a few institutions which are closely interconnected – exposed to the same kind of risks and dependent on the same sources of funding – could also add significantly to the level of systemic risk in the financial system.

4. The objectives of macroprudential policy

Macroprudential policy has two broad aims that are not mutually exclusive: *first* strengthening the resilience of the financial system to economic downturns and other adverse aggregate shocks; and *second*, leaning against the financial cycle to limit the accumulation of financial risks and the likelihood or the extent of a financial crisis. For macroprudential policy to be successful there is a need to identify *intermediate policy objectives*, such as:

- reducing excessive⁷ growth in credit, asset prices and leverage;
- reducing excessive lending and funding maturity mismatches;
- reducing direct and indirect concentrations of exposures to the same markets, products and institutions; and

⁷ The Bank will use its discretion to decide what it considers to be excessive growth. In the case of credit, a sustained level above trend would be a starting point. With regard to asset prices, different valuation metrics will be used to assess whether growth rates are significantly above their historic average.

- reducing moral hazard by avoiding situations where institutions increase their exposure to risk with the expectation that the government will bail them out.

The focus of the discussion of macroprudential policy presented in this paper is therefore on the prevention of risk propagation,⁸ while the framework for the resolution of designated financial institutions is presented elsewhere (National Treasury, SARB and FSB, 2015). Sound macroprudential policy increases the resilience of the financial system to adverse aggregate systemic shocks by establishing buffers to help cushion their impact and sustain the provision of financial services and credit to the economy. It focuses on the interactions between financial institutions, infrastructure, markets and the real economy. By contrast, microprudential policy assesses the risks to which individual institutions are exposed irrespective of the state of the financial system and the economy.

Macroprudential policy focuses on endogenous risk. It aims to restrain the build-up of systemic vulnerabilities over time (cyclical dimension) by limiting the procyclical feedback effects between excessive credit growth and asset prices and by discouraging unsustainable increases in leverage and risky funding options. Macroprudential policy tools are also aimed at restraining the build-up of systemic vulnerabilities within the financial system (structural dimension) by reducing the risk of concentration which can result from financial institutions having similar exposures or direct balance-sheet linkages. It is important that macroprudential policy is focused on limiting systemic vulnerabilities and not on broader objectives.

5. A framework for macroprudential policy decision-making

Three key steps can be identified to the macroprudential policy process leading up to the activation of macroprudential tools. These are systemic risk assessment, building a case and motivation for macroprudential intervention, and selecting and implementing the macroprudential instruments.

⁸ See, for example, the discussion in Goodhart and Perotti (2013).

5.1 Systemic risk assessment

The first step in the decision-making process requires monitoring the financial system in order to provide a systemic risk assessment. The focus of the monitoring exercise is on systemic vulnerabilities that propagate adverse shocks, rather than the shocks themselves (e.g. Adrian, Covitz and Liang 2015; Bernanke 2013), and includes analyses of risks in institutions identified as systemically important (i.e. systemically important financial institutions, or SIFIs), shadow banks, asset markets, and the non-financial sector. The risk assessment process uses indicators that confirm the build-up of imbalances in the financial system.

The following are examples of macroprudential indicators used for systemic risk assessment:

- **Macroeconomic indicators:** the assessment and monitoring of the level of *leverage and general credit market conditions*.
- **Financial sector indicators:** measures related to maturity and currency mismatches that point to *funding vulnerabilities* in the financial sector. Changes to lending standards are assessed to determine the level of *risk appetite*. The *resilience* of the financial sector to severe adverse market conditions is also assessed through periodic stress tests.
- **Market-based indicators:** house prices, commercial property prices and asset valuations in equity markets are used to assess *asset market conditions*. Government and corporate bond spreads, credit default swap spreads and measures of risk premiums could be used to assess *funding and credit market conditions*.
- **Qualitative information:** underwriting standards, asset quality and credit conditions are examples of typical information generally used for such assessments.

According to the Bank for International Settlements (BIS) guidelines,⁹ such indicators should provide useful signals on the build-up of vulnerabilities ahead of a crisis.

⁹ Bank for International Settlements (2012).

However, they are imperfect in that they could also issue false signals. Therefore, the indicators should always be interpreted with caution when used for policy formulation. The set of indicators used by the SARB is likely to vary over time as circumstances dictate. An analysis of these indicators is published in the biannual *Financial Stability Review* publication of the SARB.

5.2 Building a case for macroprudential intervention

Following a systemic risk assessment process, the next step is to ask whether there is a case for macroprudential intervention. The SARB will satisfy itself that, despite the continued application of microprudential supervision and monetary policy, the level and distribution of risk across the financial system would intensify if it remained unattended. In this regard, an assessment of the viability of monetary and/or microprudential policy would precede a determination of a need for macroprudential intervention.

Monetary policy targeting price stability is a necessary condition for financial stability, but it is not a sufficient condition. The effectiveness of using monetary policy to address specific financial vulnerabilities such as excessive leverage and maturity transformation is not well established, and monetary policy is clearly less direct than regulatory or supervisory interventions. Efforts to promote financial stability through adjustments in interest rates may also increase the volatility of inflation and employment, as excessively high interest rates may be required. Evidence that low interest rates contribute to higher leverage and increased reliance on short-term funding suggests higher interest rates may lessen these vulnerabilities, but regulatory limits on leverage and short-term funding as well as stronger underwriting standards seem likely to provide more targeted and effective methods to address these vulnerabilities.¹⁰

In determining a case for macroprudential intervention, it is important to assess the potential cost relative to the expected benefits, and to balance the possible trade-off between missing the build-up of a crisis and implementing measures that are not

¹⁰ Speech by Federal Reserve Chair, Janet Yellen, 'Monetary policy and financial stability', available at <http://www.federalreserve.gov/newsevents/speech/yellen20140702a.htm>

needed (Freixas et al. 2015). While macroprudential tools have costs, so too does inactivity (the global financial crisis serves as a recent reminder). Timing is also important. Late intervention often renders the tools ineffective as there is insufficient time for them to work, resulting in a further deterioration of financial conditions. Similarly, a mistimed deactivation could lead to undesired results, sending the wrong signal to markets and amplifying the adverse procyclical effects.

5.3 Selection and implementation of macroprudential instruments

Macroprudential instruments are policy tools that are intended to target the sources of systemic risk, such as liquidity and maturity mismatches, leverage or interconnectedness. Although the discussion in this paper focuses mainly on the banking sector, it is clear that systemic vulnerabilities could emerge in non-bank SIFIs, the shadow banking sector, asset markets, or the non-financial sector, and the macroprudential policy framework would have to be cognisant of this. Before applying the instruments it is important to confirm their appropriateness and whether their impact is assessable. Each instrument should be related to intermediate policy target(s) of macroprudential policy in order to track its success, or lack thereof, in reducing either cyclical or structural risks. The purpose of these instruments is to respond to developments in the financial cycle, taking into account macroeconomic conditions. During an upward phase of the credit cycle, the cyclical backdrop of macroeconomic conditions should be supportive of the view to tighten credit conditions if the build-up of a particular vulnerability is clearly identifiable. Macroprudential instruments can of course be applied sectorally, targeted to specific sectors that pose a systemic risk. The successful implementation of macroprudential instruments will depend on the ability to identify and assess the level of systemic risk and vulnerabilities, and correctly time the intervention. Poor timing of the implementation of these instruments could have undesired and unintended consequences.

An important subset of macroprudential instruments consists of microprudential tools applied on a sectoral basis for macroprudential purposes. The generic design of some of these instruments is directed by international regulatory organisations. One such example is the Basel III countercyclical capital buffer that should be introduced

when the economy is in an upswing (and the ratio of credit growth to gross domestic product (GDP) is above its long-term trend) and released during downswings. This instrument was designed at the international level and is adapted to local conditions and applied to the domestic banking sector using national credit growth and GDP data.¹¹

The selection and implementation of macroprudential instruments will be guided by three main criteria, namely the effectiveness, efficiency and transparency¹² of the instruments. *First*, for the effective implementation of macroprudential instruments, the focus should be on the instruments with well-understood transmission mechanisms. Despite national idiosyncrasies and the econometric evidence on the effectiveness of macroprudential policies still being limited and preliminary,¹³ a better understanding of the transmission mechanisms of instruments could be gained from the experiences of other countries and from ex post assessments and back-testing of historical periods of excessive growth in credit.¹⁴ It may also be important to distinguish between the phases of a country's financial cycle in selecting macroprudential instruments, since policies are expected to function differently depending on the phase of the cycle; some researchers find that macroprudential tools may be less effective in responding to downswings following adverse events than mitigating risks during upswings (e.g. Claessens et al. 2014). Decision-making on macroprudential policies is largely uncharted territory and the level of success or outcome of the policy instruments should improve over time.

Second, the efficiency of the instruments will be assessed by their ability to avoid any unintended consequences and adverse effects. The impact of the instruments on the flow of credit and economic activity are important in this regard. The ex post assessment of the effects exclusively attributable to the implementation of the instrument could be difficult, given that financial instability concerns are not recurring events like inflation. Therefore, the list of instruments adopted will evolve over time and as more experience is gained.

¹¹ See the paper by Dirk Schoenmaker and Peter Wierts titled 'Macroprudential policy: the need for a coherent policy framework', July 2011.

¹² Bank for International Settlements (2012).

¹³ See, for example, the survey by Galati and Moessner (2013).

¹⁴ Examples include Lim et al. (2011) and Cerutti et al. (2015, 2016).

Third, decision-making and actions taken should be transparent. In selecting the instruments, the focus should be on instruments whose application is characterised by transparency, simplicity and predictability. This would enhance the understanding, ease of communication and process of administering macroprudential policies.

Macroprudential instruments are generally classified in three categories (see Table 1), namely capital-based instruments (e.g. countercyclical capital buffers, sectoral capital requirements and dynamic provisions); asset-side instruments (e.g. loan-to-value (LTV) and debt-to-income (DTI) ratio caps); and liquidity-based instruments (e.g. countercyclical liquidity requirements).

A list of examples of macroprudential instruments that have been implemented in other jurisdictions and their potential indicators are provided in Table 1.

Table 1: Policy instruments and potential indicators¹⁵

Policy instrument	Potential indicators
Capital-based instruments	
Countercyclical capital buffers	Measures of the aggregate credit cycle
Sectoral capital requirements	Measures of sectoral concentrations Distribution of borrowing within and across sectors Real-estate prices (commercial and residential, old and newly developed properties) Price-to-rent ratios
Dynamic provisions	Bank-specific credit growth and specific provisions (current and historical average)
Asset-side instruments	
Maximum leverage ratios	Total assets to bank equity
Loan-to-value and debt-to-income ratios	Real-estate prices (commercial and residential, old and newly developed properties) Price-to-rent ratios Mortgage credit growth Underwriting standards Indicators related to household vulnerabilities Indicators of cash-out refinancing
Liquidity-based instruments	
Countercyclical liquidity requirements : liquidity coverage ratio and net stable funding ratio	Liquid assets to total assets or short-term liabilities Loans and other long-term assets to long-term funding Loan-to-deposit ratios Lending spreads
Margins and haircuts in markets	Margins and haircuts Bid-ask spreads Liquidity premiums Shadow banking leverage and valuation

Sources: Bank for International Settlements and South African Reserve Bank

¹⁵ Further work on policy instruments and their indicators will be done to develop indicative thresholds at which an instrument could be activated or deactivated. These decisions would combine rules and discretion.

The key features of some of these macroprudential instruments, including developments that would trigger their implementation, are as follows:

5.3.1 Countercyclical capital buffer (CCB)

This instrument introduces a cyclical buffer on top of minimum bank capital requirements (Basel Committee on Banking Supervision 2010). Banks would be required to keep an additional capital buffer when private-sector credit growth is excessive and stimulating the build-up of system-wide risk during an upswing. The credit-to-GDP gap as set out by the Basel Committee (2010), appropriately calibrated, is the main indicator informing the activation of the CCB. The CCB aims to increase resilience by providing the banking system with a cushion to provide for the economic downturn or financial distress that might follow, and may also help to lean against the expansion phase of the credit cycle. Symmetrically, after the credit cycle has peaked and the economy approaches a period of financial distress, the CCB would be released, allowing banks to maintain the flow of lending following the shock.¹⁶

A foreign parent of a bank that is operating in South Africa, or an offshore bank lending directly to South African borrowers, would hold a CCB against its South African exposure, following from the reciprocity provisions envisaged in the Basel III framework. Similarly, South African banks' overseas exposure will carry a minimum buffer introduced by the overseas regulators. The reciprocity would be mandatory only for buffers up to 2,5 per cent.

5.3.2 Sectoral capital requirements

Banks could also be required to hold additional capital, over and above microprudential requirements, against exposures to a specific sector or segment in which excessive private-sector credit growth is assessed to be a leading factor in the

¹⁶ In South Africa, the Financial Stability Committee is responsible for setting the CCB rate, pursuant to the requirements specified in regulations 38(8)(e)(v) and 38(8)(g) of the Regulations relating to Banks, read with the provisions of Directive 5/2013 issued in terms of section 6(6) of the Banks Act 94 of 1990 and Circular 8/2015 issued in terms of section 6(4) of the Banks Act 94 of 1990.

build-up of system-wide risk. Examples of indicators of developments that would motivate the implementation of this instrument include measures of sectoral credit growth and concentration, distribution of borrowing within and across sectors, residential and commercial real-estate prices, and price-to-rent ratios. The instrument can be implemented as a capital add-on that reflects the proportion of the banks' risk-weighted exposure to a sector considered as risky. For example, risk weights against loans to commercial real estate might be increased to curb excessive growth in commercial real-estate loans.

5.3.3 Dynamic provisioning

In imposing cyclical provisioning practices, banks could be required to hold additional provisions to cover expected losses, in addition to those required by the relevant accounting standards, in order to mitigate risks from inadequate provisioning. The instrument aims to address the underestimation of risk by banks during upturns and the possibility of larger-than-expected losses during downturns. Macroprudential provisioning requirements could be rules-based, along the lines of the approach of the Bank of Spain. Implementation would be based on indications of banks on average making inadequate provisions in good times relative to historical averages. Provisioning could be applied to specific sectors or across the board.

5.3.4 Maximum leverage ratios

The use of macroprudential leverage ratio buffers as add-ons to microprudential leverage ratios could also be considered when excessive leverage is judged to be putting the resilience of the financial system at risk. Banks typically increase their leverage by borrowing to purchase more assets in order to increase their return on equity. Leverage ratios could be used to cap the ratio of total assets to bank equity. The ratio would typically be tightened during upswings and relaxed during a downturn of the credit cycle. The rationale for this cap is that the size of the capital requirements of a bank should be determined by the riskiness of its assets. A simple leverage constraint that weighs assets equally may be preferred to the risk-weighted approach, given that excessively optimistic risk measures in boom periods tend to cause risk-weighted assets and capital requirements to contract.

5.3.5 Loan-to-value and debt-to-income limitations

In cases where there is a concern that systemic risk arising from excessive leverage and maturity transformation is being amplified by an easing in lending standards, LTV and DTI caps may be introduced to discourage an erosion of lending standards. The LTV ratio limits the extension of mortgage credit above a specific fraction of the market value of a property, while the DTI ratio limits the extension of credit beyond a multiple of a borrower's income. The aim of restricting LTV ratios is to enhance the resilience of banks by increasing the collateral guaranteeing a mortgage loan, so limiting their losses in the event of a default. Similarly, the aim of restricting DTI ratios is to limit the debt to be serviced from a certain level of income, thereby improving the borrower's ability to service his or her debt. LTV and DTI ratios could therefore be tightened during an upswing and released during a downswing.

5.3.6 Margins and haircuts in the market

These instruments could be used to set limits on margin requirements by specifying mandatory minimum margins or haircuts on secured financing and derivative transactions (these could be static or time-varying). The aim of the instruments is to enhance the resilience of funding markets by ensuring that margins do not contract excessively when market volatility is low, and reducing the systemic risks from margin spikes associated with high market volatility.

5.3.7 Liquidity coverage ratio and net stable funding ratio

Time-varying liquidity buffers could be applied as macroprudential instruments, in addition to the minimum microprudential requirement for the liquidity coverage ratio (LCR) or the net stable funding ratio (NSFR), with the intention of addressing the negative externalities or spillovers resulting from excessive liquidity risk or maturity transformation. Implementation would be based on developments in indicators such as the ratios of liquid assets to total assets or short-term liabilities, loans and other long-term assets to long-term funding, loan-to-deposit ratios or lending spreads.

The objective of the LCR is to raise the short-term resilience of the liquidity risk profile of banks by ensuring that they have sufficient unencumbered high-quality liquid assets that can be easily converted into cash to meet their liquidity needs for a 30-day period. Increasing the ratio beyond the Basel III minimum requirements would help ensure that rapid reversals in market conditions do not result in the evaporation of liquidity, or illiquidity, in the market.

The NSFR ratio would require banks to maintain a stable funding profile relative to the composition of their assets and off-balance-sheet activities in accordance with Basel III stipulations. The aim of the NSFR is to reduce the likelihood that disruptions to a bank's regular sources of funding would worsen its liquidity position and increase its risk of it failing, potentially resulting in broader systemic risk. The NSFR seeks to put a floor on the amount of long-term funding banks may hold against liquid assets. It therefore ensures that banks do not embark on excessive maturity transformation that is not sustainable by relying on the unstable funding of core (often illiquid) assets. Rapidly expanding their balance sheets can reduce the capacity of individual banks to respond to liquidity and solvency shocks, and can increase systemic risks.

6. Conclusion and the way forward

The SARB needs effective macroprudential policy instruments to meet the financial stability responsibilities assigned to it by the FSR Bill. This discussion paper outlines the SARB's approach to executing its financial stability mandate and describes a range of possible tools to address systemic risk. Building on work carried out by other central banks, the paper identifies and describes three important steps in the process of activating macroprudential instruments, namely a systemic risk assessment, building a case for macroprudential intervention, and selecting and applying the macroprudential instruments.

Further information regarding policy instruments, their activation and deactivation, and impact on financial system stability will be communicated in the biannual *Financial Stability Review* (FSR). A regular section in the FSR will summarise policy measures taken and their impact. Communication will also take place through press releases and regular speeches by the Governor and Deputy Governors of the SARB.

The promulgation of the FSR Bill will provide the SARB with the necessary legal powers to fulfill its financial stability responsibilities. This process will benefit from feedback and comments from all interested parties, including financial institutions that would be affected by the decisions taken by the SARB with regard to the activation or deactivation of macroprudential tools. The feedback will provide information on how comprehensive the instruments included in the toolkit are, whether the paper focused on the appropriate instruments, and whether the criteria used to assess the different macroprudential instruments are reasonable and sufficient.

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