- CONSULTATION DOCUMENT -

MACROPRUDENTIAL FRAMEWORK

March 2015

CONTENTS

I. INTRODUCTION

1) Scope and purpose of the document

This document sets out the objectives, instruments and decision-making process of macroprudential policy, without prejudice to the achievement of the primary objective of the National Bank of Serbia (NBS).

The NBS mandate for the implementation of macroprudential policy stems from Article 4, item 3 of the Law on the National Bank of Serbia (RS Official Gazette, Nos 72/2003, 55/2004, 85/2005 – other law, 44/2010, 76/2012, 106/2012 and 14/2015), which stipulates that the NBS "shall determine and implement, within its scope of authority, the activities and measures aimed at maintaining and strengthening the stability of the financial system".

Given that macroprudential policy is a statutory function of the NBS, it is necessary to define the ultimate, primary and intermediate objectives of macroprudential policy and the instruments for their achievement. The purpose of the document is to address these questions in compliance with relevant domestic and international regulations and practices. Since macroprudential policy is continuously developing, this document will change and develop over time as well.

2) Definitions

1) ***Systemic risk*** is the risk of disruption to financial services in the financial system that could pose serious negative consequences for the real economy. There are two dimensions to systemic risk. The first

dimension is ***structural risk***, i.e. the risk of interconnectedness stemming from the linkages among financial institutions (cross-sectional dimension), while the other dimension is ***time component,*** i.e. time-varying risk that depends on the phase of the financial cycle (cyclical dimension of risk)[1].

2) ***Macroprudential policy*** refers to activities and measures aimed at preventing, mitigating and eliminating systemic risks.

3) ***Macroprudential instruments*** are legally binding macroprudential measures aimed at achieving macroprudential objectives.

4) ***Systemically important financial institution*** is a financial institution supervised by the NBS, the deterioration of whose financial condition or failure would have serious negative effects on financial system stability. Systemically important financial institutions are identified based on clearly defined criteria and methodology, with a particular emphasis on the size of an institution, its interconnectedness with other participants in the financial system and substitutability in this system, as well as the size and complexity of its operations.

[1] See: *Bank of England (2009) The Role of Macroprudential Policy, p. 16.*

II. MACROPRUDENTIAL OBJECTIVES AND INSTRUMENTS

1) Macroprudential objectives

Macroprudential objectives are divided into ultimate, primary and intermediate objectives.

1.1) Ultimate macroprudential objective

The ultimate macroprudential objective is contributing to the safeguarding and strengthening of financial system stability by preventing new systemic risks and mitigating and eliminating the existing ones, while ensuring the contribution of the financial system to sustainable economic growth.

1.2) Primary macroprudential objectives

Primary macroprudential objectives include:

1) strengthening of the resilience of the financial system so that it may absorb financial and economic shocks more rapidly, without posing adverse consequences for the functions of the system (***structural dimension of systemic risk***);

2) mitigation of the financial system pro-cyclicality and its impact on the intensification of financial and business cycles (***time dimension of systemic risk***).

1.3) Intermediate macroprudential objectives

Primary macroprudential objectives are achieved through *the following intermediate macroprudential objectives*:

1) Mitigating and preventing excessive credit growth and leverage;
2) Mitigating and preventing excessive maturity mismatch between the funding sources and placements of financial institutions;
3) Mitigating and preventing concentration of financial institution exposures to specific sectors or asset classes;

4) Limiting the systemic impact of misaligned incentives in terms of favouring certain financial institutions, with a view to reducing moral hazard;
5) Strengthening the resilience of financial infrastructure.

2) Macroprudential instruments

Macroprudential instruments are legally binding measures the application of which leads to the achievement of intermediate macroprudential policy objectives. The selection of specific macroprudential instruments is a part of a broader process of identification and measurement of systemic risk, based on which appropriate instruments are determined.

Once the danger of systemic risk emerging or increasing has been identified, it is necessary to carefully decide on the point at which one or several macroprudential instruments will be introduced, relaxed or deactivated. The identification of systemic risk and the choice of appropriate instruments entail monitoring and analysing movements in various systemic risk indicators (Section III describes the decision-making process regarding macroprudential policy in more detail). In selecting instruments, the first issue to be addressed is the source of systemic risk, followed by the selection of appropriate instruments targeting certain balance sheet categories or terms of lending. Quite often, several macroprudential instruments are implemented simultaneously, with a view to achieving different intermediate objectives. When selecting instruments, it is particularly important to be mindful of their interconnectedness in order to avoid adverse consequences for the financial system.

Since individual macroprudential instruments are not explicitly set out in the Law on the National Bank of Serbia, as is the case with monetary policy

instruments, this document only provides an overview of the basic characteristics of potential macroprudential instruments and their objectives. Table 1 illustrates intermediate macroprudential objectives[2] and instruments to be used for their achievement. The document proceeds to provide explanations for each of the objectives and instruments, whereby some instruments may be used for achieving several objectives.

Table 1. **Intermediate objectives and macroprudential instruments**[3]	
1.	**Mitigating and preventing excessive credit growth and leverage** 1.1. Countercyclical capital buffer 1.2. Sectoral capital buffer 1.3. Macroprudential restriction on the leverage ratio 1.4. *LTV* (loan-to-value) limit 1.5. *LTI* (loan-to-income) limit
2.	**Mitigating and preventing excessive maturity mismatch between the funding sources and placements of financial institutions;** 2.1. Liquidity coverage ratio – *LCR* 2.2. Net stable funding ratio – *NSFR* 2.3. Loan-to-deposit ratio – *LTD*
3.	**Mitigating and preventing concentration of financial institution exposures to specific sectors or asset classes;** 3.1. Macroprudential restrictions on exposure to a particular sector or asset class
4.	**Limiting the systemic impact of misaligned incentives in terms of favouring certain financial institutions, with a view to reducing moral hazard;** 4.1. Capital buffer for systemically important financial institutions
5.	**Strengthening the resilience of financial infrastructure;** 5.1. Systemic risk buffer

[2] Intermediate objectives of macroprudential policy have been defined in accordance with the Recommendation of the European Systemic Risk Board on intermediate objectives and instruments of macroprudential policy.

[3] The NBS will post on its website the details related to intermediate macroprudential objectives and macroprudential instruments (the objective of an instrument, the preparatory period for introduction, the calculation method, frequency of revisions, etc.).

1. Mitigating and preventing excessive credit growth and leverage. Excessive credit growth is one of the causes of financial crises, which is exacerbated by assumption of new liabilities not covered by a proportionate increase in capital.

Instruments:

1.1. ***Countercyclical capital buffer*** (CCB) is a regulatory requirement for allocating a capital add-on, expressed as a percentage of risk-weighted assets and may be changed in the course of the financial cycle. This specific capital add-on should enable banks to sustain future potential losses in case systemic risks materialise, i.e. at a time of a financial crisis. Decisions on introducing or releasing a countercyclical capital buffer are based on the movements of selected risk indicators (e.g. the credit gap). Generally speaking, CCB is introduced at times of excessive credit growth which increases systemic risk. This allows the business cycle to dampen, while reducing systemic risk. At the same time, buffer build-up enables the continuation of lending even during the crisis period, thus cushioning the GDP fall. The CCB deactivation is most often linked to credit activity developments, but also involves the monitoring of another set of indicators.

1.2. ***Sectoral (countercyclical) capital buffer*** is a temporary additional capital buffer introduced due to banks' exposure to specific sectors or asset classes, aiming to reduce credit activity concentration in sectors with growing systemic risk. It is expressed as a percentage of risk-weighted assets and may be changed in the course of the financial cycle. Sectoral capital buffers can be set up in two ways: (*1*) by introducing sectoral risk weights (e.g. a higher risk weight for housing loans,

construction loans, unsecured consumer loans, etc.) or (*2*) by introducing an additional capital buffer which is implemented depending on banks' risk-weighted exposure to particular sectors.

1.3. ***Macroprudential restriction on the leverage ratio*** is the limit (threshold) on the ratio between core capital and total (balance and off-balance sheet) exposure of a bank, which is not adjusted to risk. It is expressed as a percentage and may be changed in the course of the financial cycle. Introduction of a limit, i.e. prescription of a minimum ratio between capital and total assets reduces the possibility of disorderly deleveraging. In most cases, it is introduced to supplement instruments aimed at capital adequacy which is calculated by considering the bank's risk exposure.

1.4. ***Loan-to-value requirement – LTV limit*** is a cap on the maximum amount of a mortgage loan relative to the value of real estate serving as collateral. The introduction of an LTV limit directly affects credit activity as it limits the number of potential loan beneficiaries. Consequently, credit demand is reduced and a rise in real estate prices limited, which contributes to the dampening of the financial cycle. This and other instruments that restrict credit demand reduce the risk of a debtor's inability to service debt. The limit may be changed in the course of a cycle. In Serbia, this limit was introduced in 2011 and equalled 80% for foreign currency denominated and indexed mortgage loans approved to natural persons (Decision on Measures for Safeguarding and Strengthening Financial System Stability, RS Official Gazette, No 34/2011).

1.5. ***Loan-to-income requirement - LTI limit*** is a limit on the maximum amount of borrowing relative to disposable income of a loan beneficiary (the regulator prescribes the number of disposable monthly incomes used

for the calculation of this limit). The LTI limit, similarly to the LTV limit, prevents loan beneficiaries from excessive borrowing. At the same time, this instrument has a restrictive effect on the approval of loans to risky categories of clients. However, unlike the LTV limit, the LTI limit can be more restrictive in the stage of real estate price increase, since disposable income movements are more stable than real estate price movements.

2. Mitigating and preventing excessive maturity mismatch between funding sources and placements of financial institutions. Excessive reliance on short-term funding sources can result in a sudden lack of liquid assets, which can lead to fire sales of assets at prices considerably lower than market prices. That can, in turn, generate the overall market illiquidity through direct and indirect interconnectedness among financial institutions (structural systemic risk).

Instruments:

2.1. ***Liquidity coverage ratio (LCR)*** is a regulatory requirement which mandates banks to keep an additional temporary liquidity buffer over the microprudential requirement regarding the minimum ratio of liquid assets to liquid liabilities. It can be changed in the course of the financial cycle. Holding assets that are easily convertible into cash (highly liquid assets) should enable a bank to service its liabilities for a 30-calendar day liquidity stress scenario. This period is considered to be long enough for the bank management and supervisor to take appropriate corrective measures for adequate bank resolution.

2.2. ***Net stable funding ratio (NSFR*)** is a regulatory requirement for covering the estimated required amount of long-term assets by the available amount of stable long-term funding (over a one-year time horizon when the financial system is under stress). This restriction should

encourage reliance on more stable (longer-term) funding sources, but is not easy to put into practice (because the required amount of long-term assets needs to be determined), which is why it is left to national discretion. Since the NSFR is focused on long-term funding sources, it is used to complement the LCR, which is focused mostly on the coverage of short-term funding sources due within 30 days.

2.3. ***Loan-to-deposit ratio (LTD*)** is the limit on bank loans over bank deposits. It can be changed in the course of the financial cycle. The instrument is used to limit over-reliance on less stable funding and to encourage reliance on more stable funding sources such as deposits.

3. Mitigating or preventing concentration of financial institution exposures to specific sectors or asset classes. Excessive exposure to a particular sector or a single asset class can result in the vulnerability of the financial system to a systemic event (e.g. a sudden price fall in the real estate market can disrupt the entire banking system if there is a large exposure to that market).

Instruments:

3.1. ***Macroprudential restrictions on exposure to a particular sector or asset class*** is a regulatory restriction on a bank's exposure to a particular sector or asset class, to the level established as a core capital percentage (e.g. exposure cannot exceed 10% of core capital). Unlike microprudential restrictions on large exposures, which are less restrictive (they allow a higher percentage of exposure), the macroprudential restriction is aimed at reducing concentration risk, diminishing the possibility of sectoral risk contagion in the system and reducing the risk of counterparty default.

4. Limiting the systemic impact of misaligned incentives in terms of favouring individual financial institutions, with a view to reducing moral hazard. This objective is achieved by implementing measures to strengthen the resilience of systemically important financial institutions to systemic risks. At the same time, internal strengthening of systemically important institutions' capacities reduces the probability of moral hazard arising from implicit government guarantees for the liabilities of these institutions.

Instruments:

4.1. ***Capital buffer for systemically important financial institutions*** is a special additional capital buffer for systemically important financial institutions and is expressed, like other capital buffers, as a percentage of risk-weighted assets. This means that these institutions, in addition to minimum microprudential capital adequacy and potentially other capital buffers (e.g. countercyclical, sectoral or systemic capital buffers), will have to meet the requirement relating to this special capital buffer. Disruptions in the operations of a systemically important financial institution or its failure could severely disrupt the functioning of the financial system as a whole, threatening economic activity as well. This instrument reduces the probability of such an event. The level (percentage) of this buffer does not have to be the same for every systemically important institution; instead, it is set in proportion to the importance of institutions. The use of this instrument also neutralises the comparative advantage which such institutions enjoy owing to their "too big to fail" status (moral hazard).

5. Strengthening the resilience of financial infrastructure. Smooth performance of financial transactions is a prerequisite for preserving the confidence in the financial system and safeguarding its stability. Therefore, it is

necessary to limit the risks that can arise due to shocks with long-term effects which are not related to financial and business cycles.

Instruments:

5.1. ***Systemic risk buffer (SRB)*** is an additional capital buffer expressed as a percentage of risk-weighted assets. Introducing this instrument reinforces the resilience of individual financial sector segments, and of the sector as a whole, to potential long-term, i.e. structural shocks which are not related to cycles (e.g. a change in regulations or change in accounting standards, modified complexity of the financial system, etc.). The introduction of a capital buffer for these purposes increases financial capacity, which in turn boosts the ability of the system to absorb potential losses. Although the main purpose of this instrument is to provide protection against structural systemic risk, it can also be used for risks associated with business cycles, if they lead, for example, to exposure concentration. The SRB can be introduced for one, several or all institutions in the system. When introducing this instrument, attention should be paid to ensure that it does not jeopardise the performance of financial intermediation.

New intermediate macroprudential objectives and instruments are determined on the basis of an assessment regarding the movements in selected indicators for the domestic financial system, while taking into account the need to mitigate or eliminate existing risks, and to prevent the emergence of new systemic risks.

Bearing in mind that the instruments shown in *Table 1* under Nos 1.1, 1.2, 1.3, 2.1, 2.2, 3.1, 4.1. and 5.1. are governed by the European Union regulations which implement the Basel III standard, they will be applied once those regulations are transposed into the domestic legal system.

The overview of instruments presented in *Table 1* is not an exhaustive list of macroprudential instruments available to macroprudential policy makers nowadays and remains subject to change and improvement.

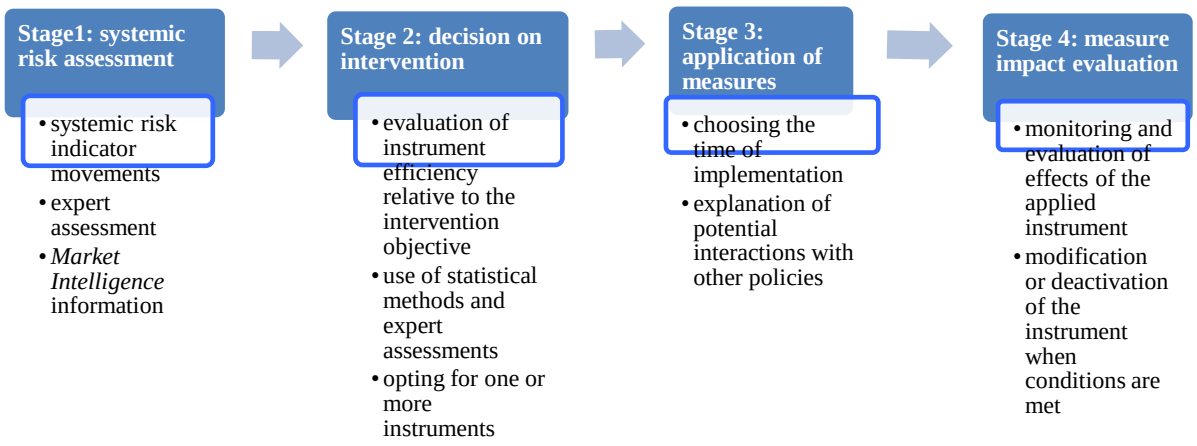
III MACROPRUDENTIAL POLICY DECISION-MAKING

1) Decision-making process

Macroprudential policy is implemented in four stages:

1. Identification, assessment and monitoring of systemic risk;
2. Selection and calibration of macroprudential instruments;
3. Implementation of macroprudential instruments;
4. Evaluation of the impact of the applied instrument

Diagram 1 **Macroprudential policy cycle (decision-making process)**



The first stage of the macroprudential policy cycle involves systemic risk identification and assessment. For these purposes, it is necessary to monitor and analyse movements in various indicators of the structural and time dimension of systemic risk. It is particularly important to assess whether indicators improve or deteriorate. Since, in most cases, movements in one indicator are not a sufficient basis for determining whether there is a need for macroprudential intervention, a

broader set of indicators is usually monitored. This set of indicators can be supplemented and modified over time. Expert assessment and qualitative information obtained through *Market Intelligence* also play an important role at this stage. For that reason, the most appropriate way to reliably assess the danger of systemic risk emergence is to monitor a broader set of indicators, including data collected in bank examinations and the financial market, with the option to modify and supplement that set. It is also necessary to carry out stress tests at regular intervals to assess the resilience of the banking system; these tests are subject to constant improvement. A good assessment of systemic risks thus constitutes an important first step in the adoption of sound macroprudential decisions.

The second stage of the macroprudential policy cycle begins when the danger of systemic risk emergence or growth is identified. At that point it is very important to assess whether a macroprudential intervention is necessary or whether fiscal or monetary policy measures are more appropriate. It is also important to inform market participants about the existence of systemic risk in the early stages. In certain circumstances, the issuance of warnings or recommendations can be sufficient to cause a change in the behaviour of market participants without having to use macroprudential instruments. If the risk has been determined to be at a level that requires the implementation of these instruments, during selection, their efficiency needs to be assessed in relation to the specific objective of the intervention (e.g. prevention of excessive credit growth). An optimal reaction may often include the use of several instruments at the same time, which should also be taken into account in this stage of the macroprudential policy cycle. For example, in the upturn phase of the credit cycle, in order to prevent excessive credit growth, it is possible to exert direct influence on certain high-risk borrowing as well (e.g. by setting a cap on the loan-to-value ratio) in addition to introducing the countercyclical capital buffer.

The third stage of the macroprudential policy cycle involves deciding on when to implement the instruments, which can be very important for the accomplishment of an objective or objectives. The timeliness of the intervention requires a good assessment, while the length of the preparatory period depends on the specific macroprudential instrument. Premature or late implementation of an instrument can create higher costs than a timely intervention. For instance, introducing an instrument too soon may give rise to various kinds of financial system disruptions, such as shifts in certain types of financial flows outside the banking sector. Introducing an instrument too late means that systemic risk has already built-up and its mitigation is going to be more expensive and with limited effects. In principle, macroprudential instruments should be applied according to a predefined formula (clear rules), proactively and in the manner which does not affect the already concluded loan agreements. However, the possibility of discretionary decision-making cannot be ruled out, particularly in situations of strong and sudden systemic risks. Communication and explanations of the reasons for the introduction of an instrument are also very important, as is the clarification of potential interactions between instruments being introduced and microprudential, monetary and fiscal policy measures.

The fourth stage of the macroprudential policy cycle involves evaluating instrument implementation, i.e. whether the set objective has been achieved. Whether the instrument has caused certain undesired effects is also assessed at this stage. If the conditions so require, the implemented macroprudential instrument may be modified or deactivated.

Deciding when to introduce, relax or deactivate macroprudential instruments is not always simple, because their effects are asymmetric: they are easier to implement when they are intended to counteract the upturn phase of the cycle, than in the downturn phase of the cycle, when more active lending should be encouraged. Thus, during a financial crisis, when it is essential that banks are

adequately capitalised and able to continue providing necessary credits, it is not easy to exert influence on financial institutions to maintain an adequate level of credit activity (due to the banks' risk aversion). For that reason, the effects of macroprudential instruments are weaker in the downturn phase of the financial cycle, when financial institutions are trying to reduce their risk exposure, than in the upturn phase of the cycle.

Annual Financial Stability Reports, prepared and published by the NBS, provide an overview of the situation and developments in the financial system and the information on potential risks to financial system stability and proactive and corrective measures implemented in that regard.

2) Cooperation between institutions

Safeguarding and strengthening the stability of the financial system as a whole implies swift and coordinated action of relevant institutions. In order to promote formal cooperation among institutions included in the supervisory and regulatory financial system framework, in late 2013 the Government of the Republic of Serbia, the National Bank of Serbia, the Deposit Insurance Agency and the Securities Commission set up a separate inter-institutional body – Financial Stability Committee (Committee).

The Committee operates as an advisory body with the task of discussing and assessing issues of financial system stability and possible measures that can be implemented to maintain it. The Committee acts towards strengthening mutual cooperation and harmonising policies and measures implemented by the institutions, in accordance with their responsibilities, for the purpose of safeguarding and strengthening financial system stability. The Committee has

established a system for maintaining regular dialogue between the relevant authorities and a system of communication lines in crisis situations.

Abbreviations:

CCB: Countercyclical capital buffer

LCR: Liquidity coverage ratio

LTI: Loan-to-income ratio

LTV: Loan-to-value ratio

LTD: Loan-to-deposit ratio

NSFR: Net stable funding ratio

SRB: Systemic risk buffer