

**STABILITY TODAY – STABILITY TOMORROW**  
**MACROPRUDENTIAL STRATEGY**  
**OF THE MAGYAR NEMZETI BANK**



**2018**





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The Macroprudential Strategy has been revised by the expert staff of the Macroprudential Directorate in collaboration with colleagues of the Directorate for Insurance, Pension Funds and Intermediaries Supervision, the Directorate for Credit Institutions Supervision and the Directorate for Capital Markets and Market Supervision.

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## INTRODUCTION

*Macro-prudential interventions may be required to manage systemic problems*

**The magnitude of economic losses caused by the global financial crisis demonstrated the crucial importance of the stability of the financial system in the viability of a country's economy.**<sup>1</sup> The crisis underscored that microprudential interventions alone are unable to prevent the financial disturbances that inflict heavy losses on the real economy. It became clear that a systemic focus of prudential interventions in the financial system was indispensable for this. In addition to actively combat systemic financial risks, there is a need to effectively enhance the resilience of financial entities.

In the European Union, macroprudential policy achieves its goal through more conscious, systematic, thorough and harmonised analytical and regulatory processes. The driver behind these efforts is the European Systemic Risk Board (ESRB), which supports efficient macroprudential policy by its recommendations, while the implementation takes place at the national level in Member States and at the level of the euro area across the Banking Union.

The Hungarian macroprudential strategy presented below consists of seven main parts.<sup>2</sup> First of all, we describe the vision, mission and strategic objectives of the Magyar Nemzeti Bank (MNB) in relation to macroprudential policy (i). Next, we provide a clear explanation for why macroprudential interventions are needed (ii). We enumerate the market frictions and market failures inherent in the financial intermediary system that may render the functioning of the financial system too risky for the economy as a whole, giving rise to financial or real economic crises. In the third part, we describe the criteria to be considered while setting up the institutional framework for an effective and efficient macroprudential policy and during the development of the macroprudential strategy (iii). We then proceed to present the external environment of the Hungarian macroprudential policy, the legal framework and the structure of the institutional system (iv), and discuss the application of the Hungarian macroprudential instruments (v). Finally, as transparency is of primary importance in the efficient implementation of macroprudential policy, we provide a more detailed overview of its communication in Hungary (vi) and external control (vii) of macroprudential policy.

<sup>1</sup> The reasons for the occurrence of the international financial crises are detailed in e.g. Part I of Acharya and Richardson (2009), Chapter 2 of Dewatripont et al. (2010), and Rajan (2010). The history of the US crisis is explained in detail in Gorton (2010) among others. Laeven and Valencia (2013), as well as Reinhart and Rogoff (2009) provide a summary on the general experiences of financial crises.

<sup>2</sup> In accordance with Recommendation C of ESRB (2013), the macroprudential authorities of EU Member States define a policy strategy.

## 1. VISION, MISSION AND STRATEGIC OBJECTIVES

### 1.1. Vision

The financial intermediary system considered desirable by the MNB as a macroprudential authority lacks systemic financial risks that may give rise to or exacerbate severe financial stress events; its institutions are highly resilient to possible shocks and offer a sustainable contribution to the economic growth of Hungary.

### 1.2. Mission

Without prejudice to its primary objective of price stability, the MNB as a macroprudential authority strives to maintain the stability of the financial intermediary system as a whole, to enhance the resilience of the financial system and ensure its sustainable contribution to economic growth, and to reduce the pro-cyclicality of the banking system. With that in mind, relying on the expertise of its staff and in close cooperation with market participants and the relevant domestic and international authorities, the MNB implements its macroprudential policy as transparently as possible.

### 1.3. Strategic objectives

The MNB ensures the fulfilment of its mission as a macroprudential authority along the lines of the following strategic objectives:

- **Encourage prudent risk-taking:** Responsibility for the exacerbation of systemic financial risks and, in many cases, for the emergence of financial crises, lies primarily with the excessive risk-taking of economic entities participating in financial intermediation. Therefore, a primary task of the macroprudential policy pursued by the MNB is to explore and prevent various forms of excessive risk-taking in the financial intermediary system, and to curtail and restrict excessive risk-taking if it nevertheless has emerged. Since excessive risk-taking is the result of various market frictions and market failures in the financial intermediary system, the MNB can most effectively serve this purpose by giving due consideration to these market problems.
- **Strengthen resilience:** The macroprudential policy of the MNB is designed to reduce the probability of financial crises even if risks persist despite the practice of prudent risk-taking. As a result of external shocks, negative events may often realize in a critical part of persisting systemic risks in the financial system, giving rise to financial crisis situations. The MNB strives to enable the financial intermediary system to withstand, as much as possible, economic shocks and recover from financial stress events as unharmed as possible. The enhanced resilience of financial actors may help mitigate disturbances in financial intermediation, reducing the probability of negative spill-overs to the real economy and the multiplication of crisis effects. To this end, on the one hand, the macroprudential policy of the MNB is intended to ensure that financial players have sufficient capital and liquidity reserves in the event of a



financial stress episode. On the other hand, it is designed to ensure the resilience of the structure of the financial intermediary system to possible contagion effects in stress events. Finally, the macroprudential policy of the MNB also devotes attention to the cyber security of the financial system, which is particularly critical considering the institutions of the financial infrastructure and other systemically important financial institutions. Efficient protection against cyber risks becoming increasingly important in recent years because of technological development is not just in the interest of market participants, but also relevant for authorities responsible for the stability of the financial system due to the potential effects of cyberattacks on the whole financial system.

- Ensure a sustainable contribution of the financial sector to economic growth:** Appropriately serving the previous two objectives, macroprudential policy supports a persistently stable financial system, which in itself encourages sustainable economic growth. At the same time, beyond these two objectives, the macroprudential policy of the MNB strives that the entire financial system supports the functioning of the economy as a whole at a sustainable way irrespective of the cyclical position of the entire financial system. One of the related aspirations is to promote the appropriate cost-efficiency and competitiveness of financial institutions. To this end the macroprudential policy of the MNB seeks to support an intensive but not risk-based competition; furthermore, the MNB endeavours to promote the agile adaptation of financial innovation without threatening the stable functioning of the financial system. A more competitive financial system directly improves the efficient functioning of the whole economy, while it also contributes to financial stability through enhancing the flexible adaptability of financial institutions to unexpected events. Another general economic intent of the macroprudential policy of the MNB is to facilitate financial institutions' optimal allocation of financial resources to non-financial economic sectors; i.e. to finance to a greater extent those more productive non-financial sectors which have a greater sustainable contribution to economic growth.

The main cornerstones of the MNB's macroprudential strategy designed to serve its strategic objectives are the following:

- Commitment and professional operation:** As a macroprudential authority – in accordance with the Statutes of the MNB –, the MNB is committed to serving the public good and supporting objectives serving broad social interests. It is a priority objective of the MNB to ensure that macroprudential policy decisions are based on high-quality decision planning. The MNB relies on strong professional expertise and knowledge base, and the significant information base that is indispensable for the implementation of efficient macroprudential policy is at its disposal. For the efficient mitigation of systemic financial risks, the MNB assigns decision planning tasks to

experienced and committed staff members with adequate professional integrity. The MNB updates and enhances the available knowledge base through the continuous integration of Hungarian and international experience, best practices and novel concepts.

- **Proactive and preventive approach:** In its independent decision-making, the MNB intends to address systemic financial risks by way of a proactive and preventive approach. If actual or potential systemic risks can be identified, in order to minimise expected losses, the MNB strives to intervene as early and effectively as possible in such a manner as to keep potential adverse effects to the minimum. To be effective, the active intervention approach must be matched with adequate professional expertise and prudence; therefore, the macroprudential authority involves the relevant stakeholders (other authorities, market participants) in laying the foundation of decision planning. Proactive operation also calls for the continuous monitoring and assessment of systemic risks, as well as the adjustment of financial entities to macroprudential interventions. This also allows for the efficient fine-tuning of the instruments applied. If a regulatory instrument required for proactive operation is not available, by virtue of its mandate the MNB may call the legislator's attention to the necessity of mitigating the relevant systemic risks.
- **Integrated operation:** By using a number of different instruments, macroprudential policy attempts to mitigate various systemic financial risks by way of continuously improving interventions, which may also affect other policy areas and the macroprudential interventions of other countries. Firstly, with a view to ensuring the success of macroprudential policy, the MNB focuses on using the various regulatory tools in a coordinated and sufficiently integrated fashion. Secondly, the MNB also endeavours to ensure appropriate consistency between the efforts of a broad range of professional areas, including methodology development, risk analysis and intervention planning. Thirdly, it is also essential to enable the smooth integration of macroprudential policy into other policy areas including monetary, microprudential and fiscal policy, resolution, deposit insurance and competition policy. Fourthly, it is the MNB's goal that its macroprudential policy is properly aligned to the frameworks defined by the organisations of the European Union and to the macroprudential practices of EU Member States.
- **Transparency and credibility:** As long as it is not constrained by financial stability considerations, the MNB intends to ensure, to the extent it is possible, the transparency of macroprudential policy. It is only alongside transparent and regulated operation and clear communication that the proactive approach can guarantee that the stakeholders of macroprudential policy are informed about macroprudential interventions in a timely manner so that they can adequately prepare for their implementation. This improves the credibility, predictability and acceptance of macroprudential policy, which are indispensable for the adequate

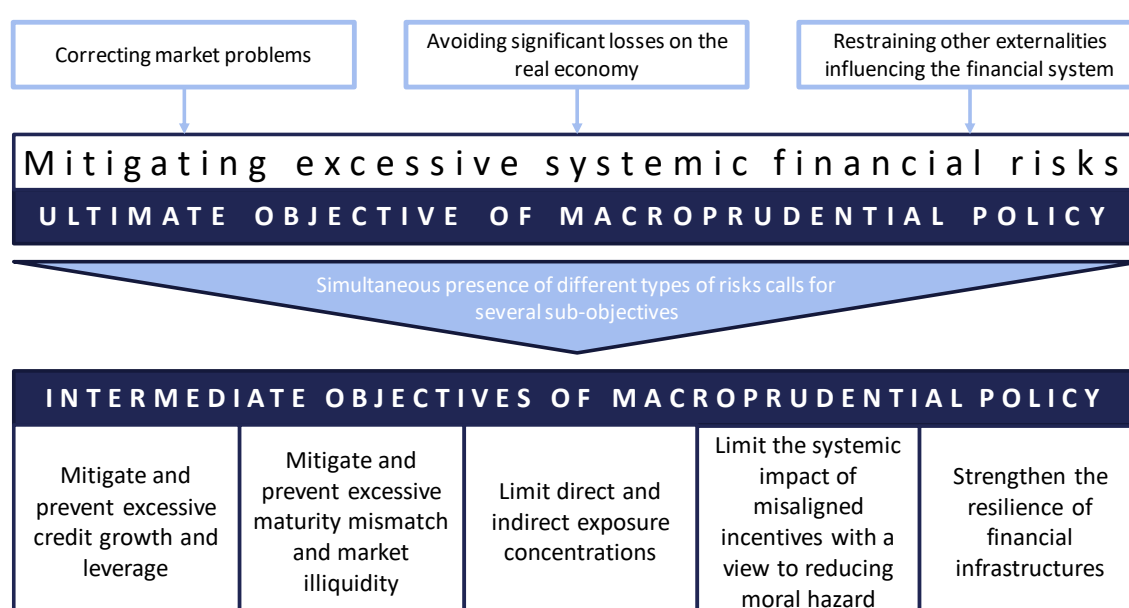
shaping of market expectations and for the proper adjustment to regulations, which, in turn, improve the efficiency of macroprudential policy.

## 2. WHAT JUSTIFIES THE NEED FOR MACROPRUDENTIAL POLICY?

### 2.1. Ultimate objective of macroprudential policy

The ultimate objective of macroprudential policy is to *mitigate excessive systemic financial risks*. This means that it should strive to prevent severe financial crises and minimise their effects on the real economy if they nevertheless arise. The set of objectives of macroprudential policy are summarised in Chart 1.

**Chart 1: Set of objectives of macroprudential policy**



Each element of the precise definition of the ultimate objective is significant. Systemic risk, in general, is the threat of such potentially severe disturbances of the financial intermediary system that could impair the functioning of the entire economy. This means that it is not the ultimate objective of macroprudential policy to prevent all financial turbulences. It however needs to stem, as far as possible, risks that could inflict *potentially significant losses on the real economy*.

Systemic financial risks would exist even alongside efficiently functioning financial intermediation. Without macroprudential interventions, however, market frictions and market failures may exacerbate systemic financial risks. Consequently, macroprudential policy should mitigate *excessive* systemic risks, primarily by correcting the effects of market frictions and market failures.

Macroprudential policy is not capable of preventing financial systemic risks completely, only *mitigating* them significantly. Macroprudential interventions, by nature, may have

undesired adverse effects as intervening authorities must face a severe, difficult-to-overcome shortage of information regarding various facts. Although a substantial amount of relevant information has been accumulated as a result of the upsurge in research in the aftermath of the global financial crisis, the precise impact mechanisms of the main market problems that give rise to systemic risks are yet to be fully understood. In addition, since even the already identified phenomena are often hard to measure with any precision, their close monitoring remains a daunting task.

It is therefore important to set realistic social expectations with respect to macroprudential policy. The correction of certain market problems may prove to be insufficient or fail altogether as a result of poorly focused or unjustified requirements. **By contrast, successful and efficient macroprudential policy improves the position of a broad range of economic actors and boosts the competitiveness of the economy, while its social benefits greatly outweigh its social costs.**

## 2.2. Market failures underlying systemic risks

*Multiple  
intermediate  
objectives  
require  
multiple  
instruments*

The operationalisation of the macroprudential policy objectives outlined in the previous section necessitates a more in-depth exploration of systemic financial risks. These systemic risks can be rather diverse due to the simultaneous presence of different market frictions and market failures in the financial system. **This calls for the definition of several intermediate policy objectives with the assignment of various instruments to serve individual objectives.** Accordingly, macroprudential policy typically implies a regulatory regime of “multiple objectives – multiple instruments”. At the beginning of this section, we provide a brief summary of the main market problems and the systemic risks they generate.<sup>3</sup> Based on international experience, five intermediate policy objectives<sup>4</sup> may be defined to attenuate these risks, which cover the majority of the systemic risks to be mitigated. These five intermediate objectives – which were considered in establishing the macroprudential framework – will be presented in the next section in greater detail.

*Cyclical  
systemic risks  
may stem from  
a change in risk  
appetite*

**Systemic financial risks are traditionally divided into two types: cyclical and structural systemic risks.** The presence of market imperfections in financial intermediation and the softening risk perception encourage participants in financial intermediation to take on greater and greater risks, which ultimately gives rise to excessive risk-taking. Often as a result of external shocks, negative events may realize in a critical part of these systemic risks. In a financial crisis, the excessive risk-taking of financial intermediaries is replaced by excessive risk aversion. Cyclical systemic risks are associated with the co-movement of financial intermediaries’ risk appetite in a direction that is either higher or lower than the optimal level.

<sup>3</sup> Based on Freixas, Laeven and Peydró (2015), Rochet (2007), and Freixas and Rochet (2008)

<sup>4</sup> See Recommendation A/2 of ESRB (2013).

*Structural  
systemic risks  
may  
exacerbate  
financial crises*

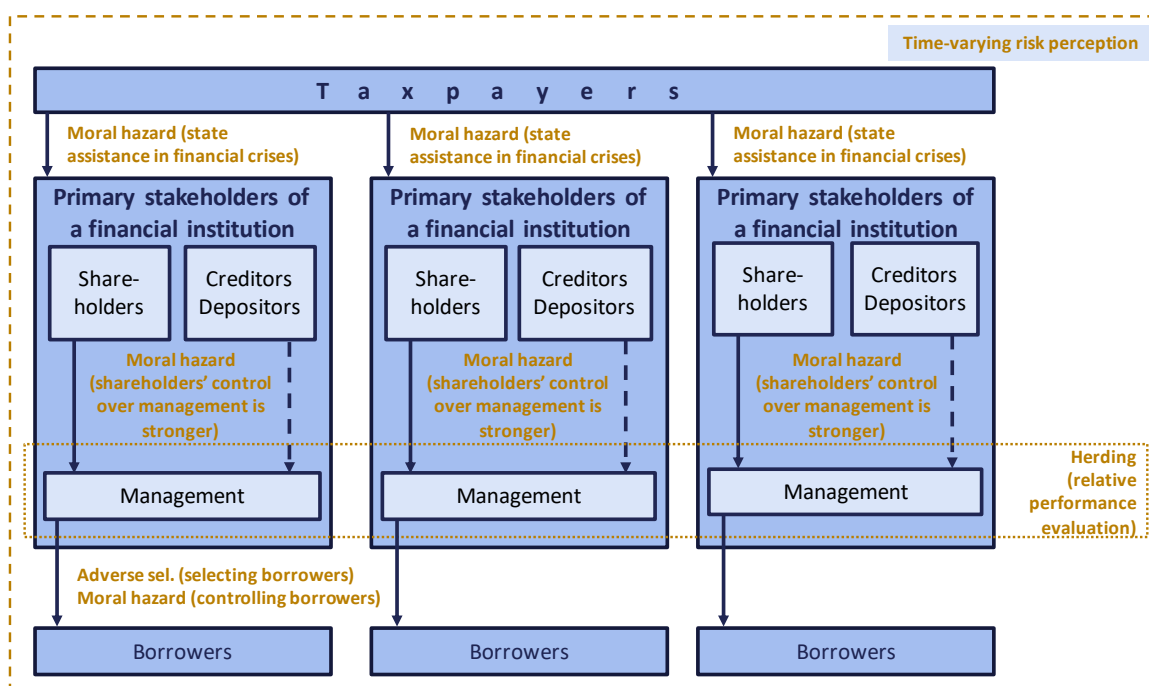
In times of financial crises, problems related to the network that links financial participants to one another also come to the surface. As a result, financial crisis phenomena can spread extremely fast and intensely between financial entities (“contagion”). Structural systemic risks are associated with the crisis amplifier effects stemming from the structure of the interconnections between financial participants and from the riskiness of certain financial participants residing in the network.

#### 2.2.1. Market failures underlying cyclical systemic risks

*Problems with  
incentives  
problems and  
time-varying  
risk aversion*

**The cyclical build-up of systemic risks can be largely attributed to problems with incentives stemming from asymmetric information and time-varying risk perception.** As shown by Chart 2, the main challenges are created by the following problems.

- **Shareholders’ control over management is stronger than anyone else’s:** Contrary to other types of entrepreneurship, the activity of financial intermediaries primarily relies on external debt financing. In the event of the default of a financial institution, therefore, the lion’s share of the losses will be borne, in theory, by external debtholders rather than the owners, while any profits earned are collected by the latter. At the same time, since shareholders usually can control the management responsible for the financial decision making of the financial institution much more directly than external debtholders, the management is more prone to identify with the interests of shareholders (“moral hazard”). Thus, the management might be encouraged to take on excessive risks to the detriment of the external debtholders of the financial institutions.
- **Relative performance evaluation:** Even the owners of financial organisations fail to have full control over the management of the organisation (“moral hazard”). Shareholders are forced to motivate management on the basis of success, in which relative performance evaluation – performance measured in comparison to similar financial organisations – usually play an important role. Relative performance evaluation, however, can provide an incentive for correlated risk-taking, which could exacerbate excessive risk-taking further. In such cases, individual decision-makers are less inclined to make decisions against market trends because, if they prove to be wrong, the performance of the financial organisations managed by them will fall behind the industry average, reducing the potential income of the decision-maker. This is probably the case even when market trends are unfounded based on the information available to individual managements (“herding”). Correlated risk-taking is also encouraged by the fact that it exacerbates systemic risks, which increases the chance of a group default. This dampens the sense of danger of individual managements as, thanks to the relative performance evaluation, individual losses of income after a group default will be less harsh than they would be after an individual default.

**Chart 2: Market problems underlying structural systemic risks<sup>5</sup>**

- **State assistance in financial crises:** Mandatory deposit insurance schemes, the central bank's lender of last resort function and state capital injections by the state to financial institutions during financial crises are not only unable to ease these incentive problems, but they may aggravate them even further. Indeed, central bank liquidity assistance and bank bailouts<sup>6</sup> may dampen the *ex ante* loss perception of bank owners. This means overall, that *ex post* state interventions and crisis management also exert a significant impact on the build-up of cyclical systemic risks. Consequently, *ex ante* and *ex post* state interventions should be thoroughly coordinated.
- **Time-varying risk perception:** Economic agents may be less risk averse during periods of boom, when risk-taking feels less intimidating in the context of high consumption and better financial positions. Economic agents with limited rationality tend to have a short-term memory with regard to previous crisis events and underestimate the probability of disastrous outcomes ("disaster myopia"). Market actors with limited decision-making capacity are more likely to disregard highly improbable events expected for the distant future. In order to uphold their convictions, economic agents may opt for selective information processing, which may dampen, or also heighten, their risk perception.

<sup>5</sup> The comprehensive theoretical analysis of economic situations characterised by adverse selection and moral hazard can be found in the books by Laffont and Martimort (2002), Bolton and Dewatripont (2005), as well as Salanié (2005). Hirshleifer and Hong Teoh (2003) give an overview on models of herding.

<sup>6</sup> By reducing the possibility of state bank bailouts significantly, the resolution framework and the bail-in requirements adopted in 2016 have a strong impact on these incentives.

*Forms of  
excessive risk-  
taking*

**As a result of market players' excessive risk-taking, the performance of their basic duties gradually deteriorates.** Due to their size, expertise and access to data, banks are usually more efficient in selecting positive net present value projects ("adverse selection"), and controlling borrowers ("moral hazard") than individual savers. Excessive risk-taking by banks – partly through the appreciation of collateral – may lead to the financing of projects with poor returns, i.e. excessive lending. Parallel to this, leverage may also increase, or excessive credit expansion may lead to the exacerbation of maturity and currency mismatches. In short, banks' ability to perform their maturity transformation and risk transformation role may gradually deteriorate along with their ability to guard against liquidity risks. Excessive lending often creates asset price bubbles, especially when credit growth is concentrated in certain economic sectors, typically, the real estate market.

### 2.2.2. Categorization of cyclical systemic risks

**The cyclical systemic financial risks could be categorized as the following.** In the case of excessive risk-taking or risk aversion cause symmetric mechanisms of systemic risks, for the sake of simplicity only the former is going to be described below.

- **Excessively lenient contracting conditions:** In this case, creditor institutions provide loans with excessively loose conditions and to investment projects of unfavourably low return prospects with weak screening or monitoring thereafter. An associated, particular mechanism could be the case when the financing of debtors and investment projects with high repayment risk continues even when their bad expected return quality have already become clear for the management of the financial institution (so-called "zombie lending"). In these cases, the management taking on excessive risk delay loss recognition, possibly further accumulating losses, gambling on the low probability event of the recovery of the debt financing capacity of a debtor or a project. In addition to lending services, excessively lenient conditions could contribute to systemic risks in many other types of financial services. Typically, these risks arise when financial service providers engage in the so-called risk-based competition instead of or besides competition in price and quality and they service increasingly risky clients.
- **Excessive leverage:** Financial institutions taking on excessive risks may intend to increase their leverage due to competition or the need for growth of the particular institution; however, capital owners can divert a bigger portion of the risks towards financial intermediaries or their external creditors, while benefits mostly stay with them. All this may also weaken the commitment of the capital owners, while it may lead to risk-taking in excess of the concerned institution's risk profile.
- **Excessive maturity and foreign currency mismatches:** Excessive credit growth often relies on financing with excessive maturity or foreign currency mismatch. Stretched-out maturity or foreign currency structure of financing could be



excessively risky, as it increases the amount of liabilities which must be extended frequently, or the proportion of liabilities denominated in foreign currency, which may be problematic to provide for. Not just banks, but other financial institutions, for instance open-ended investment funds could also be vulnerable to problems of excessively relying on liabilities which are redeemable on the short-term.

- **Asset price bubbles:** A self-reinforcing interaction may arise between lending and asset prices. This interaction comes into play typically when the purchaser of the affected asset who finances the transaction by borrowing uses the purchased asset as a collateral. In case of mortgage lending the real estates, or for interbank transaction securities may be the subjects of these mechanisms. It is worth mentioning that the easing of the collateral requirements by central counterparty clearing houses<sup>7</sup> and the overvaluation of assets used as collateral for their transaction could also induce self-reinforcing interactions. An overvalued asset, for example in a collateralized loan transaction implies higher risk because at the end of the over-valuation, the value of the collateral correctively decreases and in case the borrower cannot service the debt, the creditors' incurred losses given default may increase.

The high volatility of asset prices affects insurers as well, through specific mechanisms. While the assets of insurers typically consist of securities with market valuation, a significant proportion of their liabilities are not directly associated with market prices, for instance technical provisions<sup>8</sup>. Therefore, the volatility of security prices could often affect the asset side more than the short-term valuation of the liabilities. In consequence, an extreme volatility of market valuation of the insurers' investments could cause significant changes in their capital position and may even threaten their solvency.

- **Closer interactions with real business cycles:** Wide-spread excessive risk-taking in the financial system could potentially amplify real economic conjunctures and deepen recessions. During periods of general economic upturns, demand for financial services often expands and consequently the growth of lending activity, of investment and insurance services demanded provides further opportunities for investment and consumption.

A special role can be attributed to insurance products that are helpful in mitigating the decrease of the income of households during down-turns of business or

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<sup>7</sup> Institutions of the financial infrastructure conduct the accounting and processing of transactions related to payment and securities dealings, as well as the collection and publication of data related to these transactions. Special attention should be paid to central clearing parties (CCP), which guarantee the execution of transactions standing between the parties conducting the deal as the buyer for the seller and the seller for the buyer; in other words, a CCP unloads the partner risk from the contracting parties. This way, the CCP can also net claims among financial actors in connection with it, which decreases the amount of the total exposure and the necessary securities and margin requirements.

<sup>8</sup> The accounting technical reserves equal the amount that the insurer would pay if its insurance liabilities were immediately handed over to another insurer.



financial cycles, promote financial self-care and the availability of long-run savings during these periods (e.g. loan repayment and unemployment insurances). However, if insurers cannot service the accumulating claims in recessionary periods, this smoothing effect could not be realized, and their financial problems could even deepen the financial stress.

The systemic risk effects of the changing interest rate environment may also be related to the characteristics of the real business cyclicity. A low interest rate environment puts the interest income of financial intermediaries under pressure, which may incentivize them to reallocate their investments by taking on additional risk in order to increase the expected return (“search for yield”). For the insurers, incentives for additional risk-taking could stem from the present value accounting of provisions’ expected cash-flows; at the same time, a mitigating effect may come from their asset and portfolio composition and from the higher solvency capital requirements related to riskier investments.

### 2.2.3. Market failures underlying structural systemic risks

*Negative externalities*

**The intensification of financial crisis situations is largely due to the negative externalities arising from the interconnectedness of individual financial organisations.**

It is a special feature of the financial system that even competing organisations execute a multitude of transactions between one another, resulting in a network of diversified business connections. At the same time, individual organisations do not take proper account of the extent to which their business relations will strengthen or weaken the spillover of a financial crisis across the financial system. On the one hand, they do not have sufficient information about the role of their business partners within the network and, on the other hand, they do not have a vested interest in taking into account the financial stability of organisations residing at more remote points in the network (“negative externality”). This lack of information may be exacerbated further if the mediation and settlement of transactions and the allocation of risks between counterparties are generally not performed in a standardised and transparent manner.

### 2.2.4. Categorization of structural systemic risks

*Channels of contagion*

**In financial networks the following main channels of contagion may materialise.**

Individual channels of contagion are not independent of one another; they may be interconnected in several ways.

- **Contagion through counterparty risk:** The value of receivables from a financial institution under financial strain or bankruptcy depreciates. This causes capital loss and hence, increased leverage at financial organisations carrying such assets. As a result, creditors’ claims vis-a-vis these more vulnerable organisations will also depreciate. The process may be aggravated further by a fast deterioration of expectations as indeed, none of the financial institutions has precise information

about the quality of assets held by its counterparties, and the loss in confidence may equally affect less contaminated organisations (“adverse selection”, “herding”). For insurance companies, sector-specific financial interconnections are established through reinsurance transactions made on the globally concentrated reinsurance markets. Therefore, interconnections on the reinsurance markets may contribute significantly to systemic risks. Another specific channel for financial contagion could be formed between the insurance and the banking sector if insurers take on credit risk to a systemically relevant extent through transactions like credit insurances and credit derivatives.

- **Fire sales:** In the hope of recovering the capital adequacy needed for stability, newly vulnerable financial organisations start selling their assets *en masse* and prematurely. This situation leads to a prisoner’s dilemma: as an individual, everyone has a vested interest in selling the assets as soon as possible at still relatively high prices, but ultimately, in the lack of sufficient demand most of them will end up with very low prices. The sharp decline in asset prices will eventually affect even those organisations which were not forced to sell the assets originally (“pecuniary externality”).
- **Exacerbation of the aggregate liquidity shortage:** Before the crisis, financial institutions are prone to stretch their maturity structures, with an increasing number of banks financing long-term, illiquid assets from short-term funds. In case of a financial stress event, however, these organisations cannot be sure that they can continue this frequent refinancing of funds undisturbed; therefore, they try to accumulate as much liquidity as possible. This, however, exacerbates the aggregate liquidity shortage, which may trigger premature fire sales at organisations with insufficient liquidity, generating the negative spillover effects mentioned above.
- **Real economy feedback:** In crisis situations, banks typically restrain their lending activity, which helps improve their capital and liquidity positions at the same time. The decline in lending is directly proportional to the degree of excessive risk-taking before the crisis and to the strength of the contagion amplifier effects of the financial network. This excessive restraint on lending causes the most devastating losses to the real economy. Economic activity declines and unemployment increases, which, in turn, generates a backlash across the financial system due to the deteriorating solvency of debtors. Thus, via their lending practices individual financial institutions can also influence the stability of each other – although, for the most part, indirectly – through the channel of the real economy.
- **Effect of systemically important financial institutions:** The structure of the financial network also has a fundamental impact on the direction, speed and magnitude of contagion. One of the important traits of financial networks from a systemic risk perspective is that larger, more complex organisations or those

located at systemically important nodes of the network represent a greater threat to financial stability and are sometimes more vulnerable than others. It is vital to reduce the excessive risk-taking of these systemically important institutions because, when faced with a financial stress event, they alone could trigger a financial crisis with devastating losses to the real economy.

- By definition, institutions of the financial infrastructure are systemically important. Disruptions in their functioning may block the operation of the money and capital markets through the interdependence between the systems building up the financial infrastructure and the low degree of substitutability of these building blocks. Based on the experiences of the financial crisis, a large proportion of the over-the-counter transactions are required to be undertaken by involving central counterparties, which has further increased the systemic importance of these institutions of financial infrastructures.
- **Concentrated exposures:** Another important characteristic of the financial network is the direct and indirect interconnections formed by concentrated exposures. For instance, certain banks may target specific geographic regions, economic sectors or client types and specialize their activity for providing lending to particular groups of borrowers. Another example are insurers focusing their product lines on a particular type of risk events. Contagion effects may strike specialized institutions through their concentrated exposures. However, in cases diversification may also include financial activities which entail risks. For example, insurers may enter into credit markets aside of offering more traditional insurance products. In these cases, financial institutions may be exposed to systemic risks not because of the few but strong, but due to the numerous and potentially badly managed connections.
- **The role of agents and brokers:** An additional relevant characteristic of the financial networks is the role played by multiple agents and brokers intermediating financial products between service providers and clients, who have a significant role in the sale of insurance products, but also of loan and leasing products. Therefore, the significant presence of agents and brokers in the supply chains and their incentives for risk taking could affect systemic risks related to their principals.

### 2.3. Intermediate objectives of macroprudential policy

Even this short summary of the underlying market problems behind excessive risk-taking reveals that systemic risks are rooted in a large number of diverse factors. In order to address the relevant market problems, macroprudential policy needs to rely on different instruments. It is advisable, therefore, to apply a systemic risk classification where each systemic risk phenomenon classified into a certain category can be tackled efficiently by

*Multiple intermediate objectives can be defined for multiple market problems*

targeted instruments. **In accordance with the ESRB's recommendation<sup>9</sup>, the MNB pursues the following five intermediate objectives during its macroprudential interventions (see Chart 1).**

- **Mitigate and prevent excessive credit growth and leverage:** Excessive credit growth is a typical cyclical systemic risk phenomenon, which is often followed by financial crises. Excessive credit expansion is usually accompanied by an increase in leverage, which makes financial market participants particularly vulnerable to the losses arising from non-performing loans. Therefore, it is vitally important to contain excessive credit growth and leverage or, failing that, to strengthen the resilience of financial institutions to financial crises. Macroprudential policy can address the former in case of household lending mostly by the so-called debt cap rules (see Table 1) and the latter primarily by tightening capital requirements. By limiting leverage and making credit more expensive, this, in itself may reduce the probability of the emergence of a financial crisis. The capital buffers created in the upturn could be released in a financial crisis to absorb the potential losses of financial market participants, while supporting the maintenance of lending activity.
- **Mitigate and prevent excessive maturity mismatch and market illiquidity:** The two problems are interrelated: during the cyclical build-up of maturity mismatches, financial institutions fund long-term assets with short-term liabilities more and more. Consequently, the increasing volume of short-term liabilities in need of refinancing heightens the demand for market liquidity. Macroprudential policy can directly limit asset-liability maturity mismatches and strengthen the liquidity of market participants. A typical choice for addressing maturity mismatches is to require banks to finance their non-liquid assets with stable funding and to hold a sufficient portfolio of liquid assets.
- **Limit direct and indirect exposure concentrations:** From the aspect of the financial system as a whole, even non-excessive exposures may give rise to systemic problems when concentrated in only a few sectors of the economy. Under such circumstances, a downturn in certain sectors' economic performance may generate severe losses across the entire financial system. It is important, therefore, that macroprudential policy can limit large exposures for specific groups of financial intermediaries and certain groups of their counterparties.
- **Limit the systemic impact of misaligned incentives with a view to reducing moral hazard:** Systemic financial risks typically emerge as a consequence of some kind of a misaligned incentive; indeed, in one way or the other, the costs and benefits faced by individual decision-makers will always be different, in such cases, from

<sup>9</sup> See Recommendation A/2 of ESRB (2013).

the total costs and benefits that materialise at the level of society. The specific focus of this intermediate objective is on addressing two narrow set of problems. Firstly, state interventions in times of financial crisis (e.g. emergency liquidity assistance, bank recapitalisation, resolution, liquidation) should not weaken financial institutions' pre-crisis incentives for prudent operation. Secondly, when the tools serving the above intermediate objectives can only achieve partial results, other arrangements should be made to mitigate misaligned incentives (e.g. regulation of the remuneration of management).

- **Strengthen the resilience of financial infrastructures:** This intermediate objective is intended to address externalities within the financial system's infrastructure and correct the moral hazard effects that could arise from the legal systems, credit rating agencies and deposit guarantee schemes.

*Credit  
institution are  
the focus of  
macro-  
prudential  
policy*

**At present, the macroprudential policy of the MNB primarily intends to influence the banking sector.** This focus of macroprudential policy is justified by practical rather than theoretical reasons. On the one hand, banks pursue a number of systemically important financial activities, critical for the functioning of the economy; e.g. deposit products are provided for mostly by banks. In Hungary, the banking sector is materially larger than the other sectors pursuing important financial activity, and thus systemic financial risks may typically be concentrated there. On the other hand, the activity of non-bank financial organisations – the category which primarily includes financial enterprises, mutual funds, investment firms, insurance companies and various voluntary funds – differs, in several respects, from each other's (and the banks') activity. Accordingly, these sectors require special systemic risk monitoring system and macroprudential interventions. Thirdly, banks had a key role in the recent financial crises, and thus the international macroprudential framework is elaborated to the highest degree also in the case of the banking sector. The view of the MNB is that it is worth enhancing the macroprudential policy framework related to the management of non-bank systemic risks on a continuous basis. Until such time as a set of instruments with direct scope is elaborated, the management of systemic risks in this segment may take place through the application of the microprudential or supervisory instruments based on a comprehensive approach.

*Intermediate  
objectives  
should be  
reviewed  
periodically*

**The appropriateness of intermediate policy objectives should be assessed periodically and adjusted in view of the current information to ensure that they are sufficient to effectively pursue the ultimate objective of macroprudential policy.** The adjustment may be justified by new experience gained in operating the macroprudential policy framework, structural developments in the financial system and the emergence of new types of systemic risks. The MNB reviews its macroprudential strategy, including the intermediate objectives, on a biennial basis. When the MNB intends to adjust its intermediate policy objectives as a result of the review, it notifies the ESRB and all other relevant Hungarian and international stakeholders.

### 3. ASPECTS TO BE ASSESSED IN FORMULATING THE MACROPRUDENTIAL POLICY

In the previous sections we summarised the market frictions and market failures behind the systemic financial risks and concluded that macroprudential policy should be designed to correct these phenomena to the extent possible. **Having established the objective of macroprudential policy, the next step is to describe the method of its efficient implementation.** In the section below we present the main criteria and dilemmas that all EU Member States and authorities must face in formulating the optimal macroprudential strategy and policy framework. The dilemmas are essentially the same; however, in Hungary country-specific circumstances may necessitate decisions that deviate from those made in other countries.

#### 3.1. Coordination with other policies

**Macroprudential policy is in close interaction with numerous other policies.** Effective and efficient state intervention calls for the coordinated operation of various policies. There may be conflicts between different policy objectives. With that in mind, coordinated state interventions should serve a thoughtful compromise between conflicting goals. Below we discuss the five policy areas with which macroprudential policy is in the most intensive interaction.<sup>10</sup>

##### 3.1.1. Microprudential policy

*Cooperation with micro-prudential policy may create important synergies*

Microprudential supervision is aimed at the stable operation of individual financial organisations which, however, does not necessarily imply the containment of systemic financial risks. **This is because at the system level, it is not only the risks associated with individual financial organisations that matter but also the way in which they are interrelated (“fallacy of composition”).** Prevention of excessive financial risks at the system level – rather than just at the individual level – is precisely what justifies the need for macroprudential policy.<sup>11</sup>

Synergies in relation to microprudential policy:

- *Efficient exchange of information:* Processes entailing systemic risks and the level of compliance with macroprudential rules can be identified with increased precision with the assistance of targeted, organisation-level microprudential analyses. This may be especially important in the case of banks that may generate systemic risks themselves. The timely recognition of macroprudential vulnerabilities may contribute to clarifying the risks that pose specific threats to the stability of individual financial organisations for microprudential supervision.

<sup>10</sup> A more detailed account can be found in IMF (2013a), ESRB (2014) and World Bank (2014).

<sup>11</sup> Osinski et al (2013) details the interrelated effects of micro- and macroprudential policies.

- *Proven microprudential instruments:* Macroprudential regulation harnesses several instruments already included in the microprudential toolkit; their application is already backed by useful experience.

Possible conflicts with microprudential policy:

- *Harmful competition:* Due to the similarity of their objectives and the partial overlap between the applied instruments, it is often difficult to define the boundary between the two areas, which may cause frictions.
- *Conflicting objectives in times of financial tensions:* A bank under financial strain may improve its resilience by selling a substantial volume of overly risky assets or by accumulating liquid assets, but this may deteriorate the stability of the banking sector as a whole. The sale of risky assets may trigger fire sales and hence, expand the scope of the financial stress event. The accumulation of liquid assets, in turn, may exacerbate the aggregate liquidity shortage that is often inherent in financial crises in the first place.

The purpose of macroprudential interventions is to safeguard financial stability across cycles and – the not closely related – turbulent periods. **Therefore, while macroprudential policy should be formulated on the basis of the results of microprudential policy, its objectives should be complementary to those set for microprudential policy.**

### 3.1.2. Monetary policy

*Smoothing  
business cycles  
and financial  
cycles requires  
different  
approaches*

In the European Union, price stability is typically the primary objective of monetary policy. Since maintaining the stability of the financial system also plays an important role, monetary policy and macroprudential policy interact with each other. An important difference between the objectives of the two interventions is that while monetary policy predominantly influences cyclical economic phenomena, macroprudential policy also shapes structural ones. The main mission of monetary policy is to maintain price stability by attenuating the business cycles induced by macroeconomic shocks. Macroprudential policy, on the other hand, mitigates not only the time dimension of systemic risks that change in tandem with the financial cycles, but also their cross-sectional dimension. The special rules applicable to systemically important banks have been designed to serve this purpose.<sup>12</sup>

Synergies in relation to monetary policy:

- *Long-term, complementary objectives:* On the one hand, persistently stable prices may create a more predictable investment environment, which also facilitates the more stable operation of the financial intermediary system. On the other hand,

<sup>12</sup> The interactions of the monetary and macroprudential policies are discussed in more detail in IMF (2013b).



amid moderate systemic financial risks, the financial system is less likely to accentuate macroeconomic shocks, and the swings of the business cycle and inflation will be more subdued.

- *More efficient monetary policy transmission:* With the mediation of a stable financial system, the instruments controlled directly by monetary policy can induce effects in the economy at large fairly consistent with monetary policy intention.
- *More differentiated macroprudential instruments:* Macroprudential policy not only has various different instruments, but they can also be used in a more targeted and differentiated manner. These instruments are capable of mitigating the adverse effects inflicted on the stability of the financial system even without jeopardising price stability. As a result, monetary policy may be, for the most part, relieved from the burden of achieving its financial stability objective when it is potentially in conflict with the primary objective, maintaining price stability.

Possible conflicts with monetary policy:

- *Business and financial cycles may also be smoothed at the expense of each other:* Developments in financial and business cycles are different from one another. For example, when economic output remains persistently below its potential level, key policy rates – maintained at persistently low levels in view of the low inflationary pressure – may encourage the under-estimation of financial risks or fuel asset price bubbles.

### 3.1.3. Economic policy, fiscal policy

Synergies in relation to economic policy and fiscal policy:

*Significant synergies but also significant conflicts may materialise*

- *Financial crises may be addressed more easily:* Macroprudential policy can best support fiscal policy by reducing the frequency and moderating the magnitude of financial crises that deplete substantial amounts of fiscal resources. In addition, disturbances in financial intermediation may significantly deteriorate the performance of economic policy as well.
- *More sustainable economic growth:* Economic policies aimed at improving competitiveness and facilitating sustainable economic growth cannot be successful without a consistently stable financial system. If not prudent enough, economic policy may encourage excessive consumption decisions or unprofitable investment decisions. The financing of such decisions may well entail systemic financial risks.

Possible conflicts with fiscal and structural policy:

- *Public debt problems may spill over to the banking sector:* Unsustainable public debt may render the entire banking sector vulnerable because of the potentially



substantial amount of sovereign debt held in banks' portfolios. When general confidence in the solvency of the state deteriorates, the secondary market value of this debt declines.

- *Impact of the tax system on capital structure:* More than any other sector, the banking sector funds its operations from loans rather than capital, which generally has more favourable taxation implications than capital gains. Thus, fiscal policy may implicitly encourage banks to maintain low capital-to-asset ratios, which may deteriorate their shock resilience.
- *Subsidies and benefits may encourage excessive risk-taking:* State subsidies and other benefits may encourage consumption and investment decisions entailing systemic financial risks.

#### 3.1.4. Resolution

Resolution may improve the incentives of financial intermediaries significantly

Resolution is a state intervention that requires a lower amount of public funds than bank bailouts, while ensuring the continuity of the critical functions of a bank or investment company, for example, by providing continuous access to bank deposits and corporate credit lines. The resolution authority temporarily assumes ownership and management rights in order to segregate the good assets of the distressed financial institution from its impaired assets and sell them to solvent market participants. Losses generated during the process will be borne by shareholders in the first round, by professional creditors (e.g. bondholders) in the second round, and by the resolution fund replenished by banks in the third round. Public funds may only be allocated to cover the losses in the form of a state loan granted to the resolution fund; in other words, resolution should remain fiscally neutral in the medium term.

Synergies in relation to resolution:

- *Reduced frequency and easier management of institutional crisis events:* When systemic financial risks are contained, they lead to fewer and less devastating institutional crisis events, increasing the probability of a successful resolution procedure. Successful resolution procedures, therefore, reduce the moral hazard associated with the shareholders and management of banks and amplified by bank bailouts. This is because bank owners and bank management are less likely to expect state bailout packages; in addition, banks are required to make regular payments to the resolution fund in proportion to their risks.

### 3.1.5. Competition policy

*There is a need to promote competition that is equally sensitive to a combination of market problems*

#### Synergies in relation to competition policy

- *Risks posed by systemically important banks decline:* Restraining dominant market positions by competition regulations may moderate the systemic risk associated with systemically important banks and with exposure concentrations.

#### Possible conflicts with competition policy:

- *Haphazardly promoted competition:* When competition policy boosts market competition in an environment where the state fails to properly restrain the incentives for excessive risk-taking, it can do more harm than good. Competitive pressure imposed on the banking sector from the non-banking sector – which is less regulated from a microprudential and macroprudential point of view – may also be detrimental overall.

### 3.2. Rules vs. discretion in decision-making

**Below is a summary of the ways in which rule-based and discretionary operating methods may contribute to the success of macroprudential policy.** In the case of the rule-based approach, certain pre-defined indicators are typically expected to give an insight into systemic financial risks in a pre-determined fashion, which allows the regulatory authority to apply the available instruments automatically. There are no such automated mechanisms with respect to the issues remaining under the discretionary powers of the regulatory authority.<sup>13</sup>

#### Arguments for rule-based decision-making:

- *Adequately active macroprudential policy:* The risk of excessive inaction on the part of macroprudential policy (“inaction bias”) often arises due to the fact that the costs of the intervention are incurred by financial intermediaries immediately and in a concentrated manner, whereas the reduction of systemic financial risks takes hold over a longer time horizon and its benefits are distributed among numerous participants of the economy. Therefore, facing the direct costs, the industry lobby of the financial sector may take action for more relaxed macroprudential regulation. Governments, in turn, are sensitive to election cycles, and thus may also be inclined to underestimate the long-term benefits of the reduction of systemic risks and support a less stringent regulation than would be optimal. The commitment force of rules may be a helping hand in the implementation of macroprudential interventions.

<sup>13</sup> On the two types of methods of operation in relation to macroprudential policy see also ESRB (2014) Chapter 9.

- *More predictable and more transparent macroprudential policy:* As opposed to the discretionary approach, it is easy to predict and understand the responses of the legislator to given situations.
- *Market expectations can be shaped with more precision:* A more predictable intervention environment can more efficiently influence the expectations of market participants. Consequently, macroprudential interventions can trigger the intended market adjustment more easily.
- *Better international harmonisation of macroprudential policies:* It is easier to take into consideration the diverse interactions between numerous countries if they operate in accordance with harmonised rules. By contrast, if the current situation is always addressed by new discretionary decisions, impact analysis and coordination may become more difficult.

#### Arguments for discretionary decision-making:

- *Applicability of new information and expert judgements:* As macroprudential policy develops continuously at the international level as well, the use of regulatory instruments should be founded on the broadest currently available information base. This can be achieved more easily with discretionary decision-making.
- *It encourages for the continuous revision of macroprudential policy:* Upon the making of decisions, the lack of automated decision-making mechanisms prompts decision-makers to revise, again and again, the prevailing practice of macroprudential policy.
- *More targeted interventions:* With discretionary decision-making, macroprudential interventions can be adequately targeted and aligned to the current situation, thereby supporting the specific correction of the various market problems behind systemic risks.
- *Unexpected events can be addressed with more flexibility:* In the absence of pre-defined rules, unexpected events can be addressed by better and more targeted intervention.
- *Circumvention of the regulation can be restrained more easily:* As financial entities may even resort to unpredictable solutions to circumvent macroprudential interventions, a discretionary approach to macroprudential policy might be a more efficient method of enforcing the regulatory intent than the rule-based approach.
- *The mitigation of certain systemic risks is hard to automate:* Attempts to scale down the cyclical dimension of systemic risks may lead to numerous decision points as, in function of financial cycle developments, the application method of the relevant instruments should be reassessed continuously. In such cases,

possible situations and the alternatives they give rise to are difficult to consider *ex ante*, even though it would be a necessity for rule-based functioning.

*There is a need  
for an  
appropriate  
combination of  
rules and  
discretion*

The rule-based approach can be combined with the exercise of discretionary powers in numerous ways; indeed, there is a need to combine them because, as we have seen, in the case of macroprudential policy neither approach can be deemed to be better than the other with respect to all key features. By establishing the institutional environment of macroprudential policy, the long-term rules driving the regulatory activity can be fixed *ex ante* along with the decision-making powers of individual participants, which they will practice at their discretion. **In the newly evolving practice of the European Union, an important role is given to the principle of “guided discretion”.** According to the principle of guided discretion, macroprudential interventions are shaped by pre-defined rules, from which decision-makers may depart in specific pre-decision scenarios provided that they offer adequate justification.

*Significant  
international  
effects vs.  
material  
country-  
specific  
features*

### 3.3. Degree of macroprudential independence across the Member States of the EU

**The systemic financial risks of individual EU Member States may be in close interaction with one another.** As a result, national macroprudential policies are unable to successfully fulfil their mission in isolation. Accordingly, there is a need for EU organisations to define certain elements of macroprudential policy that are mandatory for all EU Member States.

Arguments for constrained Member State discretion:

- *Cross-border systemic risks:* From the perspective of individual Member States, the importance of monitoring the international financial intermediary system primarily depends on their own involvement; therefore, they may underestimate cross-border impacts and risks.
- *Coordination of macroprudential policies across Member States:* In general, it is true that restraining the build-up of a country's systemic financial risks protects the financial stability of other countries at the same time. There is a risk, however, that in view of the differences in the stringency of macroprudential regulations across countries, activities involving systemic risks may start to migrate toward countries where systemic risks were high in the first place. In such cases, the process will deteriorate the situation even further.

Arguments for broader Member State discretion:

- *Macroprudential interventions differentiated by country:* Member States may need to perform country-specific interventions. The financial cycles, the features of systemically important banks and banks' importance in the financial intermediary system of individual countries differ from country to country. Country-specific information and experts familiar with these factors are more likely to be available in the given country.

- *Coordination with decentralised policies:* Most Member States exercise independent control over fiscal policy primarily, but also over microprudential supervision and, in the case of non-euro area Member States, monetary policy. Efficient cooperation with various state organisations, therefore, requires the resolution of a vast array of country-specific details.
- *Stronger democratic legitimacy:* Democratic control, in general, can be exercised more easily over Member State macroprudential authorities than over the relevant EU organisations. The degree of confidence in and adjustment to regulations is typically higher when stakeholders are able to exercise better democratic control over the regulation.

*Independent  
but  
coordinated  
national  
macro-  
prudential  
policies*

**Accordingly, macroprudential policy in the European Union is essentially based on the independent decisions of Member States; however, there is strong coordination at the level of the Union.** EU organisations assist the work of national macroprudential authorities by data collection, analyses and warnings, and by issuing recommendations aimed at specific interventions. In addition, in the interest of reducing the build-up of cross-border systemic risks, they also expect the adoption of intervention measures (reciprocity).

### 3.4. Independence of macroprudential policy

The state assumes a broad range of economic roles, with the government exercising various degrees of direct influence over their performance. **For the purposes of macroprudential policy, the extent to which macroprudential policy is independent of the government is primarily debatable at the Member State level.**<sup>14</sup>

Arguments for tight government control:

- *Potentially better coordination with economic policy and financial policy:* Economic policy and financial policy are controlled directly by the government. In theory, coordination with macroprudential policy could be improved by more direct government control. The same is true to financial policy areas that are also controlled directly by the government (e.g. financial regulation). Nevertheless, a close cooperation between the two public policies could considerably improve coordination between macroprudential policy and economic policy even in the absence of close control.

Arguments for independence from the government:

- *Adequately active macroprudential policy:* In the build-up phase of systemic financial risks, governments are often prone to procrastination with regard to macroprudential interventions (“inaction bias”). This is because governments are

<sup>14</sup> For more detail see Nier et al (2011).

more sensitive to election cycles than independent authorities and as such, they might underestimate the long-term benefits of the reduction of systemic risks that are distributed over time.

- *Macroprudential policy is easy to delegate:* The reduction of systemic financial risks is a task that is generally important for the vast majority of society; therefore, the government's direct control over the performance of this task is not necessary.

Commitment  
to the  
realisation of  
long-term  
benefits may  
be ensured by  
an independent  
macro-  
prudential  
authority

**According to the recommendation of the ESRB<sup>15</sup>, macroprudential policy can best serve its social objectives if its ownership is delegated either directly to the central bank or to a board with central bank representation that, while cooperating closely with the government, entrusts the central bank with a leading role.** These institutional arrangements would offer adequate confidence to policymakers and shield them against all outside pressures so that they can conduct macroprudential policy in a manner that best benefits society at large. In addition to the government, financial intermediaries, for example, are capable of exerting significant pressure and pursue special interests. These organisations are generally interested in more relaxed macroprudential interventions and have a number of special groups which may consider special benefits justified. Excessive risk-taking may also characterise borrowers; therefore, in the interest of more relaxed lending conditions, certain economic sectors or household advocacy groups may also prefer special macroprudential rules.

### 3.5. Material elements of the delegation of macroprudential policy

A clearly  
identified  
organisation  
with a strong  
mandate and  
transparent  
operation

Legislature's effective and efficient delegation of macroprudential policy is a pre-requisite for the success of macroprudential policy. **Effective and efficient delegation consists of four main components:**

- *Main organisation responsible for macroprudential policy:* If the mitigation of systemic financial risks is performed by an ambiguous hierarchy of organisations, the harmonisation of their activities will be challenging and may pose a risk of sub-optimal interventions. Several practical solutions have been devised to address this issue, and one of the main differences between these arrangements is the extent to which microprudential and macroprudential policies are integrated into the central bank accountable for monetary policy.
- *Clear organisational objectives and tasks:* There should not be any conflicts or overlaps between tasks. Division of labour between the organisations formulating macroprudential policy should be defined ex ante with special regard to hierarchical structures and decision-making procedures. In other words, one of the pre-requisites for the ability to assign clear ownership to individual tasks is the construction of an institutional framework for macroprudential policy.

<sup>15</sup> For more detail, see ESRB (2011).

- *Strong statutory mandate:* Risk analysis and pre-decision work can only be performed in possession of adequate expertise and data. Systemic risks stem from multiple sources, and the tools of intervention must be sufficiently diverse to ensure their targeted reduction. Moreover, they should exert an adequately strong impact on the decisions of financial intermediaries for the desired effect.
- *External control:* The strong statutory mandate opens up the possibility of intervention, while external control contributes to its long-term success by way of regular feedback. External control calls for the adequate transparency of macroprudential policy – provided that it is not constrained by financial stability considerations – and a clear feedback to policymakers on the practices observed. Transparency requires substantive, coherent, regular, timely, carefully targeted and coordinated communication. It is particularly important to ensure the *ex ante* coherence of the institutional framework of macroprudential policy and the regulatory process and the timely communication of any changes and their explanation. In this context, it is essential that the legislator publish the application criteria of the instruments intended to be used. Similarly, the *ex post* professional evaluation of the instruments applied needs to be publicly available. Macroprudential regulation has various stakeholders with different communication requirements in terms of content, level of detail and frequency.

#### 4. THE ENVIRONMENT AFFECTING THE MACROPRUDENTIAL POLICY OF THE MNB

##### 4.1. The development of systemic risks

**Before and during the crisis, significant systemic risks arose and took hold in the Hungarian financial intermediary system.** While these systemic risks were often correlated, they materialised in different areas. As a main driving force behind the build-up of Hungarian systemic risks, foreign currency lending was not only responsible for increased credit risks, but it also contributed to the excessive reliance on short term external funds on the financing side. Drawing on cheap and abundant external funds, the banking sector – besides the household mortgage market – had a vested interest in the promotion of foreign currency loans in the far riskier area of project financing. As a result of the changes in the international environment, the portfolio of non-performing loans drastically increased from 2008 in both segments. Maturity and on-balance sheet currency mismatches also gave rise to severe risks. Furthermore, excessive reliance on funding provided by financial institution proved to be problematic, as these funds may be subjected to swift withdrawal in great proportions under market stress.

**The management of the main systemic risks, and the mitigation of the probability of their recurrence has been largely conducted by means of a number of government (e.g. conversion of FX loans) and central bank (macroprudential instruments already in place)**



**measures.** By virtue of its strong macroprudential mandate, the MNB engaged in active risk management and developed efficient policy responses to risks emerging before and during the global economic crisis. In addition to the national derogation options afforded by European Union regulations, measures adopted under national competence (mainly in the form of long-term liquidity provisions and debt brake rules designed to restrain excessive credit outflows) also contributed to the adequate management of risks. It was an important criterion in the selection of the applied toolkit to ensure that – in addition to the macroprudential response intended to resolve already apparent risks – the necessary preventive instruments were available to eliminate such risks from resurfacing.

**Nevertheless, a number of systemic risks persist and are already in the focus of regulatory risk analysis.** The emergence of cyclical systemic risks associated with household lending is restrained by a number of macroprudential instruments; however, the default risks arising from the high volume of outstanding variable-rate household mortgage loans deserve special attention in the present low interest environment. Accordingly, several measures of the MNB are aimed at mitigating these risks. For example, the differentiation of the debt cap rules based on the length of the interest fixation period and the Certified Consumer-friendly Housing Loan scheme primarily affect the demand side, while the boosting of the mortgage bond market impacts the supply side. Furthermore, the fast growth in house prices, observed in recent years, calls for close monitoring. More cost-efficient operation would further strengthen the banks' shock-absorbing capacity, which could be supported, e.g. by the extensive and integration of digital solutions.

**The introduction of a macroprudential toolkit for efficient risk management has been largely completed.** After the previous period of intensive risk management, active vigilance may take over the leading role. Aligned to the financial cycle, the institutional and regulatory frameworks representing the cornerstone of risk management have been put in place. For the most part, these do not impose a barrier on bank processes; however, depending on risk developments – in the event risks intensify – their restraining effect may take hold. In addition to the continuous monitoring of systemic risks, the macroprudential policy of the MNB can focus on the fine-tuning and appropriate application of the existing toolkit.

#### 4.2. Legislative environment

The functioning of Hungarian macroprudential policy is determined by the legislative environment of both the European Union and Hungary. The prevailing EU bank regulation system is based on the regulation on prudential requirements for credit institutions and investment firms (Capital Requirements Regulation – CRR), and on the directive on the prudential supervision of these institutions (Capital Requirements Directive IV – CRD IV). As the vast majority of the common rules are directly applicable to banks and investment



*The frameworks established in the EU constitute the basis of the legal environment*

firms, there is very limited scope for the consideration of domestic market and institutional particularities through the exercise of national discretion. With respect to addressing special risks arising at the level of Member States and to individual responses to the different phases of financial cycles, actual room for manoeuvre is provided by the macroprudential instruments remaining under national competence. In addition to the CRD IV/CRR regulatory package, the functioning of the Hungarian macroprudential authority is influenced by delegated acts and enforcement measures adopted by the Commission. Last, but not least, recommendations and opinions issued by different EU organisations also play an important role in the conduct of macroprudential policy, with respect to the recommended methods of both risk warnings and management.

The acts constituting the legal basis of Hungarian macroprudential regulation are rooted in these European Union foundations. The basis of the Hungarian legislation comprises two pillars: the Act on Credit Institutions and Financial Enterprises (“Hpt.”) along with the Act on Investment Firms (“Bsz.”) laying down the prudential and supervisory requirements for the implementation of CRD IV, and the Act on the Magyar Nemzeti Bank (MNB Act) enshrining the macroprudential regulatory mandate and specifying the application method of the relevant instruments. These acts establish a strong and clear mandate for the Hungarian macroprudential regulatory authority and define the institutional frameworks of macroprudential policy; moreover, they specify the tools available and the method of their application.

It should be emphasised that, despite the strong mandate, the competence of macroprudential policy is limited. On the one hand, its instruments can only influence already identified risk types. On the other hand, despite the fact that they may carry severe risks, non-banking financial intermediaries can be regulated only indirectly by means of macroprudential instruments.

### 4.3. The macroprudential institutional system

#### 4.3.1. The institutional framework of the European Union

*The EU plays a legislative and consultation role in relation to macroprudential policy*

As is the case with the legislative environment, the Hungarian macroprudential institutional system can only be interpreted in the context of the European Union. The institutions of the European Union play an important role not only with respect to the legislation they can apply, but also in terms of external control.

- *European Commission:* The Commission has assumed a dual role with regard to macroprudential policy: it undertakes important tasks both as a legislator and as a guardian of harmonisation and hence, competitive neutrality. The Commission fulfils a key role in crafting EU level legislation on the management of systemic risks and their appropriate application.

- *European Systemic Risk Board (ESRB)*: The ESRB is responsible for coordinating the supervision of systemic risks across the EU. The ESRB continuously monitors and analyses existing or potential risks in the financial intermediary system and issues assessments, warnings, or recommendations for action in this regard. In the context of its recommendations, the ESRB develops both methodological guidelines and opinions related to the CRR/CRD IV EU regulatory framework.

The ESRB appears in a dual role vis-a-vis individual Member States. On the one hand, it is responsible for coordinating the establishment of the macroprudential institutional system of Member States in the form of recommendations. In the absence of a mandate for direct intervention, EU-wide macroprudential policy can only be implemented via international institutions, which the ESRB influences through recommendations. In addition, the ESRB plays an important role in the professional preparation of the national level macroprudential decisions of individual Member States and in the transparent communication of these decisions. In response to the notifications submitted by national authorities to the ESRB on the application of specific instruments, experts of the ESRB conduct professional consultations with national authorities and, with a view to establishing comparability and consistent practices, they publish the notifications received from national authorities.

- *European Central Bank (ECB)*: The ECB appears in four important roles in the European macroprudential institutional framework. Firstly, the ECB continuously monitors the processes of the financial intermediary system by preparing its own analyses; in addition, the ECB provides the analyst and data disclosure basis for the preparation of ESRB reports and in this sense, it fulfils a significant role in the monitoring of systemic risks. Secondly, drawing on its technical-analytical expertise, the ECB issues recommendations both for EU institutions and the national institutions of Member States regarding the crafting and implementation of regulations on financial stability. Thirdly, through its mandatory, public consultations, it plays a crucial role in the expert-level development of the regulatory measures of national authorities and in facilitating harmonisation. Last, but not least, as the central institution of the Single Supervisory Mechanism (SSM), the ECB participates more directly in maintaining financial stability and guaranteeing the safety of the financial intermediary system. In this context, it is entitled to prescribe even stricter macroprudential requirements than set forth at the Member State level with a view to facilitating financial stability.
- *European Banking Authority (EBA)*: Another institution responsible for the maintenance of financial stability – alongside the ones mentioned above –, focusing its activities on supervision is the EBA. In addition to the financial stability objective, the EBA's activities are aimed at the integrity, efficiency and regular operation of

the banking sector. In addition, the EBA is entitled to issue an opinion in certain cases.

**Apart from the institutions of the European Union, national authorities themselves may make an important contribution to the establishment of harmonised regulations.** Since participants of the European intermediary system are interconnected with each other in a vast number of ways, isolated regulation may be detrimental to the system as a whole. In order to ensure the enforcement of the same regulation for the same risks irrespective of the financial institution's geographical location and status, reciprocity, i.e., the guarantee the applicability of the instruments adopted in another Member State to institutions in its own jurisdiction between EU Member States is an essential requirement. Reciprocity means that a. In the absence of reciprocity, regulatory arbitrage will create unequal conditions and undermines the efficiency of regulations. While in the case of certain instruments Member States are legally bound to accept the macroprudential instruments of each other and to guarantee reciprocity, in most cases, reciprocity depends on the discretionary decisions of Member States and consequently, it is up to them to prevent cross-border regulatory arbitrage.

#### 4.3.2. Hungarian institutional framework

Clearly defined responsibilities and intervention powers are necessary conditions for efficient macroprudential policy. **Maintaining the stability of the financial system is the joint responsibility of the legislator, as well as the authorities performing supervisory, crisis management and central bank functions.** Within this cooperation framework, however, it is essential to avoid overlaps and conflicts among individual responsibilities: it is necessary to identify and provide with a clear mandate the authority responsible for the identification and management of systemic risks and the prevention of the related market failures, and this mandate should be matched by sufficient powers and specific instruments.

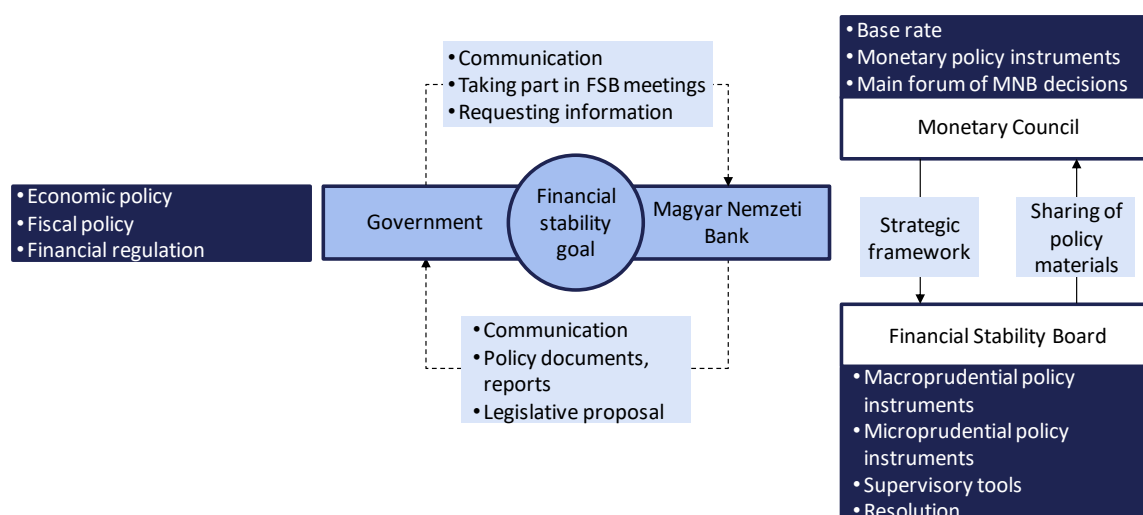
*In Hungary the MNB was provided with a clear and strong macroprudential mandate*

**In Hungary, the Magyar Nemzeti Bank (MNB) was provided with a clear and strong macroprudential mandate.** The primary objective of the MNB is to achieve and maintain price stability, and it harnesses monetary policy instruments to achieve this goal. However, without prejudice to this primary objective, the MNB maintains the stability of the financial intermediary system, and assists in enhancing the resilience of the financial system and in ensuring its sustainable contribution to economic growth. The macroprudential policy of the MNB, aimed at maintaining stability across the financial intermediary system, is conducted in consistency with these objectives. Within the organisation of the MNB, the Monetary Council (MC) establishes the strategic framework regarding macroprudential policy, while the body responsible for the definition and achievement of specific macroprudential policy objectives is the Financial Stability Board (FSB). In addition to macroprudential analytical and regulatory tasks, the FSB is

responsible for tasks related to microprudential policy and consumer protection, and for decisions relating to the supervisory and resolution authorities. Moreover, the FSB provides, as appropriate, the tripartite forum composed of the central bank, the supervision and the ministry in charge of the regulation of the capital and insurance markets, where preparations for and – if needed – the management of crises is conducted.

**An institutional model vested with such a broad mandate has numerous benefits.** Obvious synergies emerge by virtue of the location of different areas within the same institution. The free flow of information among the various areas significantly improves the efficiency of individual areas, both in the phase of risk analysis and identification and in the phase of assessment and follow-up. Moreover, a macroprudential authority integrated into the central bank can utilise the expertise and experience available in any central bank for the performance of its core tasks, in particular, with respect to monetary policy, the money market and the payment system. Despite potential conflicting opinions among the individual areas, coordination among the areas becomes far more efficient when decision-making mandates are concentrated in the hands of a single body.<sup>16</sup> The benefits of this model are enhanced by consistent communication and external control: unambiguous, uniform messages can be conveyed to the market and to the general public, while the clearly defined responsibilities of the institution ensure more transparent and more efficient operations.

**Chart 3: The Hungarian institutional system for financial stability**



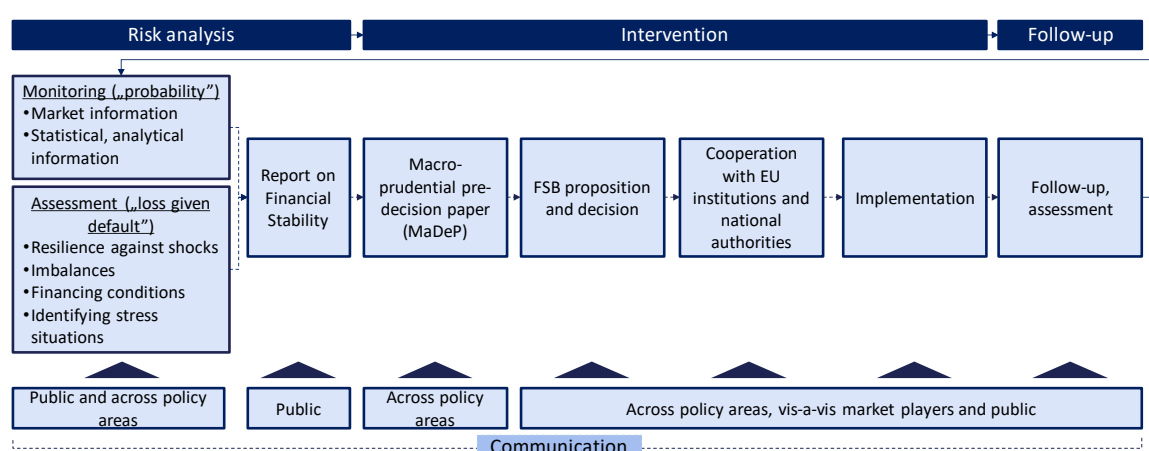
<sup>16</sup> IMF (2011)

## 5. THE PROCESS OF HUNGARIAN MACROPRUDENTIAL INTERVENTIONS – PHASES OF THE MACROPRUDENTIAL REGULATORY CYCLE

Main elements of the regulatory process: risk analysis, intervention, follow-up

The management of systemic risks essentially consists of three main phases. The first step in the regulatory cycle is risk analysis. As part of this process, the MNB identifies existing and potential systemic risks. The analysis is followed by the identification of the potential intervention instruments and, as appropriate, regulatory steps: a response will be selected from the “preliminary”, “warning” and “intervention” types of possible policy responses. The selected policy response is evaluated in the next phase, also taking into consideration internal and external information. The whole cycle is also tracked by a communication process.

Chart 4: Phases of the macroprudential regulatory cycle



### 5.1. How does the MNB identify systemic risks?

In the MNB’s view, for proactive action against risks and for adequate risk management, it is indispensable to regularly monitor risks and evaluate them relying on the analytical expertise, and communicate the assessed risks as broadly and as frequently as possible.

The continuous monitoring of risks is the cornerstone of efficient macro-prudential policy

The MNB continuously monitors the stability of financial markets and the system of financial intermediation as a whole, and assesses systemic risks by following the steps described below:

- **Risk identification:** Based on forward-looking indicators and market information, the central bank identifies the probability of market events with potentially detrimental consequences by using early warning indicators, macroprudential indicators, market intelligence and lending surveys.
- **Risk assessment:** For the assessment of risks the MNB draws on indicator-based and cross-sectional analytical methods, macro stress tests (both on the capital side and on the liquidity side), and models exploring the threats posed by contagion risks and linkages between the institutions.

With a view to covering the full spectrum of systemic risks, the FSB relies on several elements upon making its decisions regarding possible intervention measures.

- **Directly defined indicators:** In the case of certain instruments, decisions are based on a number of clear, pre-defined indicators (e.g. credit-to-GDP gap), which increases the efficiency of monitoring and facilitates the timely recognition of risks. For identifying the phases of cyclical systemic risks and for confirming the necessity of intervention, a methodology is developed for signalling the activation and deactivation periods based on the indicators applied.
- **Professional evaluation:** In many cases, systemic risks cannot be measured with such pre-defined indicators, or the thresholds measuring their severity cannot be determined *ex ante* due to the different origins and realisation methods of potential crises. Therefore, in addition to existing analytical expertise within the MNB, continuous communication and cooperation with market participants and various policy areas play a prominent role in the efficient recognition of risks and in the selection of the appropriate instrument.
- **External risk assessments:** Assessments prepared by international organisations and the authorities of other Member States may also shed light on potential cross-border sources of contagion or risks evolving in the Hungarian financial intermediary system.

**Professional and adequately integrated operation is of utmost significance during the process of risk assessment as well.** In order to acquire the best international practices, in addition to direct domestic risks, the MNB monitors risk assessments pertaining to the European and international markets, as well as local market developments and the build-up of risks. Owing to direct communication across policy areas, not only data, but also expert-level assessments and experience may ensure the inclusion of valuable information in the decision-making process.

As a result of monitoring and model-based analyses, the following pre-decision materials provide assistance to the FSB upon making its decisions (see also Chart 4):

- **Report on Financial Stability:** The summary of risk assessments is communicated to the general public and all other stakeholders. If considerable risks have been identified, the Report on Financial Stability may itself outline a number of possible intervention scenarios.
- **Macroprudential pre-decision paper (MaDeP):** The pre-decision policy paper prepared for the FSB is based on the Report on Financial Stability; it discusses alternatives regarding new macroprudential instruments to be adopted if necessary, and offers proposals about the potential adjustment of already applied instruments.

- **Pre-intervention proposition** A detailed proposition presenting the effects of a specific macroprudential policy decision can be drawn up depending on the decision made by the FSB on the basis of risk assessment and, based on this proposition and following the required coordination steps, the FSB resolution can be passed.

Analytical areas inform the FSB on a continuous basis of any risks that may have emerged. The typically biweekly arranged FSB meetings allow for fast FSB decisions based on thorough and frequent risk assessments.

## 5.2. How does the MNB address systemic risks?

### 5.2.1. The framework for the application of regulatory instruments

Based on the information gathered during the risk assessment process, in situations threatening the stability of the system of financial intermediation, the FSB evaluates systemic risks and decides on the measures required to mitigate or eliminate them.

When policy action is taken, timing is of key importance. Comprehensive risk analyses and the broadly and internally available intervention toolkit allow the FSB to act in a preventive and timely fashion when significant systemic risks arise.

Upon making its policy decision based on the results of the risk analysis process, the FSB considers the following factors at all times:

- **Necessity:** Based on previously established inputs, the FSB considers and decides whether the identified systemic risks indeed need intervention. When there is a need for policy action, the extent and form of the intervention is selected in a way that ensures the best possible support to the achievement of macroprudential objectives.
- **Efficiency:** As far as possible, the selected instrument should have low costs and, in particular, entail a minimum level of negative externalities. A necessary condition for this is the adequate targeting of the instrument, as well as its calibration to avoid regulatory arbitrage. The efficiency of specific instruments could be improved by the complementarity of the instruments, which means that some goals can be better achieved by the parallel (complementary) use of multiple instruments.
- **Proportionality:** Instruments should impose obligations on individual institutions in proportion to their contribution to the systemic risks. The application of proportionate measures is an important part of adequate risk management, which is also a condition for the sufficient enhancement of shock resilience and the creation of efficient risk-taking levels.
- **Transparency:** The objective of the instrument, the reasons for its selection and the method of introduction should be explained in a coherent manner and

*The MNB  
selects  
instruments on  
the basis of  
complex  
selection  
criteria*



adequately communicated. In keeping with the objective of transparency and predictability, the MNB pays due consideration to address market expectations appropriately both during the introduction and during the review of policy instruments. The timely provision of information to market participants is a significant part of this process.

#### 5.2.2. The intervention options available to the MNB

As a macroprudential authority, the MNB has the opportunity to enhance the shock resilience of the financial system and to address or prevent the build-up of systemic risks not only by the introduction of actual policy instruments. The options available to MNB can be divided into three groups depending on the direct impact they exert on the financial intermediary system.

- **“Ex ante” measures:** These measures are primarily aimed at the dissemination of information, the notification of the general public, market participants, other policy stakeholders and international organisations regarding the conclusions of the MNB’s analyses on the processes of the financial intermediary system. This includes the risk alerts published in various periodicals, reports, working papers, analyses and, in particular, the Report on Financial Stability, which are intended to highlight the necessity of addressing individual problems. These publications reinforce the transparency of regulatory operations and they support the adequate management of expectations.
- **“Warning” tools:** Still remaining at the level of communication, these instruments call stakeholders’ attention to the emergence of specific risks, the need for addressing the risks, and the necessity and possibility of policy intervention. This category includes notices, resolutions more directly affecting the financial intermediary system, individual warnings sent to market participants, calls for risk management (mainly in the form of management circulars, personal oral consultations and information documents).
- **“Intervention”:** This category comprises policy interventions in the context of which, pursuant to its mandate bestowed upon it by Parliament, the MNB, as a macroprudential authority, crafts rules and regulations binding to market participants in the form of decrees or decisions. This may include developing the specific rules for the mandatory instruments prescribed for all Member States in the European legislative framework or ordering the introduction or the modification of the instruments under national competence. Pursuant to the provisions laid down in its mandate, the MNB may adopt further measures within its own competence with a view to achieving the intermediate policy objectives required for financial stability.



*The MNB has a broad set of instruments at its disposal, applied with a level of activity corresponding to the level of risks*

Some of the instruments available are determined by the legal environment of the European Union described above. With regard to such instruments, it is the task of the MNB as a macroprudential authority to fine-tune the instruments in accordance with domestic systemic risks and market developments: this could involve the tightening or early adoption of rules and regulations, or the definition of the indicators serving as a basis for their adoption. In the case of certain instruments, however, the MNB has broader competence, and it is also responsible for the calibration of the appropriate risk-reducing instrument. As regards excessive credit outflows, systemic liquidity risks and risks jeopardising the financial infrastructure, the MNB is entitled, as a national authority, to issue decrees aimed at the mitigation of risks, irrespective of EU legislation.

**Although the MNB has a strong mandate with respect to the management of systemic risks, its legal competence does not cover the management of all unforeseeable risks.**

With respect to the risks that cannot be managed by the instruments available to the MNB, in accordance with its statutory mandate, the MNB notifies the government on the necessity of risk management. In the context of the procedure set forth in the MNB Act (the so-called “comply-or-explain” process), the MNB makes a proposal to the government regarding the formulation or amendment of legislation. The government is required to inform the governor of the MNB (publicly, if the proposal was also submitted in a public form) of the legislative process commenced in response to the proposal or, in the absence thereof, to justify inaction. The instrument can be applied effectively in the case of the occurrence of new risks threatening financial stability, and by taking advantage of the option of publicity, transparency – which is viewed as a priority by the MNB – is also ensured.

**Table 1: Macroprudential policy instruments available to the MNB**

Macroprudential policy instruments harmonised across the EU	
Instrument	Indicators considered
<i>Containing the risks of excessive credit growth and leverage</i>	
<b>Counter-cyclical capital buffer</b>	<ul style="list-style-type: none"> <li>Indicators: departure of credit-to-GDP ratio from its long-term trend, Cyclical Systemic Risk Map, FSI<sup>17</sup></li> <li>Expert opinion: level of over-heatedness, potential contagion risks, country-specific factors</li> </ul>
<b>Definition of the risk weight of exposures secured by real estate collateral and minimum loss given default (LGD) requirement for exposures vis-à-vis households secured by real estate collateral</b>	<ul style="list-style-type: none"> <li>Indicators: Cyclical Systemic Risk Map, level of utilisation of debt cap limits</li> <li>Expert opinion: level of over-heatedness, region-specific circumstances, relevance of international comparison</li> </ul>

<sup>17</sup> Szendrei, T. – Varga, K. (2017): FISS – A Factor Based Index of Systemic Stress in the Financial System, MNB Working papers No. 9.

<i>Limiting the impact of misaligned incentives and exposure concentrations</i>	
<b>Identification of other systemically important institutions and the applicable additional capital requirement</b>	<ul style="list-style-type: none"> <li>Indicators: scores and limits defined in accordance with the methodology developed by the MNB</li> <li>Expert opinion: necessity and expected effects of the introduction of the capital buffer requirement, time requirement of the preparation for introduction</li> </ul>
<b>Systemic risk buffer</b>	<ul style="list-style-type: none"> <li>Indicators: Macroprudential indicators (details included in the Report on Financial Stability)</li> <li>Expert opinion: exploration of systemic risks unmanageable efficiently with any other tool, measurement of the contribution of individual institutions, definition of proportionate capital buffers</li> </ul>
<i>Addressing excessive maturity mismatches and liquidity risks</i>	
<b>Short-term and long-term liquidity requirements</b>	<ul style="list-style-type: none"> <li>Indicators: Cyclical Systemic Risk Map, LCR and NSFR data</li> <li>Expert opinion: intensity of liquidity risks, degree of vulnerability</li> </ul>
<i>May be applied in order to achieve any intermediate objective</i>	
<b>In case of a change in the intensity of systemic risks, tightening of the following requirements:</b> <ul style="list-style-type: none"> <li>• minimum regulatory capital requirements;</li> <li>• large exposure limits;</li> <li>• capital conservation buffer;</li> <li>• liquidity reserves;</li> <li>• net stable funding requirements;</li> <li>• risk weights for residential and commercial real estate exposures</li> </ul>	<ul style="list-style-type: none"> <li>Indicators: Macroprudential indicators, Cyclical Systemic Risk Map</li> <li>Expert opinion: country-specific factors, changes in the intensity and real economy effects of systemic risks, selection of instruments most suitable for managing the effects</li> </ul>

<b>Instruments applicable under national competence</b>	
<b>Instrument</b>	<b>Indicators considered</b>
<i>Containing the risks of excessive credit growth and leverage</i>	
<b>Debt cap rules</b>	<ul style="list-style-type: none"> <li>Indicators: Cyclical Systemic Risk Map, level of utilisation of debt cap limits, ratio of variable rate and short interest rate period loans to total loans</li> <li>Expert opinion: lending developments, build-up of potential risks</li> <li>Market experience: consultation with market participants and the supervisory area</li> </ul>
<i>Addressing excessive maturity or currency mismatches and liquidity risks</i>	
<b>Regulation of maturity mismatches between assets and liabilities</b>	<ul style="list-style-type: none"> <li>Indicators: Macroprudential indicators, Mortgage Funding Adequacy Ratio (MFAR) requirement, Foreign Exchange Funding Adequacy Ratio (FFAR) requirement, Interbank Funding Ratio (IFR), Loan-to-Deposit (LTD) ratio</li> <li>Expert opinion: maturity mismatch developments in the financial intermediary system, build-up of potential risks</li> <li>Market experience: consultation with market participants and the supervisory area</li> </ul>

<b>Regulation of currency mismatches between assets and liabilities</b>	<ul style="list-style-type: none"> <li>Indicators: Macroprudential indicators, Foreign Exchange Coverage Ratio (FECR) requirement, FFAR requirement, Interbank Funding Ratio (IFR)</li> <li>Expert opinion: on-balance sheet currency mismatch developments in the financial intermediary system, build-up of potential risks</li> <li>Market experience: consultation with market participants and the supervisory area</li> </ul>
<b>Prescription of short-term liquidity coverage requirement for the minimum level of liquidity</b>	<ul style="list-style-type: none"> <li>Indicators: Macroprudential indicators, LCR, stress tests</li> <li>Expert opinion: short-term liquidity developments in the financial intermediary system, level of vulnerability, build-up of potential risks</li> <li>Market experience: consultation with market participants and the supervisory area</li> </ul>
<i>Strengthening the adaptiveness of financial infrastructures</i>	
<b>Management of risks associated with non-banking institutions, Strengthening the resilience of institutions serving the financial infrastructure, Compensation policies</b>	<ul style="list-style-type: none"> <li>Indicators: Cyclical Systemic Risk Map, Payment Systems Report</li> <li>Expert opinion: continuous monitoring of systemic risks arising from the activity of non-banking institutions</li> <li>Market experience: communication with other relevant policy areas</li> <li>If the macroprudential mandate fails to offer adequate options for risk management, the MNB turns to the government with a proposal for legislation</li> </ul>
<i>May be applied in order to achieve any intermediate objective</i>	
<b>Restriction or prohibition of the performance of certain activities for maximum 90 days</b>	<ul style="list-style-type: none"> <li>Indicator: FSI, macroprudential indicators</li> <li>Expert opinion: riskiness of activity, ineffectiveness of other instruments in risk management, inevitable restrictions of the freedom to contract</li> <li>Market experience: ascertaining the existence of a substantial infringement of interests or the reduction of the transparency of the financial intermediary system in the absence of the restriction or prohibition</li> </ul>

### 5.3. Follow-up, evaluation

*The effects of the adopted instruments are closely monitored by the MNB*

**Following the intervention, the FSB monitors the effect of the interventions on a regular basis and may pass decisions on further interventions or the modification or deactivation of existing regulations.** In addition to information deriving from other areas within the MNB (in particular, the monetary policy and money market analytical areas and the microprudential and supervisory areas), the continuous feedback from market participants also plays an important role in view of the fact that the MNB gives priority to facilitating adjustment to regulations and to the smooth implementation of regulations. Moreover, the communication tools discussed below and cooperation with the participants concerned are also important parts of the follow-up process.

**The MNB annually reviews the impact of the macroprudential instruments introduced along with the adaptation process of market participants in its Macroprudential Report.** The Report presents in detail the effects of the macroprudential instruments already in force and the adjustment process of the stakeholders – especially the market participants – involved and their effects estimated by the permanently evolving methodologies.

Moreover, the Report may examine the calibration of specific instruments and the necessity of the possible deactivation or introduction of certain tools.

The Macroprudential Report reviews the conduct of macroprudential policy along three main dimensions:

- It analyses in detail how the adjustment of market participants progresses, and through what channels in what time the adjustment was made in the case of each macroprudential instrument.
- The Report reviews to what extent the use of the instruments helped reach the macroprudential objectives set by the FSB. It examines the transmission mechanism along with the impact on the financial intermediary system and hence the real economy of each intervention estimated by methodologies continuously improved on, by intermediate objectives and by the categories of instruments defined along these objectives.
- In a broader context, the fulfilment of the ultimate goals and the mission of macroprudential policy is also back-tested; the Report therefore overviews both the resilience of the financial intermediary system against shocks and its sustainable contribution to economic growth. The FSB uses the results of the impact analysis not only in a follow-up manner, but also as inputs necessary for future interventions, i.e., as complementary information that accompanies risk analysis.

#### 5.4. Cooperation with relevant authorities

**The MNB places particular emphasis on communication and the efficient coordination of tasks across policy areas.** This endeavour is not only aimed at creating a harmony between the various areas within the MNB, but it also implies cooperation with external professional areas and foreign or international institutions.

*Cooperation  
facilitates  
efficient risk  
management*

- **Cooperation with monetary policy:** Establishing cooperation between macroprudential policy and monetary policy is important for several reasons. On the one hand, the FSB needs to achieve the financial stability objective without prejudice to the price stability objective set by the Monetary Council, within the strategic frameworks determined by the Monetary Council. On the other hand, while the direct management of risks arising in financial intermediation is primarily served by macroprudential policy instruments, monetary policy may also have a bearing on financial stability. However, by default, the scope of monetary policy is far too broad for the achievement of financial stability objectives; moreover, the consideration of financial stability objectives may deviate the contribution of monetary policy to economic growth from its optimal level.<sup>18</sup> Nevertheless, as a

<sup>18</sup> Mishkin (2013)

last line of defence, monetary policy may also be capable of supporting financial stability objectives besides its monetary policy objectives, relying on other monetary policy instruments alongside policy rates in times of crises.<sup>19</sup> Since macroprudential policy has a bearing on lending and other financial conditions that may influence monetary policy transmission, and monetary policy steps, in turn, have an impact on financial stability, the two areas should work in close cooperation with a view to achieving the two separate objectives simultaneously. Among other things, the significant personnel overlap between the FSB and the Monetary Council serves this particular purpose along with the fact that the professional documents generated in relation to the FSB's macroprudential decision meetings are also received by members of the Monetary Council. The Monetary Council may also request the cancellation of the FSB meeting in question in order to put it on its own agenda first. In relevant cases, the propositions discussed by the FSB on the use of macroprudential instruments are also required to include the monetary policy dimension of the proposed measure. This setup ensures the free flow of information between the two areas and efficient coordination between the decisions of the two bodies.

Upon the emergence of certain risks, the FSB also assesses whether the macroprudential toolkit is suitable for addressing the risks identified. If the risks cannot be managed adequately with the macroprudential instruments available, the FSB informs the Monetary Council that the use of monetary policy instruments for macroprudential purposes has become necessary.

- **Cooperation with the microprudential, consumer protection areas:** Cooperation with the microprudential and consumer protection areas in the planning of policy decisions related to the financial intermediary system helps to harness both analytical and decision-making synergies within the institution. In addition, if systemic risks arise that cannot be targeted by the macroprudential toolkit available to the MNB, the application of microprudential instruments with a macroprudential approach could be considered. Although each area serves distinct purposes, the FSB assumes responsibility with respect to the decisions related to individual policy areas, which ensures adequate cooperation, clear responsibilities and a uniform stance and communication toward participants of the financial intermediary system.
- **Cooperation with the resolution area:** The integrated institutional model of the MNB realizes the efficient cooperation of the two areas in the planning of the decisions on resolution measures, during resolution planning and implementation. As the competences of the FSB involve resolution, this provides the coordination of the decision-making at the highest level.

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<sup>19</sup> Svensson (2011)

**The cooperation also makes it possible to reach a favourable consistency in the identification of systemically important institutions and critical functions and in the design of macroprudential policies and resolution strategies applied to them.**

Certain instruments in relation to the MNB's role as the lender of the last resort, such as the emergency liquidity assistance provided for individual institutions, also make the creation of coherency between different policy areas and of the optimal combination in their application necessary. Macroprudential instruments contribute in a preventive manner, while resolution contributes through efficient crisis management to the mitigation of the social costs related to financial crises, in which the potential fiscal costs and the reliance on the funds of the deposit insurance scheme are included.

**The activities of the two areas are mutually supporting each other in achieving efficiency.** Macroprudential measures support the resiliency of the financial system, which increases the probability of successful resolution interventions. Looking at the other direction, resolution contributes to the isolation of the financial system from contagion mechanisms stemming from shocks hitting some of its institutions, which supports the efficiency of macroprudential policies as well. One of the channels of possible synergies could be the Minimum Requirements for own Funds and Eligible Liabilities (MREL) prescribed by the resolution authority beyond solvency capital requirements. As the liabilities which ensure compliance with the MREL are required to have a remaining maturity of at least a year, the regulation could also contribute to the mitigation of banking risks related to liquidity and maturity mismatch.

- **Cooperation with the deposit insurance system:** The National Deposit Insurance Fund of Hungary (NDIF) provides obligatory deposit insurance coverage for every bank deposit in Hungary. The obligatory deposit insurance system has two main goals. First, it protects depositors, as in the event of bank default the deposit insurance scheme provides payment on deposit claims up to a sum of 100 thousand euros per bank. Second, the deposit insurance system protects financial stability as well, as it may prevent bank runs caused by self-fulfilling panics without underlying fundamental reasons among depositors. However, this could have an unfavourable side-effect. Obligatory deposit insurance schemes may excessively amplify bank risk-taking, as banks have less reason to fear from depositors putting disciplinary market pressure on the bank's management to rein in excessive risk-taking by exiting in masses.

In order to minimize this unintended side-effect of the deposit insurance system, the individual sums of the obligatory and regular contributions paid by banks to the deposit insurance fund should be calibrated in proportion to banks' individual risk levels and their institution-specific contribution to systemic risk. The Governor of the MNB establishes the detailed rules for the determination of the sums paid

as the individual contributions in a decree. Furthermore, the MNB delegates multiple members to the Board of Directors managing the NDIF. Hence the MNB is able to affect decisions made there, as well as their planning and implementation. This institutional design facilitates that financial stability considerations are taken into account in the management of the deposit insurance scheme, and also assists the NDIF in carrying out its functions.

- **Cooperation with the government:** Operations independent of the government ensure independent risk assessment and intervention; however, cooperation with governmental areas is an important pre-requisite of efficient macroprudential policy in view of the fact that numerous regulatory and crisis prevention instruments fall within the competence of the government. For this reason, the representative of the minister responsible for the regulation of the money, capital and insurance markets and at times external attendees invited by the governor of the MNB are entitled to participate in the meetings of the FSB with the right of discussion when items affecting macroprudential policy are on the agenda. Moreover, in order to facilitate the free flow of information, the MNB provides information to the government and the members of the government on an *ad hoc* basis on issues related to financial stability.

The abovementioned proposal for legislation submitted by the MNB to the government as appropriate represents an important element of the cooperation with the government.

- **Cooperation with international organisations and national authorities of other countries:** The MNB works in close cooperation with European institutions at several levels. A significant element of this cooperation is the communication sent to the European Commission, the ECB, the ESRB and the EBA on the introduction of policy instruments. Another important role of European organisations is the preparation of reports monitored by the MNB, the issue of recommendations relevant to the MNB, and the crafting of specific technical rules attached to European legislation.

An essential part of the cooperation with other national authorities is the abovementioned principle of reciprocity and the notification of national authorities on the cases where institutions under their jurisdiction become subject to Hungarian regulations.

### 5.5. Assessment and management of cross-border spillover effects

**Macroprudential measures may entail major cross-border effects, and thus it is important to develop methods that are suitable for the measurement and assessment of those.** The financial system of EU is becoming increasingly integrated, with the cross-border banking groups and cross-border activities gaining increasing importance. At the same time, despite the shared EU regulatory framework of the macroprudential



instruments, there are major differences in the individual regulations of the member states. On the whole, in the long run, the financial stability of a member state, achieved by macroprudential tools, has a positive effect on the financial stability of the entire EU. However, macroprudential policy of the individual member states may as well have unintended effects on other member states. With a view to ensuring the efficiency and competitive neutrality of the measures, it is important to adequately assess their effects on the internal markets of the European Union and on the economies of other member states. When necessary, the reciprocity decisions, ensuring the efficiency and consistency of the member states' measures, may be based on these impact analyses.

**In the European Union, the recommendation of the ESRB harmonised the framework of cross-border impact analysis of macroprudential measures and the voluntary reciprocity scheme.** Recommendation 2015/2 of the ESRB created, in two main pillars (Chart 5), the EU framework for the assessment of the cross-border effects of macroprudential policy measures and voluntary reciprocity related to such measures.

**The MNB, in line with the ESRB recommendation, developed analytical methodology and procedure for the assessment of the cross-border effects of macroprudential measures.** Pursuant to this, the MNB performs *ex ante* assessment of its contemplated and already introduced macroprudential instruments in terms of the anticipated effects, as well as regular *ex post* assessment of the realised effects.

**The reciprocity framework facilitates that the regulations of the member states cover all institutions that render services in the respective member state.** Based on the laws and the ESRB recommendation, the (host) authority of a member state, introducing a macroprudential instrument, may request the (home) supervisory authorities overseeing the branch offices operating in its territory and the foreign institutions pursuing direct cross-border activities to provide reciprocity. In this way, the host authority initiates the request that the home authorities should prescribe compliance with the macroprudential rules of the host authority or with requirements of equivalent effect, in respect of the activities pursued in the host member state by the institutions falling within their jurisdiction.



**Chart 5: Status of individual member states' tasks related to the two pillars of ESRB Recommendation 2015/2 and of macroprudential instruments in terms of the reciprocity legislation**

Pillar I Assessment of cross-border effects	Pillar II Framework of voluntary reciprocity	Reciprocity status of other macroprudential instruments
<ul style="list-style-type: none"> <li>Before adopting macroprudential measures their expected cross-border impact should be assessed (<i>ex ante</i>)</li> <li>At least once a year the potential and realized impact of macroprudential measures should be assessed (<i>ex post</i>)</li> </ul>	<ul style="list-style-type: none"> <li>The prescription of measures requested to be reciprocated by host authorities is recommended for direct and indirect exposures</li> <li>In case of non-material exposures the home authorities may refrain from providing reciprocity (<i>de minimis principle</i>)</li> </ul>	<b>Reciprocity prescribed by the law</b> <ul style="list-style-type: none"> <li>Anticyclical Capital Buffer</li> <li>Risk Weights under CRR Art. 124</li> <li>LGD Minimum under CRR Art. 164</li> </ul>
	<b>Instruments under voluntary reciprocity</b> <ul style="list-style-type: none"> <li>Systemic Risk Buffer (SyRB)</li> <li>Managing Member State specific systemic risks (CRR 458. cikk)</li> </ul>	<b>Geographic scope realizes reciprocity</b> <ul style="list-style-type: none"> <li>Debt cap rules (LTV, PTI)</li> </ul>
		<b>Reciprocity has not been applied so far</b> <ul style="list-style-type: none"> <li>Capital Buffer of Systemically Important Institutions</li> <li>Pillar II measures</li> </ul>

**In the case of certain measures, the provision of reciprocity up to the degree prescribed by the law may be enforced by the affected home authorities, while in the case of other instruments it is only recommended.** In a certain range of macroprudential instruments, the application of the recommendation's reciprocity framework is practically unnecessary, as the rules apply to all domestic financial transactions, and in the case of institution-specific instruments, the interpretation of reciprocity is questionable already in theoretical terms, as well. In the case of the systemic risk capital buffer and the instruments falling within the scope of Article 458 of CRR, the home authorities may refrain from providing reciprocity subject to proper justification or in the absence of institutions providing material financial services directed to the applicant country. The materiality of the exposure may be guided by the *de minimis* limit determined by the authority making the request.

**With a view to reducing the excessive complexity and overreach of the regulation, the MNB declares no automatic reciprocity for the respective foreign exposures.** In the case of domestic institutions operating with foreign exposure exceeding the *de minimis* limit, the FSB makes ad hoc decisions whether, at the request of another member state, it expects all stakeholders to comply with reciprocity.

**The present structure of the Hungarian financial system makes it less likely that the efficiency of the MNB's regulations could depend on the decisions reached by other authorities related to the provision of reciprocity.** For the time being, the foreign branches perform no such systemically important activity in the Hungarian banking sector, the systemic risk of which would justify for the MNB to request the home authorities that they should comply with the respective macroprudential instruments within the framework of voluntary reciprocity. At present, this is also not necessitated by the provisions of direct cross-border financial services by foreign banks.

## 5.6. Macroprudential policy beyond the banking sector in Hungary

### 5.6.1. Macroprudential framework related to non-bank financial organisations

**Until now, the MNB's macroprudential policy has primarily focused on the banking sector.** The financial intermediation by the banking sector, primarily the volume of the loans granted by the banks, as well as the assets managed by them and the deposit products used for the financing of the first, together with the turnover of the related payment and transaction services, often create much more extensive and tighter financial interconnectedness than that of other financial sectors, also pursuing important financial activity. The continuous and efficient functioning of these activities, and the performance of those without excessive risk-taking, are critical for the maintenance of financial stability and the performance of the national economy.

**Managing potential systemic risks of the non-bank financial sectors may call for the supplementation of the intermediate objectives.** International assessment of the macroprudential approach identified several important potential systemic risks in the case of non-bank financial institutions. At present, the system of intermediate objectives has been elaborated Europe-wide in respect of the systemic risks of the banking sector and the institutions of the financial infrastructure. Along with the possible amplification of potential systemic risks of the non-bank financial institutions in Hungary and with the international development of the macroprudential regulatory framework in the future, it may be worth supplementing the intermediate objectives to cover non-bank financial systemic risks in full.

**The MNB, in its capacity as a macroprudential authority, assesses the risks arising in the non-bank financial sectors relying on a systemic approach as well, which may be supplemented in the future with the enhancement of the monitoring and regulatory instruments.** Although to date the systemic risk contribution of the non-bank financial sectors has not required macroprudential intervention in the Hungarian financial system, similarly to the banking sector systemic risks may also change dynamically in the future. This may justify the forward-looking enhancement of the monitoring and regulatory instruments for macroprudential purposes. At present, owing to its integrated organisational structure, upon applying the supervisory and microprudential instruments, the MNB is able to assess whether macroprudential considerations may be enforced along with the microprudential objectives. The assessment of systemic risks and the application of available instruments for financial stability purposes are supported by the continuous exchange of information between the MNB's macroprudential and other areas, and the comprehensive structure of the Financial Stability Council, which covers all areas. In the future, the establishment – both at international and national level – and the expansion of the set of dedicated macroprudential instruments related to non-bank financial organisations, may materially support the efficiency and effectiveness of the processes.

### 5.6.2. Macroprudential framework related to the financial infrastructure

**Within the scope of its oversight activity and in its capacity as the owner of a substantial part of the Hungarian financial infrastructure, the MNB strengthens its stability.** The scope of oversight covers VIBER (the real-time gross settlement system) operated by the MNB, the Interbank Clearing System (ICS) operated by Giro Zrt. and the securities clearing and settlement systems, including the central counterparty activity, operated by KELER Group. Oversight of the financial infrastructure is a statutory core duty of the MNB, performed by the MNB based on its risk-based oversight framework, developed in line with the international recommendations and laws, and reformed in 2014.

**It is a declared objective of the MNB, in its capacity as macroprudential authority, to strengthen the stability and adaptability of the financial infrastructure.** To this end, the MNB's macroprudential area coordinates its activity with the MNB's oversight area, and in relation to the issues arising at domestic and international forums it communicates its observations of macroprudential nature.

## 6. COMMUNICATION OF THE MNB'S MACROPRUDENTIAL POLICY

**In each phase of the regulatory cycle of macroprudential policy, the MNB gives special priority to the communication of risks and their management.** On the one hand, aptly applied communication is an intervention option in itself, capable of motivating the operation of participants and addressing market expectations. On the other hand, efficient communication is a key element of transparent operations required for long-term success, along with integrating the feedback of external stakeholders.

*Communication is of key importance in each phase*

The role of communication may manifest itself in different ways in different regulatory phases:

- **Risk analysis phase:** In this phase, the main purpose of communication is to shape expectations. The MNB informs stakeholders (including market participants and the general public) of the nature of systemic risks and the possible options to address them in the form of numerous reports (most importantly, the Report on Financial Stability), studies and policy articles. In many cases, communication itself is an effective tool in facilitating risk management, as it enables market participants to take steps independently before the expected policy intervention. Communication is not necessarily one-sided: consultations with market participants and the (qualitative) information received from them could contribute significantly to the recognition of risks and the selection of the best method for risk management.
- **Regulatory intervention phase:** In this phase, besides informative methods, direct communication between the stakeholders plays a prominent role, as the *ex ante*

feedback of market participants considerably improves the efficiency of regulation. Transparency is also improved further in this phase by public communication justifying the need for the introduction of the policy instrument and presenting the consultation process with domestic and international organisations. The MNB places great emphasis on making this information publicly available in a timely manner.

- **Follow-up and assessment phase:** The main role of communication in this phase is to further facilitate adjustment to the regulation and to ensure transparency. The MNB facilitates the technical implementation of the adjustment by way of oral consultations, circulars and recommendations and, also taking market feedback into consideration, it adjusts the details of regulation as appropriate. The results and conclusions of the follow-up phase are summarised for all stakeholders in the yearly Macroprudential Report.

**It should be noted that besides all other stakeholders, as a macroprudential authority, the MNB also communicates with the government through both public and non-public channels.** A part of this process consists of communication forms also accessible to the general public, including the Report on Financial Stability, other interim risk assessment and operative reports, as well as the option of proposals for intervention. Moreover, the governor of the MNB participates, on a mandatory basis, in government sessions discussing topics on financial stability, while the deputy governor concerned attends the meetings of the secretary of state for public administration, which provides an opportunity for non-public communication when justified by the nature of systemic risks.

**Table 2: The communication tools applied by the MNB**

Phase	Communication tools		
	Communication across regulatory areas	Communication with external stakeholders	
		Public	Non-public
<b>Risk assessment</b>	<ul style="list-style-type: none"> <li>• Data and information exchange with other areas</li> <li>• Submission of FSB agenda items to the Monetary Council</li> <li>• Public communication forms accessible to other external stakeholders</li> <li>• Non-public statements submitted to the government</li> </ul>	<ul style="list-style-type: none"> <li>• Report on Financial Stability, MNB reports</li> <li>• Studies, analyses, professional articles</li> <li>• Resolutions alerting to risks</li> </ul>	<ul style="list-style-type: none"> <li>• MaDeP</li> <li>• Consultation with market participants, information gathering, enhancing market intelligence</li> </ul>
<b>Intervention</b>	<ul style="list-style-type: none"> <li>• Proposal for intervention submitted to the government</li> <li>• Consultation with international organisations</li> <li>• Consultation with other policy areas regarding the formulation of the intervention method and the expected effects</li> <li>• Submission of FSB agenda items to the Monetary Council</li> </ul>	<ul style="list-style-type: none"> <li>• Report on Financial Stability, MNB reports</li> <li>• Summary of the publicly accessible details of certain decisions of the FSB according to the FSB's decision</li> <li>• Description of the methodology and operation of the adopted instruments</li> </ul>	Consultation with and dissemination of information to market participants: developing independent risk management of market participants, precise information on the process of the intervention
<b>Evaluation and follow-up</b>	<ul style="list-style-type: none"> <li>• Collection of direct information and data from other professional areas</li> <li>• Report submitted to the General Assembly on the activity of the MNB</li> <li>• Submission of FSB agenda items to the Monetary Council and informing the MC of decisions</li> <li>• Macroprudential Report</li> </ul>	<ul style="list-style-type: none"> <li>• Management information circular</li> <li>• Recommendation regarding legal interpretation</li> <li>• Information in relation to statutory obligation</li> <li>• Methodological manual</li> <li>• Standard regulation</li> <li>• Technical clarifications and resolutions in "Questions and answers" format</li> <li>• Report on Financial Stability, Macroprudential Report, working papers, analyses, policy articles</li> </ul>	<ul style="list-style-type: none"> <li>• Consultation with market participants, feedback</li> <li>• Proposals for modification, technical clarifications</li> </ul>

In each phase, communication forms can be classified on the basis of two dimensions:

- **Timing:** With respect to timing, we distinguish between regular communication forms and *ad hoc* communication forms applied at undetermined times. Regular forms typically include reports and periodical analyses and play a prominent role in

ensuring the uninterrupted flow of information, in the shaping of expectations, and in demonstrating the MNB's commitment to risk management. However, communication forms other than periodical communication need to be applied as well, especially in the intervention phase, with a view to facilitating adequate adjustment and transparent regulation crafting.

- **Publicity:** Although transparency is a significant objective the MNB's communication strategy, not all communication elements can be applied publicly. It is important to ensure broad publicity for the presentation of the identified risks and for the evaluation of the result of regulatory activity; therefore, the publicity of the Report on Financial Stability and other risk detection materials play an important role in transparency. However, information relevant to certain institutions often require confidentiality and accordingly, pre-decision propositions, the MaDeP and other analyses and assessments affecting individual institutions can only be prepared non-publicly. In addition to the protection of banking secrets, the technical or material nature of the communication subject is another important criterion in restricting publicity.

## 7. THE EXTERNAL CONTROL ACCOMPANYING THE STRONG MANDATE OF THE MNB

**Independence and a clear statutory mandate can only ensure the long-term success of macroprudential policy if it is matched with a proportionate option of external feedback.** The formal external control over macroprudential policy implies, on the one hand, the external control over the MNB as a whole as defined in the MNB Act, and, on the other hand, the controls included in the EU regulations aimed at the coordination of macroprudential policies across the EU. The informal external control over macroprudential policy is ensured by the fact that macroprudential policy if it fulfils the expectations of society can strengthen the professional reputation of the MNB with transparent operations.

**Pursuant to the MNB Act, the MNB's obligation towards the Government is primarily to inform, and towards the Parliament it is to give an account of the MNB's conduct.** The MNB shall provide information to the Government and the members of the Government on an *ad hoc* basis on issues related to its basic tasks.<sup>20</sup> The governor of the MNB shall report and provide information to Parliament.<sup>21</sup> The governor of the MNB shall semi-annually report in writing to the Parliament's standing committee for economic affairs on the MNB's activity, including the shaping of macroprudential policy. At the request of the committee, the governor of the MNB shall be obliged to attend in person and supplement

*Formal external control is ensured by the provisions of the MNB Act ...*

<sup>20</sup> MNB Act, Article 135 (3)

<sup>21</sup> Fundamental Law, Article 41; MNB Act, Article 131 (1)

the report orally.<sup>22</sup> At the request of the Speaker of the Parliament or the chairman of the Parliament's standing committee for economic affairs, the governor of the MNB may also be subject to an extraordinary reporting obligation.<sup>23</sup> Upon request, the governor of the MNB shall also provide information to the committees of the Parliament,<sup>24</sup> and answer the questions within the competence of the MNB asked by members of Parliament.<sup>25</sup>

*... and by  
public  
cooperation  
with EU  
organisations*

**The organisations of the European Union, in particular, the European Commission, the ESRB and the ECB, can exercise additional informal control over macroprudential policy.**

The European Commission mainly enforces the legal principles defined at the European level; however, it also has direct authorisation powers over certain macroprudential measures. In its recommendations, the ESRB provides methodological guidance to national macroprudential authorities, including the MNB, holds consultations on these subjects with national authorities and finally, it publishes the methodological details developed by the national authorities. In addition, it may issue warnings and proposals for specific intervention in the form of non-binding recommendations ("comply-or-explain"). The ECB also issues recommendations to the national macroprudential authorities and expects the national authorities to hold mandatory, public consultations regarding the introduction of macroprudential instruments on a statutory basis.

*Informal  
external  
control is  
ensured by  
transparent  
operations*

**As a macroprudential authority, the MNB attaches key importance to transparent operations over and beyond of its statutory obligations.** Among the public documents summarising the results of the decision supporting work described above, the most important regular publications intended for the professional public are the semi-annually published Report on Financial Stability and the Macroprudential Report, which is expected to be published annually in the near future. Studies and policy articles describing the details of macroprudential instruments may also represent writings of key importance for the professional public. In addition, as described above, several publicly available studies, reports and recommendations provide assistance to the professional or broader public to gain the necessary insight into the stance and activity of the MNB with respect to systemic financial risks. Apart from the materials intended for the general public, the oral provision of information to market participants and consultation opportunities are also given an important role.

**It should be noted that transparency, although it is an efficient tool for the control of macroprudential policy, is subject to certain limitations.** Even though the MNB is committed to transparent and accountable operations, the transparency of decision

<sup>22</sup> MNB Act, Article 131 (2)

<sup>23</sup> MNB Act, Article 131 (3)

<sup>24</sup> MNB Act, Article 131 (4)

<sup>25</sup> Fundamental Law, Article 7 (1)

supporting processes and policy actions is bound to be restricted if it would otherwise jeopardise the implementation of financial stability objectives.

**The MNB is convinced of its ability to ensure that its strong macroprudential mandate serves the best interest of society at large.** It is prepared to disseminate as many details about macroprudential policy as possible to the broadest possible audience. Finally, it is confident that the observed practice of macroprudential policy will meet general social approval.



## 8. REFERENCES

- ACHARYA, V. V. ÉS M. RICHARDSON (2009): *Restoring Financial Stability*, John Wiley & Sons.
- BOLTON, P. ÉS M. DEWATRIPONT (2005): *Contract Theory*, The MIT Press.
- DEWATRIPONT, M., J.-CH. ROCHET ÉS J. TIROLE (2010): *Balancing the Banks: Global Lessons from the Financial Crisis*, Princeton University Press.
- ESRB (2014): *The ESRB Handbook on Operationalising Macro-prudential Policy in the Banking Sector*.
- FREIXAS, X., L. LAEVEN ÉS J.-L. PEYDRÓ (2015): *Systemic Risk, Crises, and Macroprudential Regulation*. The MIT Press.
- FREIXAS, X. ÉS J.-CH. ROCHET (2008): *Microeconomics of Banking*, Second Edition. The MIT Press.
- GORTON, G. B. (2010): *Slapped by the Invisible Hand: The Panic of 2007*, Oxford University Press.
- HIRSHLEIFER, D. ÉS S. HONG TEOH (2003): *Herd Behaviour and Cascading in Capital Markets: a Review and Synthesis*, *European Financial Management*, Vol. 9, No. 1, pp. 25–66.
- IMF (2011): *Towards Effective Macroprudential Policy Frameworks – An Assessment of Stylized Institutional Models*. Working Paper 11/250.
- IMF (2013a): *Key Aspects of Macroprudential Policy*, IMF Policy Paper.
- IMF (2013b): *The Interaction of Monetary and Macroprudential Policies*, IMF Policy Paper.
- LAEVEN, L. ÉS F. VALENCIA (2013): *Systemic Banking Crises Database*, *IMF Economic Review*, Vol. 61, Issue 2, pp. 225–270.
- LAFFONT, J.-J. ÉS D. MARTIMORT (2002): *The Theory of Incentives: The Principal-Agent Model*, Princeton University Press.
- MISHKIN, F. S. (2013): *Macroprudential and Monetary Policies*. In D. D. EVANOFF, C. HOLTHAUSEN, G. G. KAUFMAN ÉS M. KREMER, *The Role of Central Banks in Financial Stability: How Has It Changed?*
- NIER, E. W., J. OSIŃSKI, L. I. JÁCOME ÉS P. MADRID (2011): *Institutional Models for Macroprudential Policy*, IMF Staff Discussion Notes, No. 11/18.
- OSIŃSKI, J., K. SEAL ÉS L. HOOGRUIN (2013): *Macroprudential and Microprudential Policies: Toward Cohabitation*, IMF Staff Discussion Notes, No. 13/5.

- RAJAN, G. R. (2010): Fault Lines: How Hidden Fractures Still Threaten the World Economy, Princeton University Press.
- REINHART, C. M. ÉS K. S. ROGOFF (2009): This Time is Different: Eight Centuries of Financial Folly, Princeton University Press.
- ROCHET, J.-CH. (2007): Why Are There So Many Banking Crises? The Politics and Policy of Bank Regulation. Princeton University Press.
- SALANIÉ, B. (2005): The Economics of Contracts: A Primer, Second Edition, The MIT Press.
- SVENSSON, L. E. (2011). Monetary Policy after the Crisis. Asia's role in the post-crisis global economy.
- SZENDREI, T. ÉS K. VARGA (2017): FISS – A Factor Based Index of Systemic Stress in the Financial System, MNB Working papers No. 9.
- WORLD BANK (2014): Macroprudential Policy Framework: A Practice Guide, A World Bank study.

## 9. ANNEX: PRESENTATION OF HUNGARIAN MACROPRUDENTIAL INSTRUMENTS

INSTRUMENTS APPLICABLE / TO BE APPLIED PURSUANT TO EU LEGISLATION	
Instrument	Description of instrument
<i>Contain the risks of excessive credit growth and leverage</i>	
Countercyclical capital buffer	<p><b><u>Definition:</u></b> Additional capital requirement set by the regulatory authority based on the degree of excessive credit growth, to be released in times of financial stress.</p> <p><b><u>Impact mechanism:</u></b> It is intended to achieve three goals. Firstly, the additional capital can be used to protect the banking system against losses. This increases the resilience of the banking sector and allows for a “soft landing” in the event of crisis, preventing its escalation. Secondly, its purpose is to mitigate the fluctuations of the financial cycle. The additional capital requirement increases the cost of credit by increasing the ratio of capital – a more expensive source of funding – among banks’ liabilities. This may restrain credit supply and may ultimately lead to a decline in lending activity, a desirable outcome during periods of excessive credit growth. Similarly, in case of a credit crunch during periods of financial stress, a release of the buffer will have the opposite effect and stimulate lending activity. The third goal is to reduce the fluctuations of the business cycle. Indeed, the credit cycle exerts an impact on the business cycle: higher costs of credit restrain growth, while lower lending rates can stimulate growth. The capital buffer has an indirect effect on the business cycle, but its impact mechanism can be offset by other factors of the economy.</p> <p><b><u>Application and experience:</u></b> Based on international experience, capital requirements can restrain lending activity only to a certain extent in periods of excessive credit expansion. At the same time, in view of the losses sustained by banks during financial crises, the maximum applicable capital buffer requirement provided in the ESRB recommendation can improve banks resilience to shocks significantly. The rate is reviewed quarterly.</p> <p>The MNB has been operating the countercyclical capital buffer framework from 1 January 2016. During the quarterly reviews, the capital requirement has not been set yet.</p>

<p><b>Define risk weights for exposures secured by real estate collateral and set minimum loss given default (LGD) requirement for exposures to households secured by real estate collateral</b></p>	<p><u><b>Definition:</b></u> Setting risk weights to address asset price bubbles in the real estate sector and defining minimum average loss given default (LGD) values for exposures to households secured by real estate collateral.</p> <p><u><b>Impact mechanism:</b></u> Policy instruments applicable to real estate exposures essentially lead to increased sectoral capital requirements, primarily affecting the shock-absorbing capacity of financial institutions. In addition, due to their sector-targeted focus, they may serve as an efficient tool in the prevention of excessive credit outflows and asset price bubbles. Capital requirements can be reduced by lowering the proportion of real estate exposures, or offset by higher interest rate spreads. In both cases, depending on the intensity of the growth in credit outflows, it may exert a downward effect on credit outflows. During crisis periods the requirements can be eased and this released capital may facilitate the maintenance of lending activity. In summary, this instrument essentially offers a solution for managing cyclical risks; however, it is less suitable for addressing the structural dimension of real estate exposures due to the simultaneous targeting of such exposures.</p> <p><u><b>Application and experience:</b></u> International experience regarding the capital requirements applicable to real estate exposures suggests that increased requirements can effectively influence credit outflow developments. The instrument may be applied, pending on developments in real estate-related exposures, upon the decision of the FSB.</p>
<p><i>Mitigate the impact of misaligned incentives and limit exposure concentrations</i></p>	
<p><b>Identify other systemically important institutions and the applicable additional capital requirement</b></p>	<p><u><b>Definition:</b></u> The macroprudential authority identifies and annually reviews the list of globally and systemically important credit institutions and investment firms based in Hungary, and if necessary, imposes an additional capital buffer requirement on these institutions while continuously monitoring their operation.</p> <p><u><b>Impact mechanism:</b></u> Improving the loss-absorption capacity of systemically important institutions is a preventive macroprudential tool intended to limit the severe contagion effects stemming from the insolvency or stress situation of systemically important institutions. The purpose of the buffers is to lower the probability of negative external financial and real economy effects generated by the stress situation of important institutions (as well as the costs to be incurred by the general government during the prevention of such</p>

	<p>effects). The requirement may curtail the sub-optimal motivation of managers and owners of capital arising from the moral hazard problem, as a bigger “skin in the game” may prompt stakeholders to reduce the extent of their risk-taking. On the negative side, by increasing the cost of funds, the capital surcharge may render banking operations more expensive. It could give rise to a special moral hazard as imposing the surcharge may reconfirm the institution's priority status both for the relevant institution and its creditors, increasing their expectations about a funding subsidy in the event of a default. This risk, however, is considerably reduced by the uniform resolution framework (BRRD) harmonised at the EU level (e.g.: through bail-in).</p> <p><u>Application and experience:</u> Systemically important institutions have been identified first in 2016 in most European countries. Different phasing-in periods were set taking into account the adaptation needs of banks to fulfil the total capital requirement.</p> <p>In Hungary, the identification of institutions and setting of their capital buffer rates takes place annually since 2016. Based on the FSB’s decision, the capital requirement is prescribed from 1 January 2017 in a gradually increasing manner over a four-year period.</p>
<p><b>Systemic risk buffer</b></p>	<p><u>Definition:</u> In case of the build-up of non-cyclical systemic risks, a systemic risk buffer may be prescribed for the financial system as a whole or for its specific subsets.</p> <p><u>Impact mechanism:</u> The macroprudential authority ascertains the necessity of the buffer’s introduction and defines its rate for each institution, in proportion to their respective contribution to the systemic risk. The systemic risk buffer is an efficient tool in the targeted management of structural macroprudential risks. The introduction of the instrument can manage high concentrations of risk associated with specific sectors or exposures, as the instrument offers national authorities a relatively high degree of calibration freedom. Similar to the other capital buffers, the introduction of the buffer increases the loss-absorption capacity of institutions through the additional capital or through the reduction of risk-weighted exposure values. The extent to which the instrument is targeted depends on its calibration hence it is also important to address the issue of potential regulatory arbitrage.</p>

	<p><b><u>Application and experience:</u></b> In Europe, most countries have applied two methods of prescribing the systemic risk buffer so far: the requirement was either imposed generally on all exposures and institutions, or it was introduced as a supplementary or substitutional requirement to the buffer prescribed for systemically important institutions. These measures' impact mechanism is similar to that of the rest of the capital requirements: as in their case, the capital surcharge was not imposed on specific exposures. Essentially, the instrument can be used to address those specific exposures, which cannot be tackled through any other regulatory instrument.</p> <p>Based on the FSB's decision, the systemic risk buffer was introduced to manage risks stemming from the portfolio of non-performing project loans. These risks cannot be targeted by other instruments effectively. Institutions affected should accumulate and maintain the capital buffer as of 1 January 2017.</p>
<i>Mitigate excessive maturity mismatch and liquidity risks</i>	
<b>Short-term liquidity requirements</b>	<p><b><u>Definition:</u></b> The liquidity coverage requirements necessitate banks to ensure that a sufficient quantity and quality of liquid assets are available in the event of a short-term (30-day) liquidity shock.</p> <p><b><u>Impact mechanism:</u></b> The introduction of liquidity coverage requirements may increase the resilience of financial institutions, as a higher liquidity buffer allows them to withstand higher liquidity shocks. In the event of a crises, a lack of sufficient liquid assets may drive institutions to fire sales in order to maintain sufficient liquidity, which may induce a downward spiral in the given asset market.</p> <p>Compliance with the liquidity coverage requirement can be ensured by raising the stock of high-liquidity assets and by borrowing longer-term funds. On the whole, these steps may reduce the profitability of the financial sector, as the holding of liquid assets and the use of long-term funds are associated with relatively higher costs. Therefore, to avoid a significant deterioration of lending activity, the adequate timing of the instrument's introduction is essential.</p> <p><b><u>Application and experience:</u></b> Short term liquidity requirements are implemented in the EU, as of 1 January 2018 all EU countries has fully introduced them. In parallel, previous measures introduced under national competence were phased out.</p>

	In Hungary the instrument was activated on 1 October 2015; however, tightened requirements entered into force already in April 2016 to ensure the adequate management of risks.
<i>It may be applied for the purposes of any intermediate objective</i>	
<b>In case of a change in the intensity of systemic risks, tightening of the following requirements:</b> <ul style="list-style-type: none"> <li>• minimum capital requirement</li> <li>• large exposures</li> <li>• capital conservation buffer</li> <li>• liquidity reserves</li> <li>• net stable funding requirements</li> <li>• risk weights for residential and commercial real estate</li> </ul>	National authorities can impose tighter requirements than those set by EU legislation if the relevant systemic risks cannot be managed by any other instruments.

Instruments applicable under national competence	
Instrument	Description of instrument
<i>Containing the risks of excessive credit growth and leverage</i>	
<b>Debt cap rules:</b> <i>Loan-to-value ratio and payment-to-income ratio</i>	<p><u>Definition:</u> Limits are set on the value of the loan available to borrowers in proportion to the underlying collateral and on the debt service costs in proportion to households' disposable income.</p> <p><u>Transmission mechanism:</u> The transmission mechanism of the regulation is twofold. On the one hand, properly calibrated limits can restrain excessive credit outflows and hence, reduce the probability and magnitude of the build-up of cyclical risks. Consequently, they can effectively supplement the countercyclical capital buffer, since capital buffers exert their effects on the supply side, while the effects of the debt cap rules will be perceived on the demand side in the credit market. In addition, the instrument also mitigates the risk of default directly by countering the occurrence of excessive indebtedness.</p> <p>As its effects manifest themselves at the level of individual loan contracts, the instrument is a reliable vehicle of the regulatory intent. However, due to a lack of preliminary, contract-level data, it is more difficult to assess the direct effects of the instrument; therefore,</p>

	<p>international experience should be the primary benchmark for its calibration.</p> <p><u>Application and experience:</u> The application of the instrument has been considered in an increasing number of EU Member States. According to international experience, the regulation is an efficient way of curtailing excessive credit outflows. Based on Hungarian evidence, setting statutory limits and defining detailed rules regarding the proof of income are important elements of the regulation.</p> <p>National regulations have been effective as of 1 January 2015. Considering the market experiences in connection with the application, the MNB has modified the regulation with effect from 1 May 2016. In order to hinder the increase of household mortgage credit stock with floating interest rates, the MNB applies from 1 October 2018 differentiated limits based on the length of the interest rate fixation period to take into account interest rate risk.</p>
<i>Mitigating excessive maturity mismatch and liquidity risks</i>	
<p><b>Regulating the maturity mismatches between assets and liabilities:</b> <i>Mortgage Funding Adequacy Ratio</i></p>	<p><u>Definition:</u> Setting a minimum required level of mortgage-backed securities relative to the amount of household mortgage loans.</p> <p><u>Impact mechanism:</u> Thanks to their favourable risk rating, mortgage bonds and other bank securities backed by mortgage loans are considered to be stable, long-term liabilities with relatively low cost of funds. This allows banks to reduce their on-balance sheet maturity mismatches at relatively low costs. Owing to the increasing popularity of loans with longer interest periods, reliance on long-term securities for funding also lowers the interest rate risk.</p> <p>The instrument is fairly simple and targeted, which reduces the probability of regulatory arbitrage.</p> <p><u>Application and experience:</u> International examples indicate that mortgage financing through mortgage-backed securities is an effective tool to reduce maturity mismatches in the banking sector. Hungarian experience underpins the importance of calibrating the instrument with a view to minimising the possibility of regulatory arbitrage, and establishing a legal environment that facilitates the refinancing of bank groups without a mortgage credit institution.</p> <p>The requirement announced in 2015 is to be fulfilled as of 1 April 2017. In order to further strengthen financing through the mortgage bond market, the regulation has been in force since 1 October 2018 in a modified version with stricter requirements.</p>



<p><b>Regulation of currency mismatches between assets and liabilities:</b>  <i>Foreign Exchange Funding Adequacy Ratio and Foreign Exchange Coverage ratio</i></p>	<p><b>Foreign Exchange Funding Adequacy Ratio</b></p> <p><u>Definition:</u> The instrument expects institutions to hold a sufficient amount of stable foreign currency funds in proportion to their foreign currency assets that require stable financing.</p> <p><u>Impact mechanism:</u> The impact mechanism of the regulation is twofold. On the one hand, the instrument requires the use of stable foreign currency funds to finance foreign currency assets requiring stable financing. This reduces the risks stemming from on-balance sheet currency mismatches. In addition, with respect to foreign currency liabilities, it orients banks towards the use of funds embodying long-term financing, thereby reducing the maturity mismatches on the balance sheets of banks as well.</p> <p>Supplemented by other instruments, such as the Foreign Exchange Coverage ratio, the instrument can also mitigate the external vulnerability of the banking sector. On the downside, due to its relatively complex structure, it leaves room for several adjustment channels, which may impair the achievement of policy objectives. This risk, however, can be managed by the continuous monitoring of market developments and the adjustment process on the one hand, and by communication with market participants on the other.</p> <p><u>Application and experience:</u> Although the instrument is comparable to the Net Stable Funding Ratio proposed in the Basel III recommendation, international experience will not be available until the implementation of the indicator across the European Union. As regards domestic experience, if adequately calibrated, the instrument can efficiently achieve the reduction of currency and maturity mismatches. It is particularly important to ensure that the structure and expected level of the indicator are adjusted to market developments on a regular basis.</p> <p>The requirement entered into force on 1 July 2012 for the first time and was subsequently modified on 1 July 2014. The Decree adjusted to changed market conditions entered into force on 1 January 2016 with tightened requirements. The MNB has further converged the regulation towards the NSFR requirement to be introduced in the EU in the medium term in order to make adaptation to the new regulation easier for banks. The modified requirement continues to adequately prevent the occurrence of risks stemming from foreign exchange financing.</p>
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	<p><b>Foreign Exchange Coverage Ratio</b></p> <p><u>Definition:</u> The regulation imposes a limit on the ratio of currency mismatches between assets and liabilities relative to the balance sheet total.</p> <p><u>Impact mechanism:</u> The instrument lowers the risks associated with excessive currency mismatches. The reduction of on-balance sheet currency mismatches also reduces institutions' reliance on off-balance sheet instruments (mainly swaps) which, in turn, lowers the risks stemming from these instruments, as well (rollover, liquidity and margin call risks).</p> <p>With its simple structure and targeted effect on risks, the indicator lowers the probability of regulatory arbitrage. Supplemented by other instruments, such as the Foreign Exchange Funding Adequacy Ratio, the instrument can also mitigate risks stemming from the vulnerabilities of external financing.</p> <p><u>Application and experience:</u> For the time being, international experience regarding the instrument is scarce. Hungarian experiences highlight the importance of adequate institutional coverage and efficient calibration.</p> <p>The requirement entered into force on 1 January 2016.</p>
<p><b>Regulation of over-reliance on the funds from the financial sector:</b> <i>Interbank Funding Ratio</i></p>	<p><u>Definition:</u> The regulation restricts funds from the financial sector weighted by currency and residual maturity in proportion to external liabilities.</p> <p><u>Impact mechanism:</u> The instrument directly prevents the excessive share of funds from financial corporations and consequently the risks stemming from over-reliance on them. The weighting of funds by currency and residual maturity ensures that the regulation supports the strengthening of currency and maturity matching. The ratio affects the risk in a targeted manner; therefore, the opportunity for regulatory arbitrage is limited.</p> <p><u>Application and experience:</u> At present, limited experience is available related to the instrument. Based on domestic experience, it is important to cover the appropriate institutions in respect of both the institutions required to comply with and funds taken into consideration, as well as the efficient calibration.</p> <p>The instrument entered into force on 1 July 2018.</p>
<p><i>May be applied for the purposes of any intermediate objective</i></p>	
<p><b>Restriction or prohibition of the performance of certain activities</b></p>	<p><u>Definition:</u> By way of Decrees, for a fixed term but no longer than ninety days, the MNB is entitled to prohibit, restrict or render conditional the performance of certain financial intermediary</p>

for a maximum of 90 days	<p>activities, provision of services, execution of transactions or offering of products.</p> <p><u>Impact mechanism:</u> The relevant activities may be banned or restricted if the performance of the given activity poses severe risks to the stability of the financial intermediary system with respect to the operation of the system as a whole, and the risks cannot be avoided by any other means. Since it is a pre-requisite of the instrument's application that the problematic activity affects a large number of customers or creditors or reduces the transparency of the financial intermediary system, by prohibiting the performance of certain activities for a definite period can ensure the maintenance of financial stability. In addition to the direct impact of the prohibition of the activity, the instrument sends an important message to consumers and creditors as well, encouraging them to adopt a duly prudent approach to the activities deemed problematic by the MNB. The 90 days available for the intervention allows for the management of the systemic risk either through regulations, within the competence of the MNB or the Government.</p> <p><u>Application and experience:</u> As the instrument has not been used so far, there have been no experiences regarding its application. The instrument may be applied, pending systemic risk developments, upon the decision of the FSB.</p>
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### 9.1. Macroprudential instruments applied in the case of the insurance sector

**The regulation of the insurance sector essentially follows a microprudential approach; however, several of the regulatory instruments may have important macroprudential connections.** The Solvency II Directive contains several elements, during the elaboration of which the systemic risk approach was also taken into consideration, and thus those may also facilitate the mitigation of systemic risks. Similarly, the MNB's recommendation on the volatility capital buffer and its regulation on the maximum technical interest rate serve – in addition to its microprudential objectives – the stability of the financial system as a whole.

- The *symmetric adjustment mechanism* of the market risk module, to be applied in the standard solvency capital requirement formula, facilitates that the change in capital requirement arising from the volatility of the equity market prices necessitates only moderate capital raising or reduction of exposures in the short run, thereby avoiding the forced and abrupt reduction of investment instruments.
- The *volatility adjustment*, applicable to the risk-free yield curve, is also meant to reduce market procyclicality, since it modifies the risk-free yield curve – used for the calculation of the technical reserves – in such a way that ensures the reduction of the impact of

temporary interest margin movements, influencing the asset prices, on the capital position.

- MNB Recommendation 6/2016 (VI. 14) on the *volatility capital buffer*, ensuring continuous capital adequacy, also serves the purpose that in the Solvency II regime the volatility of solvency capital, or the development thereof contrary to the expectations, should cause no capital adequacy problem for the insurer.
- MNB Regulation 54/2015 (XII. 21) prescribes the maximum technical interest rate that may be applied upon the premium calculation of life and health insurance products, and the various reserve elements<sup>26</sup>. The Regulation prevents, also at sector level, insurers from offering such high guaranteed yields, in the competition for customers, the future feasibility of which is overly risky.
- Article 138 of the Solvency II Directive permits the national supervisory authorities to *prolong* – for insurance companies holding a significant market share, but failing to comply with the capital adequacy requirement – *the period available for the recovery of solvency capital* by seven years, if the EIOPA declares the existence of an *exceptional adverse situation* (unexpected and drastic turbulence in financial markets, low interest environment or severe disasters). The assessment of the justification of the measure calls for a macroprudential approach.
- Based on Regulation No 1286/2014 of the European Parliament and of the Council, *the competent authority may prohibit or restrict the distribution of insurance-based investment products*. It may resort to such prohibition if the distribution of the targeted product raises major investor protection concerns or jeopardises the regular functioning and integrity of financial markets, or the stability of at least one Member State's financial system. Accordingly, the prohibition should be also preceded by risk analysis requiring macroprudential approach.

## 9.2. Instruments of macroprudential relevance, arising in the case of investment funds and fund management activities

**As regards investment funds, the maintenance of financial stability is also supported primarily by microprudential instruments.** The implementation of the Directives related to the regulation of the activities pursued by the *Undertakings for the Collective Investment in Transferable Securities (UCITS)* and *Alternative Investment Fund Managers Directive (AIFMD)* and of the funds managed by them, Act XVI of 2014 on collective investment forms (Collective Investment Act) and the Government Decree adopted by authorisation of the Collective Investment Act on the investment and borrowing policies of collective investment funds, designate the range of regulatory instruments with a microprudential approach.

<sup>26</sup> (1) life insurance and health insurance premium reserve qualifying as accounting technical reserve, (2) accident insurance actuarial reserves, (3) liability insurance actuarial reserve qualifying as accounting technical reserve.

- The fund manager also has the right to *suspend the distribution and redemption of mutual fund shares*. For example, if the liquidity of the fund is at risk, in the absence of measures taken by the investment fund manager or if the conditions for the operation of the mutual fund or the statutory conditions applicable to the obligation to provide information are not guaranteed, the supervisory authority may also suspend distribution and redemption to protect the holders of the mutual fund shares. The duration of the suspension may be maximum 1 year in the case of real estate funds, and 30 days in the case of all other investment funds. In justified cases, at the request of the investment fund manager, the supervisory authority may prolong the suspension by maximum 1 year.
- The AIFMD is required to perform regular *liquidity stress tests* and use an appropriate *liquidity management system* in respect of each fund managed by it, with the exception of non-leveraged, closed-end funds.
- In order to *limit leverage and manage the related risks*, the AIFMD is required to determine the highest degree of leverage – i.e. the exposure to net asset value ratio – that may be applied in the case of the funds managed by it, bearing in mind, among other things, all other concentrations or relevant connections with other financial service institutions that may represent systemic risk. Leverage of the UCITS is also restricted; by default, it may be maximum 2.1 times as high as the net asset value (for further details see the limits applicable to derivatives and credit funding limits below).
- The *restriction of the range of eligible instruments and the investment limits* may contribute to the mitigation of liquidity, leverage, market, counterparty and concentration risks at systemic level, as well.

### 9.3. Dedicated or macroprudential instruments applied in the case of financial enterprises

- *The debt cap rules (loan-to-value ratio and payment-to-income ratio limits)* are also suitable for mitigating systemic risks related to financial enterprises. Accordingly, as dedicated instruments of macroprudential objective, they may efficiently curb excessive credit outflow resulting from the activity of financial enterprises and may also prevent the development of excessive indebtedness. In the territory of Hungary, the regulation applies to all – including cross-border services – credit, loan, financial lease or payment services, rendered as financial services, and thus in terms of the debt cap rules, financial enterprises must comply with regulations equivalent to those applicable to banks.
- The purpose of *MNB Recommendation 11/2016 (XII. 1) on limiting the exposure to organisations pursuing shadow banking activity* is to make domestic banks pay more attention to assessing and limiting the risks related to their exposures to shadow banking organisations. Institutions acting in line with the recommendation reduce, as required, the risks arising from the interconnectedness of financial enterprises not belonging to any financial conglomerate and the banking system, and may limit the transmission of financial enterprises' loss to the banking sector.



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H-1054 BUDAPEST, SZABADSÁG SQUARE 9.