SUSTAINABILITY AND CENTRAL BANK POLICY – GREEN ASPECTS OF THE MAGYAR NEMZETI BANK'S MONETARY POLICY TOOLKIT

'Nature is immense, humans are tiny.
Mankind's existence therefore depends on his ability to relate to nature,
to understand it and to use its powers for his own benefit.'

Albert Szent-Györgyi

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The strategy was prepared under the guidance of Ádám Banai, Executive Director responsible for Monetary Policy and Foreign Reserves Management, with coordination by the Directorate Monetary Policy Instruments, Foreign Exchange Reserves and Risk Management. The strategy was prepared by the staff at the MNB's Directorate Monetary Policy Instruments, Foreign Exchange Reserves and Risk Management, Sustainable Finance and Supervisory Coordination Directorate, Directorate Lending Incentives, Directorate Monetary Policy and Financial Market Analysis, Directorate for International Monetary Policy Analysis and Training of Economic Sciences, Directorate Money and Foreign Exchange Markets, Directorate Financial System Analysis and Directorate Structured Finance Strategy.

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Foreword

Barnabás Virág
Deputy Governor

Environmental sustainability is one of the biggest challenges of the 21st century, as it has become clear that growth cannot be forced at the expense of nature. As climate change has implications for price stability, financial stability and sustainable convergence, it is an issue that central banks must also address as a matter of priority.

The transformation of the financial system is essential to ensure the financing needs of sustainable convergence. This requires new central bank thinking, in which sustainability considerations are given their proper weight and importance in terms of both monetary policy and financial stability.

The question today is not whether central banks should play their part in laying the foundations for sustainable convergence, but whether they can make the necessary transition to a new operating model in time. Conscious of its pioneering and exemplary role among central banks, the Magyar Nemzeti Bank (MNB) takes the view that it is not acceptable to put off the transition to a green economy: now is the time to lay the foundations for our future and take decisive action for a green, sustainable economic and financial transformation.

Along with our own beliefs, our commitment is also strengthened by the fact that, in accordance with the decision of the Hungarian National Assembly in May 2021, the MNB has included the promotion of environmental sustainability among its statutory objectives, in addition to the primary objective of price stability. Although this amendment of the central bank's mandate is short, it represents a historic step forward. These few words mean that Hungary has become one of the first countries in the world to incorporate environmental sustainability objectives into the central bank's statute, thus creating the opportunity for the MNB to specifically take sustainability and climate risk aspects into account in the formulation of its monetary policy and the operation of its instruments.

In the MNB's approach, ensuring environmental sustainability does not mean changing the orientation of monetary policy, but rather adjusting the central bank's instruments in the interests of sustainability, while keeping the price stability as its primary objective. Our strategy paper "Sustainability and central bank policy – Green aspects of the Magyar Nemzeti Bank's monetary policy toolkit" presents how environmental sustainability can be integrated into the MNB's monetary policy instruments in the future and explores the opportunities for progress over the shorter and longer term in Hungarian monetary policy practice.

With the adoption of this strategy, the MNB – which was already one of the most active central banks in the field of green renewal – has now moved to the next level and started integrating green aspects into its monetary policy toolkit, while maintaining price stability as its primary objective.

Barnabás Virág, Deputy Governor

1. Introduction

Achieving an economy that is also environmentally sustainable is a key objective for central banks, both in terms of price stability and efficient monetary transmission. According to the 2nd National Climate Change Strategy,[1] Hungary is one of the most vulnerable countries in Europe in terms of the likely consequences of climate change: the average temperature is expected to rise, the number of frost days will decrease, and the occurrence of extreme heatwave days will increase significantly. Owing to Hungary's strong climate exposure, it is particularly important to prevent the intensification of risks affecting the economy and the financial system. Climate change is one of the environmental, social and economic problems that may hinder sustainable economic development. The risks arising from climate change are now increasingly considered by credit rating agencies in their forecasts and assessments.[2]

Climate risk is also a financial risk, and maintaining financial stability is a prerequisite for effective monetary transmission. The mitigation of climate change and the associated adverse physical effects (physical risks) can be realised mainly through a deep, structural transformation of the economy. However, this can also involve considerable impacts and risks (transition risks). These include the radical environmental policy tightening needed to achieve a climate-friendly economy with zero or near-zero greenhouse gas emissions (emission caps or taxes, bans on certain polluting technologies) and the associated rapid technological change. It is important to emphasise that if the greening of the economy takes place too late – and therefore necessarily in larger steps – there may be significant risks for the economy and the financial system. This makes the protection of our natural assets and the timely development of an environmentally sustainable, stable economy and financial system an issue of strategic national importance. An important element in the development of a sustainable financial system is the spread of green financial instruments. In line with the EU taxonomy, we consider a financial instrument to be sustainable and green if it contributes to one of the following environmental objectives: preventing climate change, supporting economic adaptation to climate change, protecting drinking water and marine resources, supporting the transition to a circular economy, reducing environmental pollution and restoring biodiversity.[3]

Central banks cannot ignore the adverse effects of climate change. The intensification of climate anomalies may have a negative impact on economic growth. Storms and fires can destroy means of production, droughts and floods can disrupt agricultural activity, and the adverse health effects of global warming and heat waves can reduce labour supply. Extreme weather events can manifest as increasingly intense, persistent negative supply shocks to the economy. By raising price volatility, these shocks can pose a greater challenge for central banks in implementing their monetary policies. In addition, environmental disasters can have a serious impact on financial stability via a potential increase in non-performing loans, depreciation of collateral and changes in risk appetite. Central bank balance sheets may currently also be exposed to climate risks via securities purchased in asset purchase programmes and accepted as collateral in daily operations, as issuers of these securities may also have high exposure to the adverse effects of climate change.

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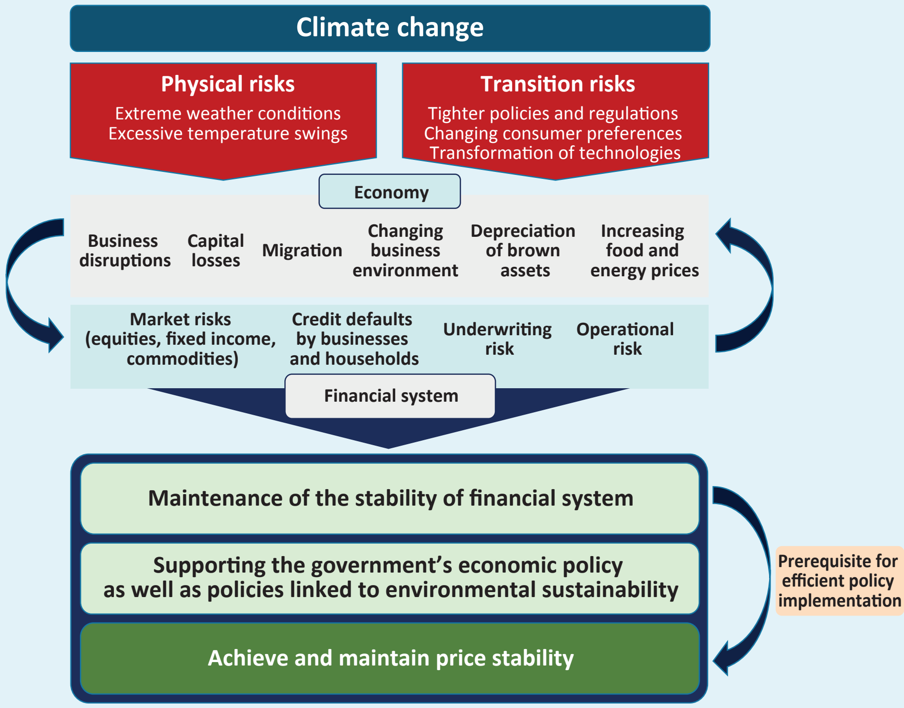
[1] A 2018-2030 időszakra vonatkozó, 2050-ig tartó időszakra is kitekintést nyújtó második Nemzeti Éghajlatváltozási Stratégia (2018) (2nd National Climate Change Strategy 2018-2030 with an outlook until 2050 - NCCS-2)

[2] Climate Change Is A Global Mega-Trend For Sovereign Risk – Standard and Poor's (2014), Environmental, Social and Governance – Defining Relevance to Credit – Fitch Ratings (2019)

[3] EU taxonomy for sustainable activities: Regulation (EU) 2020/852

Figure 1
Impacts of climate change on the MNB's primary and secondary objectives



Source: MNB.

Climate change affects all three mandates of the MNB directly and indirectly through physical and transition risks (Figure 1). In their own ways, the risks associated with global warming can simultaneously threaten the three central bank objectives. The resilience of the financial intermediation system may be weakened via a number of channels, while extreme weather events and changing consumer preferences may also directly threaten the achievement and maintenance of price stability. The integration of green aspects into the mandate of the central bank is achieved by way of supporting the government's policy on environmental sustainability, i.e. the central bank's involvement in climate change is aimed at supporting and complementing the government's economic policy guidelines without compromising the primary objective of price stability.

The coherence between environmental sustainability and monetary policy is vital for underpinning balanced economic growth over the long run. In addition to the effects of climate change, government efforts to meet climate targets may also have a significant impact on monetary policy, and vice versa. One of the main policy concepts to curb greenhouse gases is to raise the cost of emissions by imposing taxes, which – in addition to reducing emissions – would also provide a major incentive for the development of green economies. However, different approaches to raising costs affect the price of the goods concerned in different ways. Some measures have a stable and predictable effect on price developments, while other provisions may lead to increased price volatility. These effects should also be considered in monetary policy making. Building a sustainable economy has an important impact on some polluting industries, which can also have undesirable economic and financial stability effects. In the event of insufficient coordination between the implementation of government climate targets and monetary policy, central bank actions could even exacerbate economic downturns resulting from the implementation of climate targets and undermine the anchoring of inflation expectations.

The growing importance of environmental sustainability is reflected by the fact that priority focus is given to this topic in the European Central Bank's (ECB) strategic review launched in 2020. According to recent statements by ECB leaders,[4] climate change affects all aspects of monetary policy, including output, inflation, long-term interest rate developments and the efficiency of monetary transmission. Therefore, in order to successfully fulfil its mandate regarding price stability, the ECB must take into account the risks posed by climate change in its daily activities. The interlinkages between climate change and monetary policy and, if necessary, changes to the central bank's mandate will form an integral part of the ECB's strategic review, the results of which are expected to be published in the second half of 2021.

Climate effects typically unfold over a longer time horizon, which should be taken into account when designing the operational framework of monetary policy. The impact of climate change on the functioning of the economy is highly complex and goes beyond the horizon of monetary policy ("*tragedy of the horizon"*). In recent decades, weather-related economic shocks have proved to be temporary and concentrated, allowing monetary policy to ignore them, but this situation could change even in the medium term. If climate change intensifies the impact and frequency of adverse weather events, the period after which climate change affects the economy may be shortened and cause difficulties in the conduct of monetary policy. To address this, it is necessary to reflect the time horizon needed to incorporate climate change and environmental sustainability considerations when defining the framework for central bank instruments, while keeping the time horizon of monetary policy unchanged.

This strategy document sets out the principles and framework for translating sustainability and green aspects into monetary policy implementation. The strategy outlines the main principles, motivations and objectives of the climate-conscious renewal of the central bank's toolkit and provides an overview of the domestic developments, including the presentation of the green dimension of several relevant central bank programmes. It also outlines possible directions for greening monetary policy. However, the document is not intended to go into the details of the implementation of each measure, which – as has been the practice in the past – will be developed individually by the central bank when establishing the terms of each specific programme.

[4] Christine Lagarde: Climate change and central banking (2021)

2. Vision – Mission– Strategic goals

2.1. VISION

Hungary's sustainable convergence can only be achieved through a green transformation of the economy, which requires the transformation of the financial system that takes into account and effectively enforces environmental sustainability aspects on a broad scale, at the latest by the end of the decade. Therefore, the Magyar Nemzeti Bank will give strategic priority in the design of its monetary policy instruments to support the transparent presentation and consideration of environmental risks in the terms and conditions of financial instruments, within the framework set out in the Central Bank Act and without jeopardising the achievement of its other objectives.

2.2. MISSION

The Magyar Nemzeti Bank's mission is to develop its monetary policy instruments in line with its tasks and mandate as laid down in the Central Bank Act, without compromising its primary objective, and with a view to long-term environmental sustainability, thereby contributing to Hungary's sustainable convergence. The Magyar Nemzeti Bank intends to be proactive, leading by example among central banks, in supporting the transition to a low-carbon economy and in developing and implementing international best practices.

2.3. STRATEGIC GOALS

Fostering sustainable economic transformation. The transition to an economic model based on carbon neutrality that is sustainable over the long term can only be achieved with a deep structural transformation of the economy. Transition effects may entail measurable risks. Achieving sustainability goals requires the tightening of environmental regulations and the modernisation of existing technologies, which may pose a significant challenge to actors in the national economy. The MNB's role is to support the government's economic transformation policies and to mitigate the risks threatening macroeconomic stability.

Contributing to the achievement of climate targets. The negative consequences of climate change may affect different countries differently, but tackling the problem requires global cooperation. One key element of this is the Paris Agreement[5] adopted in 2015, which Hungary was among the first countries in the European Union to ratify. In addition to the Paris climate targets, the Hungarian Government has adopted the 2050 carbon neutrality target date set in the European Green Deal.[6] The MNB implements monetary policy in a manner that contributes to the achievement of the climate goals set by international organisations and the Hungarian Government.

Raising climate awareness in the financial system. In order to achieve sustainability objectives, it is crucial that market actors understand and incorporate climate change considerations into their practices. As a result, the real extent of the risks associated with climate change can gradually be reflected in the terms and conditions of individual financial products, and the financial system can thus make a major contribution to the greening of financial resources and the acceleration of environmentally beneficial capital flows. Raising climate awareness can also contribute indirectly to improving the transmission of monetary policy and strengthening its orientation ability. With regards to these aspects, the MNB aims to design the conditions for central bank instruments in a such way that contributes to increasing the climate awareness of the financial system.

Shaping consumer and social attitudes. Awareness-raising among consumers and in financial education, with a focus on climate change and environmental risks, plays a key role in the broad implementation of transiting to a green economy.

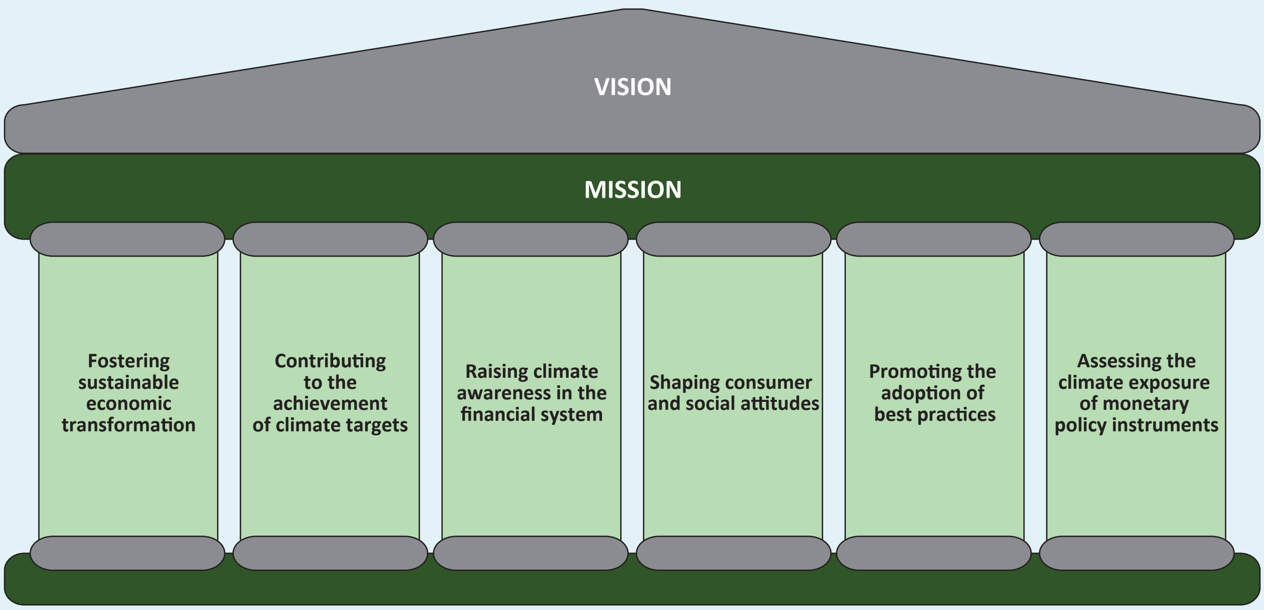
[5] Paris Agreement (2016)
[6] European Green Deal (2019)

Without adequate consumer demand, economic transformation may be slower, endangering the climate goals, and the transition to a sustainable economic model may be more costly and hazardous. The MNB also seeks to use its monetary policy instruments to contribute to shaping consumer awareness by focusing on environmental values.

Promoting the adoption of best practices. The introduction of appropriate financial instruments and the associated market processes and infrastructure is essential to create an environmentally centred approach in the financial sector. With their technical support and regulatory powers, central banks and supervisory authorities can contribute to the emergence of green products with common criteria and to the development of green markets. The MNB considers the consolidation of best practices to be important objective, which is essential for the development of liquid, transparent green financial markets that can operate over the long term.

Assessing the climate exposure of monetary policy instruments. Central banks are key players in the financial markets. In addition to providing incentives and guidance, their role in achieving climate objectives also includes managing the environmental impacts of their own financial operations. The MNB undertakes to continuously measure and assess the indirect climate risks associated with monetary policy implementation.

Figure 2
Strategic pillars of the vision and mission



Source: MNB.

3. Core values

In implementing environmental considerations in the monetary policy toolkit, the MNB considers the following core values.

Consistency with central bank mandates: Sustainability considerations can be derived from the primary goal of the MNB and are also consistent with the additional mandates set out in the Central Bank Act.

– ***Achieving and maintaining price stability.*** Both directly and indirectly via the financial intermediation system and structural transformation of the economy, climate-related risks may threaten the maintenance of price stability over the long run and the effective implementation of monetary policy.

– ***Stability of the financial intermediation system.*** Risks associated with climate change may have a major impact on the functioning of the financial intermediation system, the stability and resilience of which are key to sustainable economic transformation.

– ***Supporting the Government's economic policy and policies related to environmental sustainability.*** The MNB develops its instruments focused on sustainability aspects in line with and in support of the Government's economic policy. In addition, green renewal of the central bank's toolkit is closely harmonised with the Government's economic policy efforts on climate change and contributes to achieving sustainable economic growth.

Long-term vision and commitment. By nature, climate change is a slow but, after a certain point, irreversible process, even the recognition of which has also been preceded by lengthy professional debates. Addressing the problem requires a long-term commitment from economic policy actors that goes beyond the traditional time horizon of central banks. In designing its monetary policy instruments, the MNB is committed to giving high priority to the time horizon needed to achieve its objectives.

Stability. The use of green banking instruments can only be implemented in parallel with the continued safe operation of existing, successfully used instruments, thus preserving the results already achieved. The inclusion of sustainability considerations in the monetary policy toolbox does not represent a break with past practice, but merely a new factor, with stronger consideration of green aspect in decision-making, which can only be interpreted in line with traditional monetary policy considerations. When using the instruments of the central bank, efforts should be made to maintain a balance between traditional and new aspects and objectives in a way that ensures the stability needed to accomplish the central bank's mandates.

Targeted, effective instruments. Experience from recent years has shown that targeted central bank instruments focusing on a specific challenge can be an effective response to the challenges that arise. Accordingly, the MNB will design its sustainability-focused monetary policy instruments to contribute as directly as possible to combating climate change.

Integrity and transparency. As the green market segment evolves, standards and standardised procedures for each asset class are gradually being developed. In order to achieve sustainability objectives and to strengthen confidence in financial markets, the MNB encourages the development of market practices that ensure the transparency of green criteria associated with financial products and that properly reflect what is considered green. At the same time, the MNB intends to use its own instruments in a transparent manner, which is a cornerstone of effective monetary policy implementation.

Supportive central bank involvement. In its market engagement, the MNB aims to apply principles based primarily on positive discrimination. Incentive-based monetary policy can offset the risks of transition processes and effectively steer market participants towards attaining sustainability objectives.

Cooperation. The fight against climate change can only be successful together and in agreement with those involved. To this end, the MNB is committed to designing its monetary policy instruments in consultation with the financial sector and other stakeholders.

Initiative and innovation. Addressing these challenges in a timely manner requires urgent action by all stakeholders, and central banks and other economic policy actors must take the lead in the fight against climate change. In the design and operation of its monetary policy instruments, the MNB seeks to set an innovative example for market participants by transposing best practices and to support exemplary behaviour.

Synergy. The monetary policy toolkit focused on sustainability can contribute most effectively to the MNB's objectives by aligning and working in synergy with other central bank initiatives.

4. International overview

4.1. GENERAL CHANGE IN THE ATTITUDE OF CENTRAL BANKS GLOBALLY

Recently, the attention of central banks has increasingly focused on rethinking their role in the fight against climate change. Major global central banks have almost unanimously expressed their commitment to greening the financial sector and mitigating climate risks. However, there is also a heated debate among central bank policymakers about the role of central banks in the transition to a green economy. Some argue that this is primarily the responsibility of governments, while others would like to see central banks play leading roles.

In addition to their monetary policy and inflation objectives, central banks generally emphasise financial stability aspects in the context of climate risks. There is no clear dividing line between the different objectives, as the adverse effects of climate change may threaten not only price stability, but also the stability of the financial system. For this reason, there is consensus that climate change should be an important part of central banks' risk analysis. The ECB is planning to conduct a bank-level climate stress test in 2022, which may provide a more accurate picture than the climate stress test currently used and is based on the ECB's own internal database and models.

Although most central banks are engaged in the fight against climate change, for the time being, the green aspects are mainly emphasised at the level of communication. There are already examples of globally significant central banks taking climate risk considerations into account in their monetary policy actions (such as the greening of the UK central bank's asset purchase programme), but most central banks remain cautious about this topic and are only exploring possible actions.

Looking ahead, however, green considerations may appear in the central bank mandates as secondary objectives, and in parallel, central banks may adapt both their analytical and communication frameworks. In the application of some monetary policy instruments, climate-compatible principles may replace market neutrality (e.g. the alignment of balance sheet instruments with the support of green transition, the enforcement of green aspects in the valuation of collateral). The overview below presents the current approach of some central banks to the issue.

4.2. INTERNATIONAL EXAMPLES OF GREEN CENTRAL BANK ACTIONS AND COMMUNICATION

The mainstreaming of green aspects has become a central issue in the ECB's strategic framework review. The ECB has repeatedly stressed the importance of combating climate change and has indicated that it is addressed as a key issue in the ongoing monetary strategy review.[7] There is currently a vigorous debate and a significant divergence of views among central banks on the responsibility of central banks in the fight against climate change. The majority of eurozone central bank governors acknowledge that climate change is a major challenge that economic policy makers need to address, but there are differences of opinion as to the exact role of central banks. The enforcement of green considerations may be achieved by modifying the rules for asset purchases (e.g. discriminating against polluting emitters) or, for example, by incorporating climate risks more deeply into the central bank's modelling process. One important aspect may be to implement climate targets via central bank instruments that are not only temporary. However, the fact that EU legislation imposes tight restrictions on the instruments that the ECB can use to support green objectives may pose a difficulty.

[7] Climate change and the ECB

According to the Federal Reserve's communication, climate risk is primarily a financial stability issue, and the US central bank is less focused on the climate protection aspects from a monetary policy perspective. At the same time, the Fed is actively addressing the issue of climate change, and in March 2021, the central bank established a Financial Stability Climate Committee,[8] to identify and manage the risks arising from climate change.

Similarly to the Fed, the Bank of Japan sees the need for central bank intervention primarily from a financial stability perspective. The financial risks of climate change can have a strong impact on transmission channels, and it is therefore necessary to map these impacts. According to the central bank, further research is required on the need for central banks to play a more proactive role in the green transition from a financial perspective in the future, bearing in mind the mandate of central banks and the principle of market neutrality.

The Bank of England has also revised its monetary policy framework to include climate change related considerations. The Treasury and the central bank have indicated that in the future, green aspects will be added to the central bank's mandate, taking into account environmental sustainability and the shift to net-zero emissions,[9] so that the central bank's bond-buying programme can also become greener.

The PBoC already supports the greening of finance via various incentives (e.g. by collateral preferences and applying higher interest rates on mandatory reserves).[10] The central bank has indicated that in the future it will strive to develop green financial standards and green financial products and considers it important to strengthen international cooperation in the area of greening. The process of green transition may lead to a decline in the value of assets linked to "polluting firms" and a concomitant deterioration in the balance sheet of companies and financial institutions. This may lead to an increase in credit and liquidity risks and might jeopardise the stability of the financial system, which could also negatively affect the transmission of monetary policy.

Although most of the central banks in the region are addressing climate issues as an important topic, they have typically not yet taken specific steps to support reaching climate targets.[11] The central banks in the region are currently monitoring the actions of the globally significant central banks and are formulating possible future actions on climate change in their communication. Although several central bank policymakers in the region have indicated that more attention should be paid to climate change risks, there is no consensus. The majority of policymakers are cautious regarding the issue, and central bank actions are mostly limited to assessing, analysing and modelling climate risks.

Some central banks have already incorporated green considerations into their monetary policy frameworks. From January 2021, the Riksbank of Sweden only buys corporate bonds that meet international sustainability standards and norms.[12] The Riksbank justified its decision on financial stability grounds, saying that climate change poses significant physical and transitional risks that the central bank, as the body responsible for financial stability, must manage.

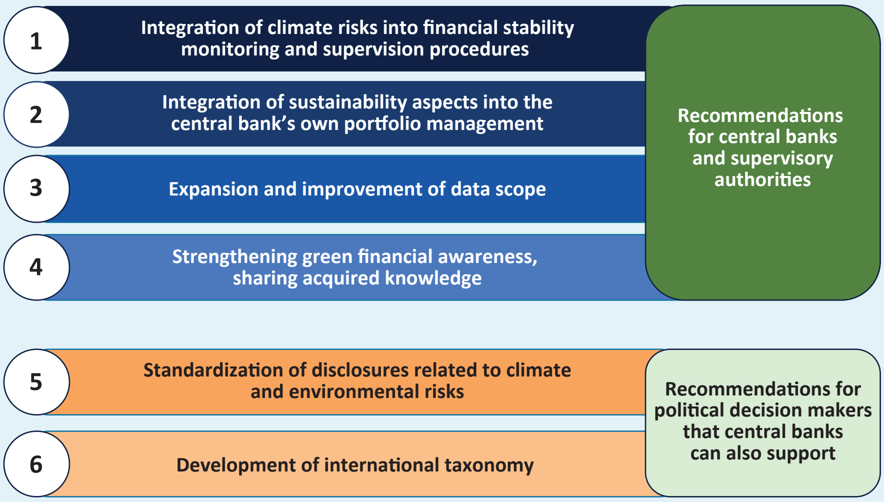
Looking at the central banks' reactions so far, it can be seen that the question of how a central bank should engage with climate change is still a divisive issue and in many aspects there is no consensus on the topic. Most policymakers believe that the climate risks cannot be ignored, but some argue that the greening of monetary policy could also pose risks, for example to the independence of central banks. The future actions of the globally significant central banks may be decisive for other central banks as well, and the outcome of the ECB's review of its strategic framework deserves particular attention.

[8] Governor Lael Brainard: Financial Stability Implications of Climate Change (2021)
[9] Remit for the Monetary Policy Committee (MPC) (2021)
[10] Yi Gang: Supporting low carbon development with green finance
[11] Greening the CEE-3 central banks: mandates and credit risk implications (2021)
[12] Riksbank takes sustainability into account when purchasing corporate bonds (2021)

4.3. INTERNATIONAL RECOMMENDATIONS

The Network for Greening the Financial System (NGFS) has made four main general recommendations[13] for central banks and supervisors, the first of which is the integration of climate risks into financial stability monitoring and micro-prudential supervision. Climate change is clearly a source of financial risk to which central banks must respond. Central banks must map the transmission channels of physical and transitional risks to the financial system and establish risk indicators to monitor them. To assess the risks, they need to carry out quantitative risk analyses and use them in their macroeconomic forecasting, preparing for a range of possible future scenarios. To ensure systemic action, it is important for central banks to work with financial firms to set supervisory expectations to guide the financial system in identifying, understanding and managing risks.

Figure 3
NGFS recommendations for central banks



Source: Edited by the MNB based on the 2019 NGFS report "A call for action – Climate change as a source of financial risk"

The second of the four main recommendations is to integrate sustainability considerations into central banks' own portfolio management. The NGFS encourages central banks to integrate sustainability considerations into their own portfolio management, whether it is their own fund or reserve management. In this way, central banks can set an example to other actors in the financial system and help them understand the long-term risks and opportunities.

The third general recommendation of the NGFS for central banks is to bridge the gaps arising from the lack of data. The scarcity and inconsistency of data is a major obstacle to properly assess climate-related risks. The availability of climate risk data for both green financial products and brown assets is a significant challenge. The time horizon is also a challenge, with the current data covering too short a time span. In many cases, the actors of the financial sector currently lack the expertise even to assess climate change risks.

In its fourth recommendation, the organisation highlights the importance of awareness-raising, building intellectual capacity and sharing knowledge. The NGFS encourages central banks and other financial institutions as well to allocate internal resources to start working on climate risks, helping their staff to acquire the right skills and knowledge. In addition, they should strive to share knowledge between institutions and involve academic actors in their work.

[13] A call for action - Climate change as a source of financial risk (2019)

The NGFS also highlights the importance of improving and standardising climate risk disclosures and taxonomy. Although these aspect are not strictly within the remit of central banks, they may also be able to support these general objectives. Improving the quality and increasing the quantity of data is critical, and appropriate taxonomy and publication requirements can play a key role in this. To facilitate harmonised disclosures, the NGFS has created the Task Force on Climate-related Financial Disclosures (TCFD) report which provides a template for climate risk disclosures for central banks and other financial institutions.

In its March 2021 technical paper on monetary policy instruments, the NGFS underlined that the financial risks related to climate change may have an impact directly on the circle of central bank counterparties and the financial instruments used in monetary policy operations.[14] Climate change shocks may have a direct impact on banks' balance sheets and the assets they hold. Banks may suffer losses directly and if the value of assets held by financial institutions falls sharply, they may be able to offer less collateral for central bank operations, which may limit their access to liquidity. Overall, in any possible scenario, climate change will have implications not only for financial stability but also for the operation of monetary policy instruments.

In designing their strategy, central banks may face a trade-off between accurate risk assessment and rapid implementation. As the third general recommendation underlines, climate change is a new type of risk for the central banks and the financial system as a whole; therefore data in sufficient quantity and quality are not yet available. This also means that, as the proper risk assessment required of central banks faces obstacles, it may be a rational decision for a central bank to even wait, i.e. to postpone the implementation, transformation and introduction of specific tools. Reacting without adequate knowledge can also raise reputational and legal issues. On the other hand, the lack of information also means that the central banks' balance sheets and the financial system as a whole may currently be exposed to huge financial risks that are not being addressed, which clearly underlines the need for swift central bank action.

[14] Adapting central bank operations to a hotter world - Reviewing some options (2021)

5. Overview of the Hungarian market

5.1. MARKET FOR GREEN ASSETS

The emergence of environmental considerations in global financial markets is linked to the bond markets. The first dedicated green bond, which earmarked the funds raised for specific climate protection purposes, was issued by the European Investment Bank in 2007. Subsequently, development of the green bond market was mainly catalysed by supranational institutions and development banks, while social and governance attributes also played an increasing role alongside environmental considerations, creating the ESG (Environmental, Social and Governance) criteria. In the standardisation of issuer practices, and along with it in the growth of international markets, the *Green Bond Principles* set out in 2014 by ICMA (International Capital Market Association) can be considered as a milestone, which gave a spectacular boost to the uptake in green-labelled bonds. In addition to sovereign and sub-sovereign issuers, commercial banks and corporates have increasingly entered the markets in recent years. In addition to green bonds, the integration of environmental considerations can be observed mainly in lending practices. In the case of a green loan, the bank can potentially offer an interest rate reduction for a mortgage loan to finance a more energy-efficient property or for the implementation of projects that improve energy efficiency.

At its current stage of maturity, the market of green assets in Hungary is dominated by green bonds. Globally, the potential for greening has emerged in recent years for many products and services, including green deposit accounts, securities backed by green assets and green insurance products as well. However, it can be said that, in general, green bonds are the most widespread green financial instruments in the vast majority of countries, and this is no different in Hungary.

Hungary's first green government bond issuance in 2020 played a prominent role in the development of the domestic green financial asset market. The Government Debt Management Agency (ÁKK) issued Hungary's first (international) green bond on 2 June 2020. The 15-year bond, denominated in euro, attracted more than fivefold investor interest, and was issued in a total amount of EUR 1.5 billion, according to the Government Debt Management Agency. After that, the Government Debt Management Agency remained an important player in the market and issued JPY-denominated Samurai bonds on 11 September 2020. Two of the four series were green bonds, with 7-year and 10-year green bonds issued for a total of JPY 20 billion. Similarly to the EUR-denominated green bond issue, the green Samurai bonds will finance the green expenditures of the central budget. The main categories of environmental spending are renewable energy, energy efficiency, land use and living natural resources, waste and water management, clean transportation and adaptation to climate change, with the majority of resources so far allocated to modernisation of transportation.[15]

On Earth Day, 22 April 2021, the Government Debt Management Agency issued its first green bond denominated in HUF. The first green government bond denominated in forint was issued with a 30-year maturity, making it the longest Hungarian government bond and the longest sovereign green bond in the world at the time. The bond issuance was accompanied with increased interest, with investors bidding for about seven times the announced amount.

In 2020, Hungary's first corporate green bond was issued. 2020 was a year of greening not only in the government bond market, but also in the corporate bond market. On 5 August 2020, CPI Hungary Investments Kft issued Hungary's first corporate green bond with a total nominal value of HUF 30 billion and a 10-year maturity. The issuance through the MNB's Bond Funding for Growth Scheme was met with strong investor interest, according to information from the company. The issue was followed by the issuance of three more green bonds by other companies, all through the MNB's Bond Funding for Growth Scheme.

[15] Based on the 2020 Green Bond Allocation Report of the Government Debt Management Agency.

In addition to the Magyar Nemzeti Bank and the Government Debt Management Agency, the Budapest Stock Exchange is also actively supporting the development of the domestic green assets market. In addition to ensuring trading in listed green financial products, the Budapest Stock Exchange has also prepared an ESG Reporting Guide[16] for issuers on the Stock Exchange. In the ESG Reporting Guide presented on 31 March 2021, several recommendations are made for example on reports and disclosures. This could help issuers to better meet the growing ESG expectations of investors, and thus create a more transparent green securities market in Hungary.

5.2. STRENGTHS AND CHALLENGES

In order to develop the operational steps needed to achieve the objectives set out in the strategy, it is necessary to identify both the supporting and challenging factors. An important prerequisite for achieving the objectives set out in the strategy is an accurate assessment of the situation, which includes the identification of strengths, supporting factors, risks and challenges. For the Magyar Nemzeti Bank, numerous features of the domestic financial system and environment support the implementation of the central bank's role in respect of climate change. In doing so, the central bank is also facing challenges, and to address these, we present the factors where there is room for improvement.

5.2.1. Strengths

Supportive environment. Effective integration of green considerations into the MNB's monetary policy toolbox can be achieved in a supportive environment: both the Government and the central bank have declared the importance of the transition to a green economy. The Government's commitment to a sustainable economic policy can increase confidence in the measures and acceptance by economic agents of the need to adapt. While international trends also point to a shift towards sustainable economic thinking, the domestic financial market environment, broad social support and innovative central bank operations can also contribute to a green renewal of the monetary policy toolbox.

Adaptive market actors. With the support of the central bank, domestic financial markets can adopt a climate-conscious approach and apply innovative green practices. Following several consultations with financial sector stakeholders and public organisations, the central bank's new supervisory recommendation for credit institutions on climate-related and environmental risks was published on 21 April 2021.[17] This provides guidance for credit institutions and laying the foundations for their future effective climate-smart operations. With a supportive central bank attitude, the domestic banking sector can start to further integrate environmental sustainability considerations into its business activities.

Developing green bond market. Green securities have recently appeared on several domestic sub-markets, with the first green corporate bond issue under the Bond Funding for Growth Scheme, in addition to the well-received issues of the Government Debt Management Agency. A liquid corporate bond market and a strengthened mortgage bond market, supported by the central bank's programmes, create opportunities for market participants to issue additional ESG securities and for the central bank to support green finance through multiple channels. As the range of green assets expands, domestic investment products applying sustainability aspects may also develop, attracting additional demand to the market. By implementing the green monetary policy toolkit strategy, the MNB can build on the well-functioning domestic financial markets, the successes of previous programmes and can further support the development of domestic green finances with a strategy embedded in local factors.

Green central bank approach. Green operations already play an important role in the MNB's approach. The central bank's Green Programme[18] was launched in 2019, and the first Green Finance Report[19] of the MNB was published in 2021. The central bank introduced its Green Preferential Capital Requirement Programme[20] from 2020 to support investments related to energy efficiency improvements in the real estate market. Sustainability aspects have also been included in the mandate of the central bank, and the amendment of the law means that the MNB will support the Government's

[16] Budapest Stock Exchange ESG Reporting Guide

[17] Recommendation No 47/2021. (IV. 14.) of the Magyar Nemzeti Bank on climate-related and environmental risks and the integration of environmental sustainability considerations into the activities of credit institutions (2021)

[18] The MNB's Green Programme (2019)

[19] MNB - Green Finance Report (2021)

[20] Information on the conditions of the Green Preferential Capital Requirement for Housing Programme (2020)

economic and environmental sustainability policies with the instruments at its disposal. The green renewal of monetary policy instruments can thus be implemented in line with the overall functioning of the central bank.

Innovative attitude. The MNB can succeed in the green renewal of the monetary policy toolbox by adopting the same innovative attitude as in previous years. The global crisis of 2008–2009 led to a rethinking of monetary policy objectives and instruments, and the MNB has developed proactive, innovative and targeted solutions to achieve its inflation target and put the economy on a sustainable path (e.g. FGS or Self-financing Programme). The renewal of the monetary policy toolbox of the MNB, with the quantitative restriction on the three-month deposit, further supported the loosening of monetary policy conditions while keeping the base rate stable. The MNB has also responded to the exceptional macroeconomic situation caused by the coronavirus outbreak by adjusting and expanding its monetary policy toolkit. To mitigate the negative effects of the pandemic on the real economy and financial markets, the central bank has adjusted its policy toolkit to provide the necessary liquidity and to ensure monetary transmission on all sub-markets in a targeted and flexible manner.

5.2.2. Challenges

The level of development of financial markets. There is room for further convergence with developed countries in the functioning of the domestic financial system. In terms of the level of financial development, some current lags may make it difficult to implement green monetary policy. There is room for improvement in terms of access to finance, the development of sub-markets, digitalisation and the integration of sustainability aspects, which could also be potential breakout points. The MNB is committed to the continuous development of domestic financial markets and sub-markets, that will provide further opportunities for the widespread penetration of green financial instruments.

Evolving international practices and data gaps. In addition to the dynamic international development of green finance, best practices and definitions are still taking shape. Recent years have seen a transformation in the international financial environment, with a focus on the climate change risks of financial instruments and an environmentally conscious approach to investment product markets. However, in conjunction with the rapid rise of green finance, its methodological background is still evolving. Currently, there is no globally agreed green taxonomy to facilitate transparency and comparability, and best practices for climate-conscious financial sector operations are not yet well established. The EU's Green Taxonomy,[21] published in 2020, helps clarify the conceptual framework, but its application is not yet uniform. This also means that, while striving for uniformity and consistency with international standards, the definition of "green" in MNB's programmes can be determined individually, for which this strategy provides a framework. To make commercial banks more climate-aware, it is first necessary to address the data gaps and standardise the green conceptual framework, as it is still difficult to quantify either the share of green loans or the climate impact of bank financial instruments. In the implementation of green monetary policy, the MNB should strive for a flexible approach to be able to adapt to the latest international practices in a constantly evolving environment.

Limited number of central bank examples. There is a limited number of international precedents for green monetary policy action. Most central banks are already actively addressing the issue of climate change, but few actions have been taken yet in the area of implementing monetary policies. The lack of available practical experience justifies a gradual and considered approach by the MNB, which takes into account international monetary policy trends and is based on continuous cooperation with the relevant actors in the financial sector.

Developing a long-term approach. In contrast to the short-term business thinking that often characterises the financial sector, the adoption of climate-conscious financial practices requires a long-term approach. According to the MNB questionnaire survey, only a small proportion of domestic financial institutions have a planning horizon of 10 years or more.[19] However, the short planning horizon is not appropriate either for addressing the climate risks or for taking into account the environmental impacts of business activities. In its supervisory recommendation on climate-related and environmental risks, the MNB sets out a number of expectations for credit institutions which can strengthen a long-term,

[21] EU taxonomy for sustainable activities

sustainable business approach. The MNB adopts a long-term view and considers a time horizon that goes beyond the traditional central bank time horizon in designing the green elements of its monetary policy toolkit.

The need for cooperation between actors with different interests. The MNB also relies on the cooperation of the banking sector in successfully renewing the green monetary policy toolkit. In order for the central bank to design its instruments in line with the specific characteristics of the domestic market and then to apply them successfully, cooperation with financial sector actors is necessary. According to data from the survey published in the MNB's March 2021 Green Finance Report, although banks' consideration of green aspects have increased over the past year, they still lag behind the practices of eurozone institutions. The success of the MNB's monetary policy measures to promote green finance also requires an innovative attitude from commercial banks.

5.3. GREEN ASPECTS OF THE RELEVANT MNB MEASURES

Despite several previously implemented successful central bank programmes were not designed with a green focus, they had a dimension that has already supported the achievement of sustainability objectives to some extent. Over the past years, the MNB has already been increasingly mainstreaming green considerations in its reserve management practices and in the design of supervisory measures and regulations. In the case of instruments more closely linked to the practical implementation of monetary policy, priority is naturally given to the application of traditional principles, but green motives can be detected in some programmes.

5.3.1. Funding for Growth Scheme

The Funding for Growth Scheme (FGS), launched in 2013, has so far not included dedicated green aspects, but the programme has promoted environmental sustainability in several respects. In the phases of the FGS before the FGS Go construction, the focus increasingly shifted to investment loans. With the help of the FGS, many companies made investments to purchase more modern equipment and machinery, thereby improving energy efficiency as well.

To cushion the negative economic impacts of the coronavirus pandemic, the FGS Go construction, which offers a wider range of uses, was launched in April 2020. Although the lending targets have been significantly broadened, the FGS Go conditionality has been designed to continue to support environmental sustainability. Unlike in previous phases, the maturity of the investment loans has been set at 20 years, facilitating the implementation of green investments.

To date, FGS Go has helped finance many investments in the renewable energy sector. In addition, the scheme supports the financing of the construction of residential properties for commercial sale or renting, thereby contributing to the renewal of the housing market. Based on feedback from the banks participating in the scheme, some HUF 120 billion of central bank funds could serve the construction of new residential properties by the end of this year. In addition, the FGS Go scheme allows condominiums and housing cooperatives to borrow for modernisation and energy saving (e.g. insulation, building services) investments beyond their own economic activities.

5.3.2. Bond Funding for Growth Scheme

Green bonds are one of the best known and most widespread green financial instruments on the global market. There are significant differences in the development of not only green corporate bonds, but also of the classical corporate bond market in international comparison. The size of the Hungarian corporate bond market was 1 per cent of GDP before launching the Bond Funding for Growth Scheme, but as the result of the programme it has now almost quadrupled and Hungary has started to catch up with its regional competitors. An important element of this development is the emergence of corporate bonds incorporating green aspects.

The first corporate green bond issuance took place in the summer of 2020 under the MNB's Bond Funding for Growth Scheme. This issuance of HUF 30 billion marks the kick-off for the Hungarian corporate green bond market and has been followed by more green bonds issuances by several other companies. The issued bonds are all compliant with corporate Green Bond Framework which has been validated by external reviewers in line with international standards (Green Bond Principles).

The proportion of green bonds within the total HUF 1,400 billion portfolio of corporate bonds under the Bond Funding for Growth Scheme exceeds 10 per cent. The issuance of corporate green bonds in Hungary has so far been mostly linked to the real estate development sector, which is a key area for reducing carbon emissions and mitigating climate risks.

A further element of the central bank's green initiatives is the green preferential capital requirement introduced by the MNB at the end of 2020, whereby the investors buying green corporate bonds will receive an allowance regarding the capital requirement for that asset. The scheme may allow for lower-cost financing, which could also help companies issuing green bonds to raise funds on more favourable terms and at lower cost.

Although the domestic corporate bond market has nearly quadrupled since the launch of the Bond Funding for Growth Scheme, it is still in an early stage of development. The priority remains to develop the overall bond market and make it more liquid in order to increase the efficiency of the monetary transmission mechanism and diversify funding sources of companies. Increasing the size and liquidity of the green and other sustainable corporate bond markets is an integral part of this development, and the current framework of the Bond Funding for Growth Scheme provides an appropriate opportunity to do so. The MNB can play a key role in this through the education and development of issuers and investors as the market's participants.

5.3.3. Greening of reserve management; green bond portfolio

By continuously monitoring international central bank trends, many opportunities emerge to incorporate additional green aspects into reserve management practices. Current trends show that more and more central banks have started measuring climate risk variables and integrating them into their decision-making, as well as for foreign exchange reserve portfolios. One of the most commonly used methods is negative screening. This practice is followed by the Swedish central bank, for example, which excludes the highest carbon-emitting areas from its Canadian and Australian portfolios, but other central banks also apply some form of negative screening, mainly by excluding coal, oil and gas companies from their investment universe.

Besides the MNB, a number of central banks and international organisations such as the ECB, the BIS and the PBoC are also open to the green bond market, which is the most common form of impact investing. Among central bank practices, there are also examples of a best-in-class approach,[22] whereby the best-performing investments from an environmental point of view are preferred and weighted over the benchmark indices. In addition to the above, ESG integration is also starting to emerge in central bank thinking, which goes beyond greening the reserves and can be considered as the next level.

The greatest challenge of the ESG approach at the moment is the lack of a single set of rules, which leads to very different results from different methodologies. Central banks can also influence the environmental and sustainability performance of companies by exercising their ownership rights (voting and engagement) tied to their equity investments. In view of the many possibilities, the MNB is also continuously examining what further steps could be made to take into account additional environmental and sustainability aspects when investing foreign currency reserves.

Based on the Monetary Council's decision, the MNB started to build up a dedicated green bond portfolio in 2019, making it one of the first central banks worldwide to demonstrate its commitment to green objectives in reserve management as well. The size of the green bond portfolio within the reserve approximately reflects the size of the global green bond market. The risk/return characteristics of the portfolio do not differ significantly from similar investments,

[22] Banque de France Responsible Investment Report, 2020

but it has a slightly longer maturity structure compared to other MNB portfolios, which supports the long-term nature of green finances. The design of the portfolio has also received positive international response, with several major market participants highlighting the MNB's commitment and pioneering role in their feedback.

The MNB ensures compliance with environmental targets through an easy-to-operate and transparent, but sufficiently stringent set of criteria which is in line with international best practices. Accordingly, the green bonds must comply with the ICMA's Green Bond Principle and must obtain a green rating by an independent external partner.

The MNB also examines the commitment of bond issuers to sustainable development, thus reducing the risk of greenwashing – in the near future, this could mean, for example, the monitoring of SBTi (Science Based Target) or similarly explicit emission reduction targets per entity. If the bonds subsequently fail to meet green expectations, for example if the environmental impact of the projects falls below the committed level, or if the issuer's overall activities fail to meet green targets ("green default"), the MNB may decide to sell the bonds.

The green bond portfolio holds EUR-denominated bonds, but the geographical exposure is well diversified, with securities from a number of countries and regions. The backbone of investments is predominantly formed by supranational institutions and EU issuers, reflecting the composition of the investment universe. The portfolio holds a number of different types of bonds in line with the MNB's general framework: low-risk, highly rated government bonds, supranational issuers, bank and corporate bonds as well as covered bonds. In 2021, the environmental impact of the green bond portfolio was published for the first time, with the key finding that the pioneering central bank practice has contributed to avoiding around 55,000 tonnes of carbon dioxide emissions per year.[23]

5.3.4. Green measures taken by the MNB as the supervisory authority

The MNB's Green Programme was adopted and published in January 2019. In addition to the more narrowly defined central bank activities described in the previous sections, the supervisory branch of the MNB has also taken proactive steps to combat climate change. In line with its new Supervisory Strategy, the MNB's Green Programme openly strives to ensure that both the MNB's own activities and the operation of domestic financial markets and the financial intermediary system contribute to the detection, assessment, prevention and management of environmental risks and to Hungary's climate policy objectives, while also meeting prudential requirements to the maximum extent possible. The central bank is also at the forefront of developing a green financial culture in Hungary through its publications and research, education and curriculum development activities as well as its work in organising conferences that bring together professional audiences.

As a financial supervisory authority, the MNB is responsible for supporting the identification, prevention and mitigation of undesirable business and economic risks to financial institutions. Although climate and other environmental risks are clearly present in the financial system, their extent is not yet known. Surveys in recent years lead to the conclusion that individual financial institutions are failing to measure, manage and mitigate these risks effectively. In 2021, the central bank, in cooperation with international research institutes, wishes to conduct a climate risk stress test to assess the impact of climate change on the domestic macroeconomy and the banking system. This initiative is thus closely related to the macroprudential policy of the MNB, and further analyses and policy actions can be planned on the basis of the climate stress test.

The purpose of the MNB's Green Recommendation is to highlight the environmental risks that have been considered a "blind spot" until now, thereby helping to transform the risk management framework of financial institutions. The Green Recommendation will help assess and manage exposures to climate change and other environmental risks. In line with international best practices, the Recommendation sets out supervisory expectations in relation to strategy development, corporate governance, risk management and disclosure, supporting the integration of environmental sustainability considerations into the operations and business activities of financial institutions.

[23] MNB green bond portfolio – positive impact equating the carbon footprint of a town (2021)

The MNB was the first financial supervisory authority in the world to introduce a preferential capital requirement for banks' energy-efficient housing loans starting from 1 January 2020. In addition to supporting the growth of domestic green lending, the use of preferential treatment will encourage green risk awareness among credit institutions and contribute to the mapping of the risk gaps between green and brown assets, which is coming into focus across Europe. The green lending preference for housing itself can be very well linked to the MNB's planned green mortgage bond purchase programme and to the green housing lending provided by the refinancing source of the central bank.

In order to mitigate the transition risk of domestic credit institutions related to climate change and other environmental anomalies, the MNB will also encourage the increase in corporate exposures to environmentally sustainable (green) industries and activities in the balance sheets of banks from 2021 onwards through a preferential capital requirement. The preference will initially apply to investment or project loan exposures related to financing renewable energy production and to green bond holdings that meet international standards and are verified by an external review. In light of the feedback from banks, the MNB is continuously exploring the possibilities of extending the benefit to other green activities.

In addition to credit institutions, domestic capital markets can also play a key role in providing the resources needed for sustainable convergence. In order to identify legal/regulatory barriers to the development of green capital markets and to carry out an in-depth analysis of the demand and supply-side drivers of green capital market instruments, the MNB launched its strategic project on sustainable capital market development in partnership with the EBRD in summer 2020. The project's recommendations will form the basis for a market development action plan, the implementation of which is expected to expand the range of green capital market players and increase the use of green financial instruments (e.g. green bonds).

5.4. POSSIBLE FURTHER STEPS FOR GREENING MONETARY POLICY

In implementing the strategy, the MNB will aim to review the full range of the monetary policy instruments with a view to how the environmental sustainability considerations can be integrated in each case without compromising the achievement of the core monetary policy objective of the instruments. There are several distinguished areas to develop in the near future, in respect of sustainability.

5.4.1. Transparency and reporting

In keeping with its core value of transparency, the MNB may communicate the climate-related risks and carbon footprint of its monetary policy instruments. In line with the NGFS recommendations, the MNB may develop indicators and targets that capture the risks related to climate change and the opportunities available in the area of climate protection. By taking the initiative, the central bank can also set an example for other players in the domestic financial system.

With the publication of the financial report related to climate change (TCFD Report) scheduled to the first half of 2022, the MNB shows its commitment to demonstrate the integration of sustainability considerations into the central bank's governance, strategy and risk management practices. Within this framework, it will be possible to measure the climate impact of the government and mortgage bonds purchased by the central bank as well as to explore the intensity of the GHG emissions of companies participating in the Funding for Growth Scheme. The report also provides an appropriate platform for presenting relevant practices in collateral management and the climate risks associated with the sovereign exposure of foreign exchange reserves.

The TCFD Report is well aligned with the emerging international practice as well as with the MNB's Green Programme and the Green Toolkit strategy, thus strengthening the synergies between the Bank's initiatives. The objectives of the report and the related guidelines are in harmony with the MNB's green focus efforts. On the one hand, the report fits in with the guidelines set out in the Green Programme, and on the other, it complements the sustainability-focused monetary policy toolkit strategy. With the publication of the TCFD Report, the MNB can join the limited number of central banks handling sustainability issues with high priority, setting an example for domestic market participants.

5.4.2. Central bank incentives for green lending

In order to avoid market frictions, incentives shall ensure that green considerations are taken into account in lending. The renewal of the energetically obsolete housing stock could make a significant contribution to meeting domestic climate targets. Currently, residential buildings are responsible for nearly one quarter of domestic primary energy consumption. From an energy perspective, only a few per cent of the domestic housing stock can be considered green property according to international green definitions. Although newly built properties are significantly more energy efficient, there is still substantial scope to improve energy efficiency. The renewal rate can be considered low and even in the case of new properties, the proportion of modern but less energy efficient properties, i.e. below BB rating, is high.

The MNB may contribute to the modernisation of the domestic housing stock and thus to the achievement of climate targets through a variety of instruments. The central bank has the ability to support green lending indirectly, via the securities market, or directly by other means. In addition, through these actions, the MNB can help raise consumer-awareness, which can also contribute to the spread of green lending.

In 2021, the MNB will launch the Green Mortgage Bond Purchase Programme, which may be one of the first asset purchase programmes in the world with a focus on sustainability. The programme can contribute to the spread of green mortgage loans through targeted purchases. The strategic goal of transforming the MNB's presence in the mortgage bond market is to foster a domestic green mortgage bond market and to introduce best practices. In the programme, the MNB expects to follow international standards, which will support the development of a liquid and transparent domestic green mortgage bond market with a uniform basis. In designing the terms and conditions of the programme, the MNB also sought to ensure that – in line with the Government's efforts to create homes – central bank purchases give priority to newly disbursed consumer green mortgages for home purchase purposes, thus contributing to the construction of more energy-efficient housing and a more sustainable housing stock in Hungary.

The central bank considers it desirable to develop environmentally aware consumer behaviour. To encourage environmentally conscious consumer behaviour, the mortgage banks participating in the Green Mortgage Bond Purchase Programme will make commitments in respect of the information to be provided to their customers. In this context, the lending bank will make its customers aware of the environmental sustainability aspects of home purchase mortgages and their contribution to environmental sustainability goals. The condition of participation has been designed in line with the relevant point of the MNB's Green Recommendation, thus reinforcing the related central bank initiatives.

Green housing loans can also be encouraged with a favourable refinancing facility provided by the central bank, and the MNB started technical preparation for this in the first half of 2021. The availability of low-interest loans for the purchase of new properties could greatly improve the availability of credit for buying new homes. By providing funds from the central bank, it may be possible to create products that are significantly cheaper than market loans and have fixed interest rates until their maturity date. Other economic policy measures, such as state interest rate subsidies or guarantees, may also help to reduce the remaining interest rate premium in part or in full. The central bank could provide refinancing loans, while the government could help households to buy or build new homes by assuming the credit risk or by subsidising interest rates.

5.4.3. Green collateral management

The MNB undertakes to step forward in integrating green considerations into its collateral management practices as early as 2021. Without sustainability considerations, there can be no effective monetary policy implementation, which is why the greening of collateral management is also recommended. Collateral management can be used to support specific sectors, promote the spread of best market practices and influence the level of climate risk at the central bank.

In the context of asset purchase programmes and collateral management, the central bank's balance sheets are currently highly exposed to climate change risks. By accepting assets as collateral, the central bank takes on green risks, even if only indirectly. With the possible withdrawal of collateral, this becomes a direct risk. Furthermore, the central bank's collateral management framework has a significant impact on the liquidity management of commercial banks as well, and can be an effective incentive for greening the bank exposures and influencing risk management practices.

By mainstreaming sustainability aspects in the collateral management framework, the MNB can set an example for all market participants, in addition to commercial banks, thus contributing to the development of best market practices. So far, central banks have taken only small steps towards greening collateral management, but there is a consensus among central banks and market participants that collateral management frameworks need to be reviewed.

The greening of the collateral management framework can support several relevant central bank objectives and function as an integral part of the central bank's green toolkit strategy. In the spirit of the core value of transparent central bank operation, the MNB strives to ensure that the collateral pledged at the central bank is also presented from a sustainability perspective. The introduction of a green haircut can effectively contribute to the development of a sustainability-oriented bond market through the preferential treatment of green securities. Acceptance at higher collateral values can increase the number of future green issues, thus supporting the green bond market. Renewal of the collateral management system on the basis of sustainability aspects could potentially have a significant impact on the banks' liquidity management practices and thus on their business.

The greening of collateral management is a long-term project, but small steps can also have an impact on market participants over the near term. The introduction of a green haircut can be easily implemented on a 1–2 month time horizon with the existing systems and data and can therefore support the green bond market and stimulate issuance in the short run. A medium-term objective is to present the green characteristics of collateral in a TCFD report. Over the long term, the entire collateral framework could be reviewed in the context of green banking.

The integration of sustainability considerations into collateral management is a new area where uniform market or central bank best practices have not yet emerged, and the availability and acquisition of relevant data can also be challenging. The integration of sustainability considerations into the collateral management framework may be gradual and is expected to increase in volume as the popularity of green asset classes gradually grows.

5.4.4. Fitting macroprudential measures into a green monetary policy toolkit

The introduction of macroprudential policies to support the achievement of sustainability objectives can complement the framework of a green monetary policy toolkit. Targeted measures that directly affect the functioning of financial institutions, complementing other central bank instruments and creating synergic effects with them, can support the spread of green financial instruments, foster an environmentally responsible customer culture and thereby help achieve climate targets. At the same time, macroprudential instruments that integrate green aspects will further strengthen the stability of the financial system by mitigating climate change risks and thus indirectly enhance effective monetary policy implementation.

Over the next 1-2 years, the MNB will start to incorporate the elements of green risk monitoring into the financial stability monitoring systems. A climate risk map could also be developed within the MNB's risk assessment and decision-making framework in order to measure the financial system's exposure to climate change, and the introduction of stress tests that take climate risk into account may be justified to assess potential vulnerability. At the same time, the assessment and evaluation of green risks can also be given increasing prominence in the MNB's regular publications.[24]

[24] MNB - Green Finance Report (2021), Macroprudential Report (2020)

Over the short term, macroprudential regulation can support green objectives via existing instruments, but in the long run, specific broadening of the toolkit may be justified.[25] The fine-tuning of macroprudential instruments in a green direction could involve both prohibitive measures which set minimum green requirements and measures relying on positive incentives favouring environmentally less risky activities. Based on experience to date and international trends, it would be encouraged primarily through preferential treatment of climate-friendly financial services in the regulations of public authorities. Financial regulation should also be designed to strike an ideal balance, so that mitigating physical risks and environmental damage does not compromise financial stability objectives.

Green considerations can be integrated into several elements of the MNB's macroprudential toolkit, taking into account international trends and potential risks:

- **Capital requirements:** In particular, the systemic risk capital buffer, which can be used by national authorities to mitigate a wide range of systemic risks to financial stability, could be a useful tool to mitigate the climate risks and to take into account green aspects. Therefore, it may be appropriate to calibrate the capital buffer in such a manner that higher buffer rates are required for more environmentally risky exposures.

- **Liquidity and financing instruments:** Of the liquidity and funding requirements of the MNB, the Mortgage Funding Adequacy Ratio is the main one used to encourage the raising of green funds, in this case the issuance of green mortgage bonds. The launch of a green mortgage bond market would support financial stability objectives in addition to green considerations. Firstly, it can contribute to the spread of green mortgage lending, which is also beneficial from a financial stability perspective due to the expected lower credit risk. Secondly, the emergence of green mortgage bonds could also support the development of the domestic mortgage bond market, which is important for the stable funding of banks, for example by attracting a new and wider range of investors.

- **Debt cap rules:** The regulatory limits may also take into consideration the more favourable risk characteristics of green loans. Based on the green hypothesis, both the probability of default (PD) and the loss given default (LGD) of loans with green features may be lower due to different maintenance costs and more crisis-resilient housing market demand.[26] However, currently the justification of such a change in risk management standards and lending conditions cannot be considered well-founded due to lack of available data.[27] Over the longer term, however, there may be a case for relaxing the debt cap rules for green exposures, or even tightening them for more polluting properties.

Having the right data is a prerequisite for incorporating green sustainability considerations into banking risk analysis and lending practices as well as regulatory decision-making and risk monitoring.[28] Currently, there is very little data available to assess the environmental impacts of individual financial services. Therefore, it would be important for banks to start collecting such data, and use of the data assets available to the state could also play an important role in the future. It should be ensured that these data are available to the banks and regulators. This would strengthen the effectiveness of targeted central bank programmes and the monitoring of environmental risks by banks and regulators, which would also significantly contribute to their mitigation.

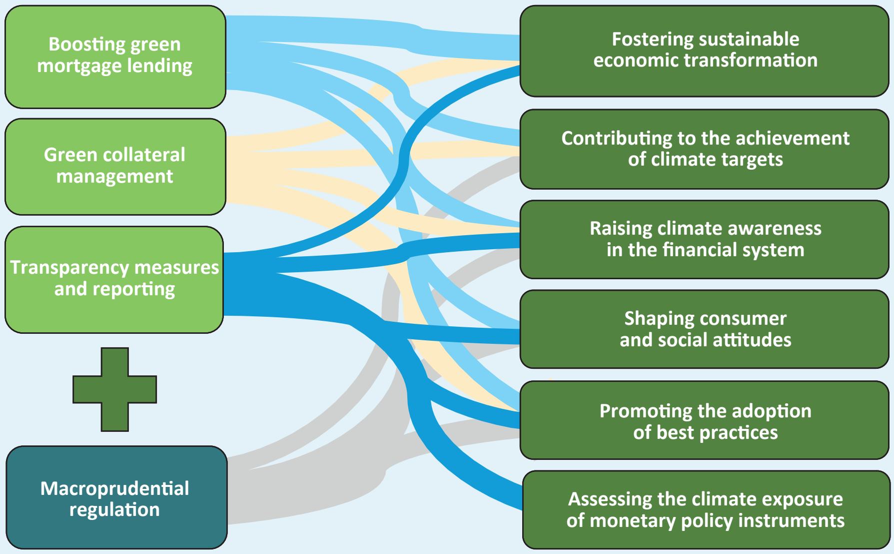
[25] Frankfurt School of Finance & Management: Delivering the green economy through financial policy (2014),
D'Orazio P. and L. Popoyan: Fostering Green Investments and Tackling Climate-Related Financial Risks: Which Role for Macroprudential Policies? (2018)

[26] Green retail lending in Hungary (2019)

[27] NGFS: A Status Report on Financial Institutions' Experiences (2020)

[28] BIS: Climate-related financial risks – measurement methodologies (2021), ESRB: Positively green: Measuring climate change risks to financial stability (2020), IMF: Macroeconomic and Financial Policies for Climate Change Mitigation: A Review of the Literature (2019)

Figure 4
Practical implementation of the strategic goals



SUSTAINABILITY AND CENTRAL BANK POLICY –

GREEN ASPECTS OF THE MAGYAR NEMZETI BANK'S MONETARY POLICY TOOLKIT

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