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TECHNICAL NOTE ON MACROPRUDENTIAL POLICY FRAMEWORK AND TOOLS

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TECHNICAL NOTE

MACROPRUDENTIAL POLICY FRAMEWORK AND TOOLS

Prepared By
Monetary and Capital Markets Department

This Technical Note was prepared by Andre Geis and Lu Zhang in the context of the Financial Sector Assessment Program in Belgium. It contains technical analysis and detailed information underpinning the FSAP's findings and recommendations. Further information on the FSAP can be found at http://www.imf.org/external/np/fsap/fssa.aspx

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Glossary

AIFM	Alternative investment fund manager
BIS	Bank for International Settlements
BNP	Banque Nationale de Paris
CBSO	Central Balance Sheet Office
CCoB	Capital conservation buffer
CCR	Corporate Credit Register
CCyB	Countercyclical capital buffer
CET1	Common equity tier 1
CICR	Central Individual Credit Register
CRD	Capital Requirements Directive
CRE	Commercial real estate
CRR	Capital Requirement Regulation
DSTI	Debt service to income
DTI	Debt to income
EBA	European Banking Authority
EC	European Commission
ECB	European Central Bank
ESRB	European Systemic Risk Board
EU	European Union
FSAP	Financial Sector Assessment Program
FSMA	Financial Services and Markets Authority
FSR	Financial Stability Report
GDP	Gross Domestic Product
G-SII	Global systemically important institution
GSyRB	General systemic risk buffer
HFCS	Household Finance and Consumption Survey
ICR	Interest coverage ratio
IFRS	International Financial Reporting Standards
ING	Internationale Nederlanden Groep
IROP	Institutions for occupational retirement provision
KBC	KredietBank and CERA
LCR	Liquidity coverage ratio
LR	Leverage ratio
LSI	Less significant institution
LTV	Loan to value
MFC	Macro-Financial Committee
MPR	Macroprudential Policy Report
MSCI	Morgan Stanley Capital International
NBB	National Bank of Belgium

NFCs	Non-financial corporations
NPL	Non-performing loan
NSFR	Net stable funding ratio
O-SII	Other systemically important institution
OECD	The Organization for Economic Cooperation and Development
PHL	Prêts Hypothécaires / Hypothecaire Leningen
RRE	Residential Real Estate
RT MPP	Risk Team Macroprudential Policy
SI	Significant institution
SSM	Single Supervisory Mechanism
SSyRB	Sectoral systemic risk buffer
SyRB	Systemic risk buffer
UCITS	Undertakings for collective investment in transferable securities

EXECUTIVE SUMMARY

Despite a series of shocks in the recent past, the Belgian financial sector has remained resilient and firm evidence for sustained credit or real estate price booms is limited. The profitability, capital adequacy and liquidity of banks have surpassed their pre-pandemic levels, remaining comfortably above regulatory thresholds. Notwithstanding the blows to the economy inflicted by the pandemic, spillovers from Russia's war in Ukraine, and the energy crisis, bankruptcies have not materialized, and the quality of loan portfolios has stayed strong as automatic wage indexation and government support have helped households and firms. The credit gap turning positive in late 2017 did not herald the beginning of a prolonged period of further widening, with private sector borrowing expanding at a robust pace until the rapid tightening of financial conditions since 2022 triggered an ebbing of lending growth. Prices for residential and commercial dwellings have steadily increased since 2014, yet market dynamism over this period has been generally below developments seen in other euro area countries, keeping valuations in check.

Against a backdrop of the steep rise in interest rates, pockets of vulnerability may emerge. Following the adverse repercussions from the pandemic and the energy crisis, the less favorable funding environment is an additional burden for private sector balance sheets. Moreover, the mortgage debt of households has been on a secular rise and financial sector exposures to commercial real estate are large in comparison to euro area peers, leaving banks and insurers vulnerable to a sharp market correction or a worsening of the debt servicing capacity of borrowers. Within the financial sector, large-scale deviations from historical patterns of deposit repricing may have adverse effects on the profitability of banks. At the same time, households benefit from a sizeable stock of liquid financial assets and the prevalence of fixed-rate, fully amortizing housing loans provide some insulation against a rise in financing costs. Likewise, the financial position of large parts of the corporate sector is robust and indebtedness is moderate relative to other European economies.

Despite commendable progress since the 2018 FSAP, the macroprudential policy framework could be strengthened along several dimensions. The authorities have implemented several of the recommendations from the 2018 FSAP, yet the institutional framework for macroprudential policy has remained unchanged. The power to adopt legally-binding borrower-based tools and to enact by Royal decree the activation or modification of other macroprudential instruments has remained in the hands of the government, although the NBB is the designated macroprudential authority. The 2023 FSAP suggests multiple avenues to improve institutional arrangements, systemic risk monitoring as well as the set of macroprudential tools and their calibration. In particular,

- *over the medium term, the NBB should be granted the full power to set macroprudential policy to support its ability to address systemic risks in a timely and appropriate manner.* The presently large role of the government in macroprudential policy making may hamper the NBB's ability to fulfill its financial stability mandate. The NBB has demonstrated in the past that a balanced macroprudential policy can be achieved without giving the government the last say over all decision but attributing it a consultative role. Hence, vesting full discretion to adjust

macroprudential policy with the NBB in consultation with the government would facilitate the timely adoption of suitable instruments to contain systemic risks.

- *in the near term, the NBB should be granted the power to set CRD/CRR tools, and requirement of government enactment for the extension of active macroprudential measures should be eliminated*. Government influence on the macroprudential tools encompassed by CRD/CRR is unusual in a European context or – if chosen – is made explicit by attributing the associated powers to a ministry. As the NBB is the designated macroprudential authority in Belgium, giving it full powers over CRD/CRR measures, in line with most other European countries, would improve its ability to mitigate financial stability risks in a timely fashion. Moreover, the practice of the government having to enact by Royal decree the extension of active CRD/CRR instruments, even if their calibration is not set to change, should be abolished to avoid the risk of still desirable measures lapsing and to eliminate an unnecessary administrative layer.

- *the government should publish its rationale for macroprudential policy decisions, including in the case of inaction to enact such instruments through Royal decree*. Communication by the NBB on some of its macroprudential tools is strong but hampered for other instruments by the need to obtain government approval before decisions can be conveyed to a wider audience. Therefore, establishing a formal protocol for communication about all decisions, including for instances where no action is taken, and publishing the factors influencing the government's deliberations with a financial stability impact will help boost accountability and strengthen the transmission of macroprudential policies.

- *the NBB should strengthen its systemic risk assessment framework by closing gaps and ensuring stronger integration of data and quantitative tools with instrument design and selection.* A more holistic and structural approach should be contemplated to better gauge the transmission of macro-financial risks to individual financial intermediaries and to better detect financial sector spillovers. This would also help select and calibrate the macroprudential instruments most suitable to contain the vulnerabilities identified through the assessment. Moreover, opportunities should be explored to further expand, integrate and leverage the data sources available to the NBB.

- *the FSMA's framework for the analysis of structural vulnerabilities of investment funds should be enhanced and integrated into the NBB's systemic risk assessment.* The FSMA should fully exploit the granularity of available data on the investment fund sector while continuing to source additional information. Besides, regular stress testing of investment funds should become part of the toolkit. Lastly, the FSMA's analysis of the non-bank financial sector should be more tightly integrated into the NBB's framework to detect systemic risks to regularly take stock of emerging vulnerabilities and identify potential spillovers to other financial intermediaries.

- *the NBB should consider introducing a positive neutral CCyB and modify its CCyB framework accordingly*. Switching to a positive neutral rate could facilitate CCyB activation in an environment of repeated economic shocks and high macro-financial uncertainty. In addition, it may bolster financial sector resilience against sudden and unexpected strains that are unrelated

to the credit cycle and may entice banks hesitant to eat into regulatory buffers at times of stress to make use of capital that was explicitly maintained and can be released for that purpose.

- *the NBB should consider instituting a SSyRB against CRE-related bank lending once its appropriate calibration on the basis of yet to be collected additional data can be performed.* In view of the sizeable exposures of banks to CRE risk, a dedicated buffer to absorb potential losses if credit impairments materialize should be contemplated once the necessary elements for appropriate SSyRB calibration are in place. In this regard, available CRE data need to be complemented by further information about the characteristics of the CRE portfolios of banks and the quality of the collateral underlying CRE loans.

Table 1. Belgium: Recommendations on Macroprudential Policy Framework[1]

Recommendations		Agency	Time[2]
	A. Institutional Arrangements		
1.	In the medium-term, align the powers of the NBB to set macroprudential policy at the national level with its current financial stability mandate by giving it full discretion over the activation and calibration of capital- and borrower-based instruments, without the need for government approval. In the near-term, the activation and calibration of capital-based measures under CRD/CRR should be at the sole discretion of the NBB at the national level, without the need for government approval.	Government	MT, NT
3.	For the activation, recalibration and extension of macroprudential policy instruments requiring government intervention, strengthen accountability by publishing the factors weighing on policy considerations and decisions.	NBB, Government	NT
	B. Systemic Risk Monitoring		
4.	Strengthen the NBB's systemic risk assessment framework for setting macroprudential policy by closing gaps and ensuring stronger integration of data and quantitative tools with instrument design and selection.	NBB	MT
5.	Enhance the FSMA's framework for the analysis of structural vulnerabilities of investment funds and integrate it more closely into the NBB's systemic risk assessment.	NBB, FSMA	NT
	C. Tools and Calibration		
6.	Consider the introduction of a positive neutral CCyB and modify the CCyB framework accordingly.	NBB	NT
7.	Consider the introduction of a SSyRB against CRE-related bank lending once additional data are collected to ensure an appropriate calibration.	NBB	NT

1/ In this Technical Note, government should be understood to imply the Ministry of Finance, Ministry of the Economy, or the Council of Ministers with the authority over the relevant macroprudential policies as outlined in Table 2.

2/ I = Immediate (within one year); NT = Near Term (within 1 to 3 years); MT=Medium Term (within 3 to 5 years).

INTRODUCTION[1]

1. Since the global financial crisis, the need to complement microprudential supervision with macroprudential policies to contain systemic risks has become widely accepted. Indeed, vulnerabilities accruing at a system-wide level, such as rising household and corporate debt or the accumulation of riskier exposures in search for yield, have the potential to threaten financial stability in the event of macro-financial shocks, even if financial institutions appear resilient on an individual basis. Therefore, macroprudential policies have been increasingly recognized as a useful means to prevent the accumulation of systemic vulnerabilities and to create buffers for the absorption of shocks to avoid an undue disruption of financial intermediation during episodes of stress.

2. Belgium's financial system needs a strong macroprudential framework. As part of a monetary union, Belgium is subject to a single monetary policy, yet its financial conditions and credit developments can differ from those in other euro area countries, opening an important role for macroprudential policy to safeguard financial stability as it can be primarily set at the national level. Moreover, structural features of the financial system, such as the large presence of foreign-owned institutions and sizeable exposures to real estate markets, call for a well-developed macroprudential policy framework to appropriately address associated risks. Lastly, a possible buildup of systemic risks may have remained under the surface during the extended period of low interest rates but may become visible in the context of rapidly tightening financial conditions, underscoring the need for macroprudential policy to remain vigilant, agile and ready to flexibly react to a fast-changing environment.

3. Several recommendations of the 2018 FSAP on macroprudential policy have been implemented yet the institutional framework has remained unchanged. As the designated macroprudential authority, the National Bank of Belgium (NBB) has made considerable strides to improve its communication about financial stability issues and related macroprudential policy decisions. In addition, data coverage and analysis of CRE markets has improved notably, allowing for a more comprehensive assessment of potential risks for financial sector exposures. Besides, the NBB has worked towards streamlining of the EU notification process for macroprudential policy approval. Finally, the NBB and the Financial Services and Markets Authority (FSMA) have strengthened the monitoring of the non-bank financial sector by closing data gaps and conducting periodic joint risk assessments. At the same time, the recommendation to enhance the NBB's ability to implement flexible, risk sensitive macroprudential tools, without Minister of Finance / Council of Ministers approval has not been implemented. The power to adopt borrower-based tools and to enact by Royal decree the activation or modification of other macroprudential instruments remain the domain of the Ministry of Finance or the Council of Ministers. As a result, improvements in this area

[1]This technical note was prepared by Andre Geis (EUR) and Lu Zhang (MCM). The review was conducted during the period of June 12th-24th, 2023, and considers the legal and regulatory framework in place and the practices employed at the time. The mission team would like to thank the National Bank of Belgium, the Cabinet of the Ministry of Finance, the FSMA and representatives from the banking sector for their excellent cooperation and fruitful discussions.

were limited to the NBB strengthening its interaction with the government to ensure the successful passage of its macroprudential policy decisions.

4. Against this backdrop, this technical note reviews Belgium's macroprudential policy framework and offers recommendations to strengthen it. Section II evaluates the current institutional arrangements and provides recommendations. Section III reviews the framework for systemic risk monitoring and suggests options to enhance it. Section IV assesses the different types of systemic risks, discusses availability of macroprudential instruments, and proposes a set of recommendations. Some of these recommendations are restated in the Aide Memoire (AIM).

INSTITUTIONAL FRAMEWORK

5. Robust institutional arrangements are essential for the effective functioning of macroprudential policy. They should ascertain:

- a *willingness to act* by the institutions endowed with macroprudential policy authority through clear mandates and accountability frameworks including communication tools. The preeminent aim for the design of such mandates and frameworks should be to overcome inaction bias, the possibility of late or insufficient mitigation of mounting systemic financial sector risks due to the costs of measures being generally earlier and more readily observable than the usually long-term, and frequently unobservable, benefits.

- an *ability to act* by ensuring the availability of appropriate information to monitor and analyze systemic financial sector risks, adequate powers for the institutions endowed with macroprudential policy authority to activate and calibrate instruments suitable to counter a build-up of systemic financial sector risks, and the possibility to change the regulatory perimeter to encompass all entities that may contribute to systemic financial sector risks.

- *effective cooperation and coordination* between institutions with a role to play to ensure financial stability to guarantee the comprehensive assessment and mitigation of systemic financial sector risks across domestic and international agencies.

This section evaluates the current institutional arrangements in Belgium against these three key principles.

A. Willingness to Act

6. Within Europe, macroprudential policy is guided by separate yet interlocking bodies of legislation at the European and national level.

- In the *European Union*, the Capital Requirements Directive (CRD)[2] and the Capital Requirements Regulation (CRR)[3] provide the guardrails for macroprudential policy measures applied to the banking sector in EU Member States, aiming for a harmonized approach across jurisdictions to ensure a level playing field while also leaving room to address national concerns. The CRD delineates a framework for the setting of various capital buffers (Title VII, Chapter 4), including the capital conservation buffer (CCoB), the countercyclical capital buffer (CCyB), the global and other systemically important institutions buffers (G-SII and O-SII buffers) and systemic risk buffers (SyRB).[4] The CRR complements by specifying capital requirements along various risk dimensions (Part 3),[5] the treatment of large exposures (Part 4) as well as liquidity (Part 6) and leverage (Part 7) requirements. In addition, the CRR also contains provisions (Article 458) allowing for flexibility by national authorities if systemic risks are deemed to be only insufficiently addressed by the macro- and micro-prudential tools set out in the CRD/CRR.[6]

- In *Belgium*, the provisions of CRD/CRR are reflected in the Law on the Legal Status and Supervision of Credit Institutions (the Banking Law)[7] and the Law Establishing the Organic Statute of the National Bank of Belgium (the Organic Law)[8] after it had been modified by The Law Establishing the Mechanisms of a Macroprudential Policy and Spelling out the Specific Tasks Devolved to the National Bank of Belgium (the Macroprudential Law).[9] The Organic Law provides the legal basis for macroprudential instruments available under Belgian law, also encapsulating measures that are not incorporated into CRD/CRR.[10] Macroprudential tools at the

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[2] See https://eur-lex.europa.eu/eli/dir/2013/36/2022-01-01.

[3] See http://data.europa.eu/eli/reg/2013/575/2023-01-01.

[4] The SyRB can take the form of a general systemic risk buffer (GSyRB), applying to all exposures of a bank, or of a sectoral systemic risk buffer (SSyRB), applying only to some exposures (e.g., mortgages collateralized by residential real estate). Moreover, SyRBs can be applied to all banks or only a subset of them.

[5] They include credit risk (Title II), operational risk (Title III), market risk (Title IV), settlement risk (Title V) and credit valuation adjustment risk (Title VI).

[6] However, such leeway is relatively narrowly circumscribed with national discretions granted only for (i) the level of own funds and the CCoB, (ii) large and intra-financial sector exposures, (iii) liquidity requirements, and (iv) risk weights applying to real estate exposures.

[7] See Loi relative au Statut et au Contrôle des Etablissements de Credit of April 25th, 2014, last amended on July 20th, 2022. The EU Directives corresponding to other parts of the financial sector are codified in Loi relative aux Assurances of April 30th, 2014, and Loi relative au Statut et au Contrôle des Entreprises d'Assurance ou de Réassurance of March 13th, 2016 (insurers), Loi relative aux Organismes de Placement Collectif qui Répondent aux Conditions de la Directive 2009/65/CE et aux Organismes de Placement en Créances of August 3rd, 2012, Arrêté Royal relatif aux Organismes de Placement Collectif qui Répondent aux Conditions de la Directive 2009/65/CE of November 12th, 2012, and Loi Relative aux Organismes de Placement Collectif Alternatifs et à leurs Gestionnaires of April 19th, 2014 (investment funds), and Loi relative au Contrôle des Institutions de Retraite Professionnelle of October 27th, 2006 (occupational pension funds).

[8] See Loi Fixant le Statut Organique de la Banque Nationale de Belgique (Coordination Officieuse: Août 2022) of 22 February 1998.

[9] See Loi Etablissant les Mécanismes d'une Politique Macroprudentielle et Précisant les Missions Spécifiques Dévolues à la Banque Nationale de Belgique dans le Cadre de sa Mission Visant à Contribuer à la Stabilité du Système Financier of 25 April 2014.

[10] See Organic Law, Article 36/34.

disposal of the authorities include (i) setting requirements for capital and liquidity buffers as well as for leverage, minimum funding and disclosures, (ii) putting limits on exposures and profit distribution, (iii) establishing rules for asset valuation and the assessment of collateral, and (iv) imposing borrower-based measures.

7. Outside the banking system, European macroprudential policy frameworks are little developed. For insurers, the Solvency II Directive has a microprudential focus and offers rather limited room for targeting systemic risks in the sector. Still, some of its elements reflect macroprudential considerations, such as the provisions requiring the review of long-term guarantees measures and measures on equity risk.[11] Additionally, proposals for its review foresee the incorporation of macroprudential objectives and associated tools.[12] EU Directives for the investment fund industry and occupational pension funds provide only sparse or no macroprudential policy levers. For collective investment schemes in transferable securities, the UCITS Directive allows suspending the redemption of investment fund shares if deemed in the interest of the investors or the public.[13] For alternative investment fund schemes, the AIFM Directive enables the imposition of leverage limits.[14] Finally, the IROP II Directive for occupational pension funds offers no scope for macroprudential policy.[15]

8. The powers to implement macroprudential measures enshrined in EU legislation are a shared competency between national and European authorities. Nonetheless, responsibility lies primarily at the national level, specifically as regards the development of a framework to guide macroprudential policy and deciding about the activation and modification of macroprudential instruments. While the EU's macroprudential authority, the European Systemic Risk Board (ESRB), has provided direction about appropriate institutional arrangements[16] as well as intermediate objectives and instruments[17] to achieve desired financial stability outcomes, EU Member States are facing only limited constraints as long as the legal provisions of CRD/CRR are respected. As a result, a range of different models have emerged which make use of the macroprudential instruments

[11] See http://data.europa.eu/eli/dir/2009/138/2021-06-30, Article 77f.

[12] See, for instance, https://www.eiopa.europa.eu/system/files/2020-12/eiopa-bos-20-749-opinion-2020-review-solvency-ii.pdf.

[13] See http://data.europa.eu/eli/dir/2009/65/2023-01-01, Article 84.

[14] See http://data.europa.eu/eli/dir/2011/61/2021-08-02, Article 25.

[15] See http://data.europa.eu/eli/dir/2016/2341/oj.

[16] See ESRB (2011): "Recommendation of the European Systemic Risk Board of 22 December 2011 on the Macro-prudential Mandate of National Authorities (ESRB/2011/3)", December, recommending EU Member State to designate a macroprudential authority in their national legislation, also reflected in the provisions of the CRD. Such an authority should take the form of a single institution, or a board composed of all institutions affecting financial stability and be given the powers to conduct macroprudential policy on its own initiative or following recommendations and warnings by the ESRB.

[17] See ESRB (2014): "Flagship Report on Macro-prudential Policy in the Banking Sector", March, and ESRB (2018): "The ESRB Handbook on Operationalising Macroprudential Policy in the Banking Sector", January. More recently, the ESRB has also contributed to the ongoing review of the EU's macroprudential framework, see ESRB (2022): "Review of the EU Macroprudential Framework for the Banking Sector – A Concept Note", March.

offered by CRD/CRR and attribute macroprudential powers across various institutions or bodies according to country circumstances.[18]

- At the *national level*, the Macroprudential Law designates the NBB as the sole macroprudential authority, complementing its role as the microprudential supervisor of credit institutions, (re-) insurances and a set of other providers of financial services.[19] In addition, it has the power to make recommendations to national and European authorities to safeguard financial stability if the identified systemic risk falls outside its regulatory perimeter.[20] Such recommendations can be rather broad and may also include changes to the taxation regime or the introduction of legally binding regulations or efforts to broaden the regulatory perimeter to encompass additional entities. The Organic Law requires the national authority subject to a recommendation to inform the NBB about the measures taken in response and to provide justification in case of non-compliance.[21] The FSMA – while not holding any macroprudential powers of its own – is responsible for the supervision of financial markets, occupational pension schemes as well as financial service providers and intermediaries not falling under the remit of the NBB, most notably investment funds. Moreover, the FSMA is tasked with issues of consumer protection and business conduct. Finally, the Organic Law endows the government with decision power over borrower-based measures.[22]

- At the *European level*, Article 5(1) of the Single Supervisory Mechanism (SSM) Regulation requires macroprudential authorities in the euro area to inform the European Central Bank (ECB) prior to taking any decision to give it the possibility for review and objection.[23] Article 5(2) allows the ECB to impose more stringent requirements on banks than national authorities for any macroprudential policy instruments falling under CRD/CRR, with the primary aim of preventing inaction bias.[24] Moreover, the ESRB has the possibility to issue non-binding warnings and recommendations covering risks in the financial sector in its entirety, with a recommendation triggering a legal obligation by the concerned national authority to react by following a "comply or explain" approach. Furthermore, the ECB and the ESRB are compiling (non-public) macroprudential (ECB) and – less extensive – country risk assessment (ESRB) reports which review systemic financial sector risks and the macroeconomic policy stance in jurisdictions within

[18] On its website, the ESRB provides an overview of the authorities tasked with macroprudential policy in the European Economic Area and of the macroprudential instruments presently (and historically) in use.

[19] These include central securities depositories and custodian banks, including institutions providing support to them and central clearing counterparties, payment and electronic money institutions, stockbrokerages, and surety companies.

[20] See Organic Law, Article 36/35.

[21] See Organic Law, Articles 36/39-40.

[22] See Organic Law, Article 36/38.

[23] The ECB has the option to object to a macroprudential policy decision taken by a national authority yet needs to provide a written justification for doing so within five working days. The national authority concerned has to take the ECB's view into account yet can still incorporate its decision as it deems appropriate.

[24] See http://data.europa.eu/eli/reg/2013/1024/oj.

their remit. Lastly, the ESRB also develops guidelines, recommendations and opinions about the use of particular macroprudential policy instruments.

9. Legislation provides the NBB with a clear financial stability mandate that is elaborated on in legal provisions and policy documents. The Organic Law defines the stability of the financial system as a "situation where the probability of discontinuity or disruption in the financial system is low or, if such disruptions should occur, where the consequences for the economy would be limited."[25] Whereas the NBB and the government agree on this definition, the Organic Law obliges only the NBB to "[…] detect, assess and monitor […] factors which may affect the stability of the financial system […]" and to "[…] contribute to the stability of the financial system […] through strengthening [its] robustness […], preventing the occurrence of systemic risks and limiting the effect of potential disruptions […]" while also granting it the independence to fulfill its mandate.[26] By contrast, neither the Organic Law nor other legislation give a sense of direction to the government as concerns the considerations it should take into account when deciding about any borrower-based measures under its control.[27]

10. The NBB is accountable to parliament and communicates extensively with macroprudential stakeholders as well as the general public. The NBB's accountability is specified in the Organic Law, mandating it to report to parliament and opening the possibility for the NBB Governor to testify in parliament, either on request or on her/his own initiative.[28] To meet accountability requirements, the NBB sends to parliament its Annual Report, containing key financial stability messages, as well as its annual Financial Stability Report (FSR) which also includes its Macroprudential Policy Report (MPR). The FSR and the MPR elaborate jointly and comprehensively on financial sector developments and risks, offer an overview of macroprudential policy decisions, including information about their rationale and design, and report on activities to further develop the macroprudential policy framework. In addition, the FSMA and the NBB are also compiling an annual report on non-bank financial intermediation in Belgium and associated risks.[29] The Banking Law contains provisions obliging the NBB to report and justify its quarterly decisions about the CCyB[30] as well as its annual designations of G-/O-SIIs and the associated buffer requirements.[31] Periodic reporting is complemented by ad-hoc publications providing background on elements of macroprudential policy, like the institutional framework[32] or the strategy for setting the CCyB,[33] and

[25] See Organic Law, Article 36/32 §2 1°.

[26] See Organic Law, Article 12 §1.

[27] See Organic Law, Article 36/38 §2.

[28] See Organic Law, Article 28.

[29] For the latest edition, see FSMA and NBB (2022): "Update on Asset Management and Non-Bank Financial Intermediation in Belgium", November.

[30] See Banking Law, Annex IV, Article 5

[31] See Banking Law, Annex IV, Article 15.

[32] See NBB (2023): "The Belgian Macroprudential Policy Framework for the Banking Sector", March.

[33] See NBB (2022): "Setting the Countercyclical Buffer Rate in Belgium: A Policy Strategy".

in-depth studies with a macroprudential policy focus. Finally, the NBB maintains extensive outreach by engaging in (non-)technical communication with macroprudential stakeholders, such as the financial sector, and the general public via in-person meetings, press releases and press conferences, webinars, blog entries and the preparation of Q&As. Importantly, the NBB has also strengthened its exchange of information and communication with the government as the ultimate arbiter over macroprudential policy to ascertain early buy-in and smooth passage of its decisions.

B. Ability to Act

11. The government retains considerable influence on macroprudential policy (see Table 2). Apart from maintaining hard powers over the adoption of borrower-based measures, the activation and modification of other macroprudential instruments are subject to approval by the Minister of Finance or the Council of Ministers before they can come into force via enactment by Royal Decree. Such an arrangement is unusual in a European context with most countries under the remit of the ESRB putting such decision powers in the hands of the central bank, the supervisory authority or some sort of financial stability committee. Denmark, Liechtenstein and Norway are the only cases where a government ministry is the designated macroprudential authority. Leaving discretion over borrower-based measures in the hands of the government is somewhat more common, as shown by the examples of the Netherlands or Sweden. At the same time, the government relies heavily on the expertise of the NBB when assessing systemic financial sector risks and taking or approving macroprudential policy decisions.

Table 2. Belgium: National Decision Powers over Selected Macroprudential Policy Instruments

Instrument	Proposal	Approval
Capital measures		
CCyB	NBB	Ministry of Finance
CCoB	NBB via Art. 458 CRR	Council of Ministers
Leverage ratio	NBB via Art. 458 CRR	Council of Ministers
SyRB	NBB	Ministry of Finance
G-/O-SII buffers	NBB	Ministry of Finance
National flexibility measures via Art. 458 CRR	NBB via Art. 458 CRR	Council of Ministers
Liquidity measures		
Liquidity coverage ratio	NBB via Art. 458 CRR	Council of Ministers
Net stable funding ratio	NBB via Art. 458 CRR	Council of Ministers

Table 2. Belgium: National Decision Powers over Selected Macroprudential Policy Instruments (concluded)		
Borrower-based measures (hard powers)		
Loan-to-value ratio	Government (the King), on NBB advice	Council of Ministers
Debt-to-income ratio	Government (the King), on NBB advice	Council of Ministers
Source: NBB.		

12. There have been instances in the past when macroprudential policy measures recommended by the NBB have not been enacted by the government. For instance, a NBB proposal to strengthen capital buffers against residential mortgage lending and achieve a tightening of associated credit standards by imposing higher loss-given-default floors failed to obtain government consent in April 2017.[34] Moreover, the simultaneous expiration of risk weight add-ons that had been in existence since October 2013 to augment minimum capital requirements for residential mortgage portfolios required the NBB to ask banks to maintain the associated capital cushions until a new measure could be formally put in place in April 2018. Similarly, the NBB advocated to lower the maximum guaranteed rate of return on life insurance products between 2017 and 2022 to safeguard the profitability and solvency of insurers in the context of the low yield environment at the time. Its non-binding advice was not followed by the government as the envisaged maximum would have been below the minimum rate of return employers were obliged to provide on defined contribution occupational pension schemes, thereby representing an additional financial burden for them. Such disagreements demonstrate that the considerable influence the government has over macroprudential policy complicates the NBB's task to respond to systemic financial sector risks and has the potential to delay or avert the adoption of the appropriate policy stance.

13. The NBB and FSMA have successfully navigated the constraints implied by the macroprudential framework by making more extensive use of semi-hard and soft powers. Constituting a use of semi-hard powers, the NBB has adopted "prudential expectations" in 2020 to discourage riskier forms of residential mortgage lending, obliging banks and insurance companies to meet a set of maximally permissible loan-to-value (LTV), debt-service-to-income (DSTI) and debt-to-income (DTI) ratios or provide justification for any deviations. By following such a "comply or explain" mechanism, these measures have helped mitigate vulnerabilities while also taking potential distributional concerns into account.[35] Moreover, by proactively communicating about measures fully under NBB control, political buy-in about macroprudential policy decisions was obtained also in cases where their enactment did not require a Royal decree. As an example of the deployment of

[34] The NBB's initiative was also a reaction to ESRB (2016): "Warning of the European Systemic Risk Board of 22 September 2016 on Medium-Term Vulnerabilities in the Residential Real Estate Sector in Belgium", September.

[35] In particular, the impact of the measures on the ability of first-time buyers to purchase a home was a concern.

soft powers, the NBB has weighed on banks and insurance companies not to lengthen mortgage maturities during the extensive period of low interest rates to lessen the debt servicing capacity (principal and interest payments) of households, a policy that has recently been reversed with the opposite effect to cushion the impact of higher interest rates. Outside the banking sector, FSMA has successfully guided publicly offered Belgian open-ended investment funds to allow for liquidity management tools in their contract documentations despite no existing legal requirement.[36] Although such measures lack the heft of hard powers, they have the advantage of expanding the regulatory perimeter to parts of the financial sector without an (internationally) established macroprudential policy framework (insurances, investment funds) and do not require legislative action to become – and be – effective.

14. The NBB has sufficient capacity to obtain information enabling it to fulfill its macroprudential mandate. The Organic Law gives the NBB wide-ranging powers to request the information required to contain systemic financial sector risks.[37] Next to allowing the NBB to make use of information gained under its statutory tasks, such as microprudential supervision, the Organic Law also permits the NBB to source information from private sector entities outside its regulatory perimeter, either directly or via the authorities responsible for such entities.[38] While no formal arrangements are in place to ensure the sharing of information by the government and other national authorities, the Organic Law stipulates their co-operation to provide the NBB with any information and expertise necessary to exercise its tasks.[39] In addition, a protocol between the NBB in FSMA foresees the possibility to exchange confidential information if needed.

C. Effective Coordination and Cooperation

15. Tight economic and financial integration led European countries to establish mechanisms to ensure close coordination of macroprudential policies. Structures and procedures are in place to guarantee that national macroprudential authorities can achieve their desired policy stance, to avoid undesirable cross-border spillovers of un-coordinated macroeconomic policy actions and to sustain a level playing field across the single market. Exchange of information and analysis related to macroprudential policy issues take place across a range of working groups and committees at the ECB and the ESRB.[40] In addition, the ESRB serves as a crucial hub for collecting and communicating policy decisions taken by national macroprudential

[36] By assets, nearly all open-ended investment funds that are publicly offered in Belgium and are subject to FSMA's recommendation to allow for the possible use of liquidity management tools have adopted either an anti-dilution levy, a redemption gate, swing pricing or a combination of the three, putting the industry ahead of comparators in other countries.

[37] See Organic Law, Article 36/33.

[38] See Organic Law, Article 36/33 §2.

[39] See Organic Law, Article 36/33 §3.

[40] Analytical and policy-oriented working groups at a technical level include the Macroprudential Analysis Group and Macroprudential Policy Group at the ECB and the Analysis Working Group and Instruments Working Group at the ESRB. Their findings are further discussed in the Financial Stability Committee of the ECB and the Advisory Technical Committee of the ESRB and decided upon at the ECB's Governing Council and the ESRB's General Board.

authorities in its constituent countries, also to ascertain the mutual recognition of macroprudential policy measures across its membership.[41]

16. Uniting macroprudential authority in a single institution implies synergies yet the powers of the government over policy decisions imply additional coordination efforts. With the NBB being the sole designated macroprudential authority, effective coordination and cooperation mainly become a matter of internal organizational structures. In this regard, the NBB has set up a Risk Team Macroprudential Policy (RT MPP) which, at a technical level, successfully combines inhouse expertise across relevant functional departments for the identification of systemic risks and the assessment of potential macroprudential policy options.[42] The discussions of the RT MPP are the precursor of meetings of the Macro-Financial Committee (MFC) where the heads of the departments represented in the RT MPP deliberate the RT MPP's risk assessment from a policy perspective with the aim of recommending appropriate policy actions for decision by the NBB's Board of Directors. This hierarchy closely mimics corresponding arrangements at the ECB and the ESRB, thereby also promoting an efficient mode of collaboration with both supranational institutions.[43] The FSMA is closely collaborating with the NBB about issues within its competence, especially as regards the investment and pension fund sectors. For this purpose, the FSMA and the NBB maintain a forum to exchange views about developments and vulnerabilities among non-bank financial institutions and the FSMA participates in the NBB's internal briefings for meetings of the ESRB General Board.[44] In light of the clout the government enjoys over macroprudential policy, the NBB has intensified efforts to ensure the seamless endorsement of its decisions, thereby achieving approval of all capital-based measures since the 2018 FSAP. Specifically, it strives to convey its deliberations about systemic risks and its rationale for the consideration, activation or extension of particular macroprudential policy instruments at an early stage yet without following a formal protocol.

Recommendations

17. The 2018 FSAP recommendation is reiterated to grant the NBB, in the medium term, the full power to set macroprudential policy, without the need for government approval.

[41] Belgium details the relevant ESRB notification procedures in Annex IV of the Banking Law, including for the CCyB (Article 5 §7), the O-SII buffers (Articles 14 and 15), any SyRB adopted (Articles 17 to 20) and CRR Article 458 measures (Article 97).

[42] Staff from the "Macroprudential Surveillance" unit in NBB's Financial Stability Department play a key role in the RT MPP but it also involves staff from the "Prudential Policy and Financial Stability", "Prudential Supervision of Banks and Stockbroking Firms", "Prudential Policy and Inspection Insurance", "Surveillance of Financial Market Infrastructures, Payment Services and Cyber Risks", "Prudential Supervision of Insurance and Reinsurance Companies", "Legal", "Analysis and Research", "Financial Markets", "Statistics", and "Microeconomic Information" departments.

[43] The NBB's RT MPP has its counterparts in the Macroprudential Analysis Group and Macroprudential Policy Group of the ECB and the Analysis Working Group and Instruments Working Group at the ESRB. The MFC finds its match in the Financial Stability Committee (ECB) and the Advisory Technical Committee (ESRB). The Governor of the NBB or her/his representative is participating and has a vote in the ECB Governing Council and the ESRB General Board, the equivalents to the NBB's Board of Directors.

[44] The FSMA is also taking part in the ESRB's expert group on non-bank financial intermediation and the FSMA Chairman is a non-voting member of the ESRB General Board.

Government control over borrower-based measures is not unprecedented in Europe owing to possible distributional and socio-economic consequences of their adoption, although best practice suggests addressing such concerns by fiscal policy. However, the present macroprudential policy framework attributes a role to the government that may hamper the NBB to live up to its financial stability mandate by – legally and practically – weakening its ability to act. The NBB has navigated the constraints implied by the macroprudential framework by relying on semi-hard and soft powers, such as its adoption of "prudential expectations" on LTV and D(S)TI ratios, thereby also demonstrating that a balanced macroprudential policy can be achieved by consulting with the government, i.e., without giving it the last say over all decisions. In addition, the present powers of the government over macroprudential policy run the risk of political considerations trumping financial stability concerns, also since it has no formal financial stability mandate. Hence, vesting full discretion to adjust macroprudential policy with the NBB while retaining a consultative role for the government would improve the timely deployment of suitable measures to contain systemic risks.

18. In the near-term, the NBB should be granted the power to set CRD/CRR tools at the national level, without the need for government approval. Government influence on the macroprudential tools encompassed by CRD/CRR is less common in Europe and – in the few existing cases – is made explicit by leaving it in the hands of a ministry instead of the central bank or another entity, thereby improving transparency and accountability. In view of the NBB being the designated macroprudential authority in Belgium, full powers over CRD/CRR measures would put the framework on par with most other European countries and improve the NBB's ability to mitigate financial stability risks in a timely fashion.

19. Requiring renewed government approval of unmodified CRD/CRR measures should cease. The practice of the government having to approve the prolongation of active CRD/CRR instruments, even if their calibration is not set to change, should be abolished as it opens the door for the possible lapse of a measure out of political consideration which the NBB deems advisable to keep in place. Besides, it also maintains an administrative layer that appears unnecessary as EU legislation already stipulates a requirement for the re-approval of certain CRD/CRR tools at regular intervals.[45]

20. The government and the NBB should strengthen communication of the rationale for macroprudential policy decisions, including in the case of inaction. Communication by the NBB on the CCyB and O-SII buffers is strong, with the macroprudential framework requiring quarterly (CCyB) or annual (O-SII buffer) announcements outlining the factors underpinning their setting, even if no activation takes place or no changes are made. For the remainder of the toolkit, early communication by the NBB may be hindered by the need to obtain government approval before decisions can be conveyed to a wider audience, creating room for inaction and weakening transparency. Therefore, establishing a formal protocol for communication about all macroprudential policy decisions, including for instances where no action is taken, and publishing

[45] For instance, CRR Article 458 measures have a two-year expiration date and would need to be renewed thereafter.

the factors influencing the government's deliberations with a financial stability impact will help boost accountability and strengthen the transmission of macroprudential policies.

SYSTEMIC RISK MONITORING

21. Monitoring and evaluating systemic vulnerabilities in the financial sector are crucial for the appropriate and timely calibration of macroprudential policy. This section reviews and assesses the existing framework of systemic risk monitoring in terms of (i) the availability of adequate data and indicators, (ii) the use of quantitative methods to detect and analyze systemic risks, (iii) the relationship between systemic risk assessment and policy decisions.

A. Data Sources and Indicators

22. The NBB has copious access to a wide range of micro- and macro-financial data. It benefits from its role as microprudential supervisor of banks, insurance companies and financial market infrastructures, and its wide-ranging legal powers to obtain additional information if required to fulfill its mandate. Moreover, its collaboration with FSMA allows it to gain insight into developments at financial intermediaries outside its regulatory perimeter. Finally, a wide network of formal and informal contacts with financial market participants provides it with further intelligence. Apart from publicly available data sources, it also makes use of proprietary datasets. Most notably,

- for *households*, the NBB gathers detailed information about newly originated and defaulted mortgage and consumer loans by all types of lenders from the Central Individual Credit Register (CICR). However, the CICR gives no insight into the types and levels of interest charged, credit standards, such as loan-to-value or debt-service-to-income ratios, outstanding debt balances, debt servicing methods, borrower incomes or the underlying collateral. To remedy these shortcomings, the NBB has instituted a PHL (Prêts Hypothécaires / Hypothecaire Leningen) survey[46] which queries banks (half-yearly, since 2012) and insurers (yearly, since 2018) with significant mortgage lending operations about the characteristics of new and existing loans at the aggregate portfolio level. Further information is gained from a survey of the purpose of mortgage loans, microprudential reporting and the three-yearly Household Finance and Consumption Survey (HFCS)[47] which complements microlevel data about household incomes and assets in relation to their debt servicing obligations.

- for *non-financial corporations*, a Corporate Credit Register (CCR) reflecting the requirements of the ECB Regulation on AnaCredit became operational in 2022.[48] At a monthly frequency, it collects information about loans granted by credit institutions and leasing companies to legal entities and the professional activities of natural persons. The CCR offers granular information at the level of individual loans, including about credit terms and conditions, credit status and

[46] See NBB (2023): "Data Collection Residential Belgian Real Estate – Guidelines", April, for a detailed overview of the information surveyed.

[47] See https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html for an overview.

[48] See http://data.europa.eu/eli/reg/2016/867/oj.

events as well as credit protection.[49] Corporate solvency, liquidity and profitability is assessed with the help of the annual accounts filed by companies with the NBB's Central Balance Sheet Office (CBSO) and complemented by quarterly data about value-added tax returns which provide insight into corporate turnover, consumption of intermediates and profit margins.

- for *financial sector exposures other than loans*, the NBB relies on data reported under the European Market Infrastructure Regulation (derivatives exposures)[50] and the Securities Financing Transactions Regulation (securities financing),[51] the ECB's securities holdings statistics (equity and debt securities as well as investment fund shares), microprudential reporting by banks under the Common Reporting Framework (large exposures, concentration of funding, counterparty credit risk, securitizations) and Scheme A (securities investments) as well as by insurances under the Solvency II Directive (asset holdings), and the quarterly data provided by investment and pension funds on their securities holdings.

- for *commercial real estate* (CRE), the NBB has made considerable strides to improve data coverage by gathering information about market developments and financial sector exposures.[52] To gain a better understanding about trends in CRE markets, including transactions, prices and property characteristics, the NBB has tapped market intelligence and private data providers, most notably MSCI Real Capital Analytics.[53] Exposures by financial intermediaries to CRE-related risk via direct investment in physical property is sourced from MSCI Real Capital Analytics (all financial institutions) as well as from financial (real estate investment trusts) and prudential (insurances) reporting. Indirect exposures are gauged from the ECB's securities holdings statistics (all financial institutions), reporting under the Solvency II Directive by insurances and the information provided by banks under the financial reporting standards established by the European Banking Authority. The performance of non-financial corporations active in CRE-related industries is based on the annual accounts data from the NBB's Central Balance Sheet Office.

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[49] For an extensive overview of the available information, see ECB (2019): "AnaCredit Reporting Manual – Part I – General Methodology", May, and ECB (2017): "AnaCredit Reporting Manual – Part II – Datasets and Data Attributes", February.

[50] See http://data.europa.eu/eli/reg/2012/648/2022-08-12 and https://www.esma.europa.eu/data-reporting/emir-reporting.

[51] See http://data.europa.eu/eli/reg/2015/2365/2022-08-12 and https://www.esma.europa.eu/data-reporting/sftr-reporting.

[52] Thereby, the NBB has followed-up on past recommendations by the ESRB (see ESRB (2016): "Recommendation of the European Systemic Risk Board of 31 October 2016 on Closing Real Estate Data Gap (ESRB/2016/14)", October, and ESRB (2019): "Recommendation of the European Systemic Risk Board of 21 March 2019 Amending Recommendation ESRB/2016/14 on Closing Real Estate Data Gaps (ESRB/2019/3)", March) and the IMF (see IMF (2018): "Belgium: Financial System Stability Assessment", March).

[53] The ECB's experimental indicators on commercial property prices, valuation-based series that are still confidential, are also compiled with the support of MSCI Real Capital Analytics.

B. Quantitative Methods

23. To leverage the utility of its data sources, the NBB is employing a range of quantitative approaches to assess the state of the financial cycle and detect systemic risks. Specifically,

- a color-coded heatmap processing a wide array of macro-financial indicators is used to identify the potential build-up and the materialization of systemic risks to provide a basis for further in-depth analysis and policy discussion. Thresholds triggering different degrees of alert are calibrated with the help of statistical distributions derived from past indicator values in Belgium or a representative sample of economies, limits set by legislation, regulatory guidelines for example, as well as model-based approaches and expert judgement.[54]

- a financial conditions index enables an assessment of the state of the financial cycle and the possible emergence of systemic risks. It summarizes 17 indicators into five sub-categories capturing the evolution of credit and private sector debt, developments in real estate and financial markets as well as banking sector conditions while also accounting for the co-movement of the sub-categories with each other.[55]

- an early warning framework is used to connect the state of the financial cycle with the probability of financial crisis. The approach employs a suite of models predicting financial crises for various permutations of cyclical and structural variables capturing developments in credit and real estate markets in a sample of countries to compute a set of country-specific crisis thresholds. These thresholds are then applied to sort model outcomes into risk buckets to obtain an assessment of the evolution of cyclical systemic risk and its intensity. In an extension, model results are also exploited to project the development of the non-performing loan (NPL) ratio in Belgium.

- tools have been developed to project the flow of loan loss provisions on the domestic credit portfolios of Belgium's six largest banks based on scenarios that can be applied to a set of six macroeconomic variables, also with the intention to support the calibration of capital buffers, and to assess shifts in yield curves on the net interest rate margins of banks.

- a valuation model for residential real estate links the level of real house prices to an array of fundamental factors, including real household disposable incomes, real mortgage interest rates, the number of households and a set of dummy variables to account for changes to the tax regime.[56]

[54] For a more detail, see Dumont, L. and S. Ferrari: "A Risk Dashboard for Detecting and Monitoring Systemic Risk in Belgium", in: NBB (2019): "Financial Stability Report 2019", pp. 129-148, June.

[55] For more detail, see Cordemans, N., Tielens, J. and C. Van Nieuwenhuyze: "Are we Riding the Waves of a Global Financial Cycle in the Euro Area?", in: NBB (2019): "Economic Review September 2019", pp. 97-122, September.

[56] For more detail, see C. Warisse: "Analysis of the Developments in Residential Property Prices: Is the Belgian Market Overvalued?", in: NBB (2017): "Economic Review June 2017", pp. 61-77, June.

24. The FSMA has strengthened its data analytics and stress testing frameworks. For instance, it has developed a surveillance tool based on market transaction data to detect potential insider trading, has used web scraping techniques to investigate consumer protection issues and has performed data-driven analysis of retail investor behavior, potential "closet indexing" by actively managed investment funds as well as potential greenwashing by asset managers. It also executes a quarterly assessment of risks originating from leveraged alternative investment funds. As the result of a new data sharing agreement with the NBB, it employed granular information about the portfolios of investment funds to take stock of asset positions and conduct a pilot liquidity stress test.

C. Systemic Risk Assessment and Policy Decisions

25. The NBB combines information from macro-financial indicators and quantitative tools with expert judgment to arrive at a comprehensive biannual systemic risk assessment. Systemic risks are appraised from two angles which cross-fertilize each other: on the one hand, a bird's-eye view attempts to detect potential financial stability risks, centered on the impact of macro-financial developments on the solvency, profitability and liquidity of banks, insurances and financial market infrastructures. The NBB's quantitative tools complement this approach by providing information about the state of the financial cycle and its implications for the quality of loan portfolios, changes in the macro-financial environment that may warrant particular attention and asset valuations. On the other hand, a view from below adds institution- or sector-specific insights gained from the NBB's role as microprudential supervisor. Findings are condensed into a summary forming the basis for discussions about the potential adoption of macroprudential policy measures. It gives a qualitative and/or quantitative evaluation of the likelihood for the occurrence of each cyclical or structural vulnerability as well as its materiality for different parts of the financial sector, accompanied by an assessment of whether any of the identified risks have materialized. The biannual exercise is supplemented by regular as well as ad-hoc analyses of particular relevance, such as the impact of the energy efficiency of buildings on real estate valuations, and an annual risk review determining supervisory priorities and the allocation of resources.

26. To operationalize macroprudential policy, the NBB has given its intermediate objectives a quantitative dimension and mapped them into available instruments. To help with the pursuit of its financial stability mandate, the NBB has followed the ESRB recommendation to establish intermediate objectives of macroprudential policy, defined as (i) the mitigation and prevention of excessive credit growth and leverage, (ii) the mitigation and prevention of excessive maturity and liquidity transformation, (iii) the limitation of direct and indirect exposure concentration, and (iv) the limitation of the systemic impact of misaligned incentives with a view to reducing moral hazard.[57] To quantify these objectives, the NBB has grouped its macro-financial indicator heatmap into four buckets associated with each of them.[58] Macroprudential policy

[57] See ESRB (2013): "Recommendation of the European Systemic Risk Board of 4 April 2013 on Intermediate Objectives and Instruments of Macro-prudential Policy (ESRB/2013/1)", April.

[58] See again Dumont, L. and S. Ferrari: "A Risk Dashboard for Detecting and Monitoring Systemic Risk in Belgium", in: NBB (2019): "Financial Stability Report 2019", pp. 129-148, June.

instruments were also linked to the chief intermediate objective they are targeting (see Table 3), without prejudice to a measure also contributing to the achievement of a second or several intermediate objectives.

Table 3. Belgium: Operationalization of Macroprudential Policy

Intermediate objective	Main instruments at NBB disposal	
	Instrument category	**Instrument type**
Mitigation and prevention of…		
…excessive credit growth and leverage	Capital requirement	• Countercyclical capital buffer • Systemic risk buffer • Sectoral capital requirements • Leverage ratio
	Lending limit	• Borrower-based measures (recommendations or prudential expectations) • Large exposure limits
…excessive maturity and liquidity transformation	Liquidity requirement	• Net stable funding ratio • Liquidity coverage ratio
Limitation of…		
…direct and indirect exposure concentration	Capital requirement	• Sectoral capital requirements • Systemic risk buffer • Leverage ratio
	Lending limit	• Borrower-based measures (recommendations or prudential expectations) • Large exposure limits
…the systemic impact of misaligned incentives with a view to reducing moral hazard	Capital requirement	• Global systemically important institutions buffer • Other systemically important institutions buffer • Systemic risk buffer • Leverage ratio
	Liquidity requirement	• Net stable funding ratio • Liquidity coverage ratio

Source: NBB.

Recommendations

27. The NBB should explore opportunities to further integrate and leverage its plethora of available data sources to enrich and complete its analysis of systemic risks. Recent analytical work by the NBB has investigated the impact of wage and energy price pressures on corporate profitability[59] which was expanded on in the NBB's Financial Stability Report by examining banking

[59] See Bijnens, G. and C. Duprez (2022): "Les Firmes et la Hausse des Prix Energétiques", May, and Bijnens, G. and C. Duprez (2023): "Firmes, Prix et Marges", January.

sector exposures to energy-intensive industries.[60] Likewise, a study about the impact of the energy efficiency of residential dwellings on house prices[61] was exploited further by scrutinizing associated risks for the mortgage portfolios of banks[62] and considering the implications for the risk management strategies of banks.[63] Such cross-fertilization of work is welcome and should be intensified to arrive at a fuller picture about systemic risks the financial sector is confronted with. For instance, information about the liquidity or leverage of firms from the CBSO or the income and wealth characteristics of households from the HFCS could offer useful additional insights about the resilience of household and corporate balance sheets and – by extension – the associate risks for the quality of financial sector exposures. Similarly, the various data sources available to gain an understanding of the interconnectedness of financial intermediaries to each other as well as to counterparts outside the financial sector or abroad should be taken advantage of to the maximum extent possible to identify channels of spillovers and contagion. Lastly, the considerable pool of data collected by the NBB to assess developments and risks in commercial real estate markets should be integrated more firmly to arrive at a holistic view of potential vulnerabilities and to detect remaining gaps.

28. The NBB's framework to assess systemic risks for the setting of macroprudential policy could be strengthened, also with the help of additional quantitative tools. At present, the NBB follows primarily a risk-by-risk approach to gauge systemic vulnerabilities with the focus at times rather on probability than materiality of risks. In addition, the NBB's framework mostly provides only limited guidance about concrete criteria for the selection, activation and adjustment of macroprudential policy instruments.[64] An automatic, exclusively rules-based approach is not desirable when setting macroprudential policy, also due to a still evolving body of research about its transmission channels and impact as well as its interaction with monetary or fiscal policy. Still, a more holistic and structural strategy should be contemplated. Specifically, the identification of high-level macro-financial risks could be complemented by scenario analysis and more closely linked to the stress testing of financial intermediaries to gauge the repercussions of their potential materialization on the most systemically relevant financial intermediaries, thereby enhancing insights from microprudential supervision. As a next step, possible channels of contagion could be modelled with the help of available data to get a measure of aggregate financial sector losses.

[60] See NBB (2022): "Belgian Banks' Exposure to Energy-Intensive Firms", Financial Stability Report 2022, pp. 28-29, June.

[61] See Damen, S., Reusens, P. and F. Vastmans (2022): "The Impact of Changes in Dwelling Characteristics and Housing Preferences on House Price Indices", May.

[62] See NBB (2022): "Climate-related Financial Risks and Mortgage Loans", Financial Stability Report 2022, pp. 81-82, June.

[63] See Creminger, K. and B. Van Tendeloo: "The Use of Energy Performance as a Risk Indicator for Real Estate Exposures of Financial Institutions", in: NBB (2023): "Financial Stability Report 2023", pp. 87-94, May.

[64] An exception is the CCyB whose use is elaborated on in a full-fledged policy document (see again NBB (2022): "Setting the Countercyclical Buffer Rate in Belgium: A Policy Strategy"). The identification of financial institutions as O-SIIs follows EBA guidelines (see EBA (2014): "Guidelines on the Criteria to Determine the Conditions of Application of Article 131(3) of Directive 2013/36/EU (CRD) in Relation to the Assessment of Other Systemically Important Institutions (O-SIIs)", December) which, however, provide no recommendation about setting the size of the buffer.

Results from such exercises could then be employed to select the most suitable macroprudential policy instruments and their proper calibration.

29. The FSMA's framework for the analysis of structural vulnerabilities of investment funds should be enhanced and integrated into the NBB's systemic risk assessment. Apart from fully exploiting the granularity of the recently obtained dataset about the portfolio structure of investment funds, the FSMA should contemplate the collection of further information to better evaluate potential risks originating from the interconnectedness of investment funds with the financial system. Moreover, regular stress testing of open-ended investment funds should become part of the toolkit to build on the successful pilot. Lastly, the FSMA's analysis of the non-bank financial sector should be more tightly integrated into the NBB's framework to detect systemic risks, also with the intention to regularly take stock of possible vulnerabilities and to identify potential spillovers to other financial intermediaries.

SYSTEMIC RISKS AND MACROPRUDENTIAL TOOLS

30. To successfully contain systemic vulnerabilities, an appropriate set of suitably calibrated instruments needs to be deployed by the macroprudential authority. Against this background, the following section reviews the macroprudential tools actively used by the NBB before providing an assessment of aggregate and sectoral systemic financial sector risks. Thereby it also strives to identify potential improvements to the choice and calibration of macroprudential policy instruments.

A. Macroprudential Tools

31. The NBB is relying on a well-developed macroprudential policy toolkit to address systemic risks.

To address *broad-based risks in the banking sector*

- a CCyB framework has been put in place on January 1st, 2016, requiring a quarterly review of the CCyB setting, yet a tightening of the rate above zero percent was foiled by events for a prolonged period of time.[65] Specifically, a rise to 0.5 percent that was to become effective on July 1st, 2020, was abandoned on April 1st, 2020, with the outbreak of the pandemic. Despite recurrent considerations by the NBB to lift the rate thereafter, it remained at zero percent due to macro-financial uncertainties related to Russia's war on Ukraine, rapid monetary tightening in the context of elevated euro area inflation, recent banking sector tensions abroad and clear signs for a turn in the financial cycle. However, on August 31st, 2023, the NBB announced the activation of the CCyB at rates of 0.5 percent and 1 percent that will become effective from April 1st, 2024, and October 1st, 2024, respectively, noting low provisioning by banks for potential

[65] The CCyB rate is applied to a bank's risk-weighted assets that are situated in Belgium. For more detail about the NBB's strategy to set the CCyB, see again NBB (2022): "Setting the Countercyclical Buffer Rate in Belgium: A Policy Strategy".

unexpected losses. The NBB also noted that uncertainty about the economic impact of monetary policy tightening has receded and the downturn in credit and real estate cycles has been orderly to date, enabling a strengthening of capital cushions.[66]

- the CCoB has been fully phased in at a rate of 2.5 percent of risk exposures since January 1st, 2019, as required by the CRD.[67] Likewise, a leverage ratio (LR) at 3 percent of total assets has become effective on June 28th, 2021, and forward-looking loan loss provisioning requirements have been implemented with the adoption of IFRS 9 on January 1st, 2018.[68]

To tackle *risks in the household sector*, particularly from mortgage lending, the NBB has

- established a set of so-called "prudential expectations" on January 1st, 2020, which has imposed a range of borrower-based measures on the origination of new residential mortgages in Belgium by banks and insurers. Specifically, lending for owner-occupied properties has been made subject to a 90 percent loan-to-value (LTV) ratio. However, 35 percent of mortgages granted to first-time buyers of owner-occupied housing can have an LTV ratio higher than 90 percent, of which 5 percent are allowed to go beyond a 100 percent LTV ratio.[69] For other buyers of owner-occupied dwellings, 20 percent of mortgages are permitted to have an LTV ratio of between 90 and 100 percent. Conditions are stricter for buy-to-let investors whose mortgages are subject to an 80 percent LTV ratio with a maximum of 10 percent featuring an LTV ratio of between 80 and 90 percent. In addition, only 5 percent of mortgages are tolerated to have an LTV ratio of more than 90 percent in combination with a debt-service-to-income (DSTI) ratio of 50 percent or a debt-to-income (DTI) ratio of 9. Following a comply-or-explain approach, banks and insurers must report annually to the NBB about their compliance with these thresholds and provide justification for any breach.

- maintained an additional capital charge for banks using internal risk models to calculate their minimum capital requirements for residential mortgage portfolios. Risk weight add-ons were introduced on October 22nd, 2013, aligned with Article 458 CRR from 2014 and augmented by the application of a multiplier to residential mortgage risk weights on April 30th, 2018, to account for model-determined capital buffers likely offering insufficient loss absorption capacity due to Belgium never having experienced a housing market crisis. In May 2022, the about € 2 billion additional capital cushion thus created was converted into a 9 percent SSyRB of equivalent size to take advantage of recent CRD amendments.[70] In 2023, the measure was

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[66] See NBB (2023): "National Bank Adjusts Macroprudential Capital Requirements", August.

[67] The risk exposures subject to the CCoB rate are detailed in Article 92(3) of the CRR.

[68] While the CCoB and the LR are microprudential in nature, the NBB could impose stricter requirements via Article 458 CRR as a macroprudential measure. Forward-looking loan loss provisioning requirements can only be influenced via soft powers, however.

[69] Available data suggests that the use of exemptions is well below the tolerance limits established by the NBB. Additionally, the NBB monitors risks from loans with LTV ratios above 100 percent closely.

[70] While the adoption of Article 458 CRR measures is subject to an arduous process involving consultation with and approval by multiple European institutions, implementing a SSyRB in the context of CRD is more straightforward.

extended to April 2024, also as a reaction to a warning about rising financial sector risks issued by the ESRB in September 2022.[71] In combination with CCyB activation , the NBB also announced to lower the SSyRB beyond April 2024 at a level of 6 percent, owing to its "prudential expectations" having successfully reduced the risks inherent in the mortgage portfolios of banks.[72]

- issued expectations to banks and insurers on December 1st, 2020, to gather information on the energy performance of properties in the context of mounting evidence for a widening of price and valuation differentials between energy-efficient and -inefficient structures.[73] Due to the energy inefficiency of a considerable part of the Belgian building stock, the NBB also asked banks and insurers to incorporate associated vulnerabilities for their large mortgage portfolios into their risk management practices. The NBB has followed up on compliance by further outreach to banks and insurers and by providing constructive feedback on the implementation of its expectations.

To manage liquidity risk

- a liquidity coverage ratio (LCR) for banks has come into effect on October 1st, 2015, stipulating at least 100 percent coverage of a simulated net cash outflows in a hypothetical 30-day stress scenario by high-quality liquid assets. Moreover, the net stable funding ratio (NSFR) for banks has been put into force on June 28th, 2021, demanding that available stable funding expressed as the sum of liabilities weighted by their degree of long-term reliability at least corresponds to required stable funding determined by the sum of assets and off-balance-sheet exposures weighted by factors that reflect their liquidity characteristics and residual maturities over a medium-term horizon.[74]

- liquidity management tools have been made available to all publicly offered open-ended investment funds by legislative changes adopted on October 15th, 2018.[75] Following an initially sluggish response by the industry, nearly all relevant investment vehicles subject to the legislation had allowed for anti-dilution levies, swing pricing, redemption gates or a combination

[71] See ESRB (2022): "Warning of the European Systemic Risk Board of 22 September 2022 on Vulnerabilities in the Union Financial System (ESRB/2022/7)", September.

[72] See NBB (2023): "National Bank Adjusts Macroprudential Capital Requirements", August.

[73] See again Damen, S., Reusens, P. and F. Vastmans (2022): "The Impact of Changes in Dwelling Characteristics and Housing Preferences on House Price Indices", May.

[74] The LCR and NSFR are also microprudential in nature but can be subject to stricter requirements via Article 458 CRR if deemed necessary from a macroprudential perspective.

[75] See Arrêté Royal Modifiant l'Arrêté Royal du 7 Mars 2006 relatif aux Prêts de Titres par Certains Organismes de Placement Collectif, l'Arrêté Royal du 10 Novembre 2006 relatif à la Comptabilité, aux Comptes Annuels et aux Rapports Périodiques de Certains Organismes de Placement Collectif Publics à Nombre Variable de Parts, l'Arrêté Royal du 12 Novembre 2012 relatif aux Sociétés de Gestion d'Organismes de Placement Collectif qui Répondent aux Conditions de la Directive 2009/65/CE, l'Arrêté Royal du 12 Novembre 2012 relatif aux Organismes de Placement Collectif qui Répondent aux Conditions de la Directive 2009/65/CE et l'Arrêté Royal du 25 Février 2017 relatif à Certains Organismes de Placement Collectif Alternatifs Publics et à leurs Sociétés de Gestion, et Portant des Dispositions Diverses.

thereof in their contract documentations by the end of 2022, also following heightened efforts by the FSMA in the wake of the pandemic to persuade asset managers to do so.

To contain *vulnerabilities from systemically important institutions and financial sector interconnectedness*, the NBB

- designates since January 1st, 2016, at an annual frequency, a list of domestic systemically important institutions which are obliged to maintain O-SII buffers. At present, eight banks are subject to hold additional capital, at a rate of 1.5 percent of risk-weighted assets for Belfius Bank, BNP Paribas Fortis, ING Belgium and KBC Group, and at a rate of 0.75 percent for Crelan, Euroclear Holding, Investeringsmaatschappij Argenta, and The Bank of New York Mellon. Taken together, the O-SII buffers constitute a capital cushion amounting to more than € 5 billion.

- has instated limits on intragroup exposures between Belgian banks and their parent and sister companies since March 4th, 2014.[76] In addition, the NBB has the prerogative to provide input into the SSM's authorization of strategic decisions of Belgian SIs.[77] Strategic decisions are defined in rather generic terms, involving any actions taken by a credit institution or an entity under its control that can have a global impact on its operations, i.e. involving or affecting a variety of its functions.[78]

32. Next to making use of its hard and semi-hard powers, the NBB is also employing softer forms of influence in pursuit of its financial stability mandate. As part of its monitoring framework of risks related to residential real estate, it benchmarks the lending standards as well as the loan pricing and margins of banks and insurances against each other, provides systematic feedback to individual institutions and has arranged meetings of outliers with the NBB Board. It has thereby established an effective peer mechanism to contain an undue build-up of vulnerabilities from mortgage lending. Moreover, the NBB has recently encouraged the prudent lengthening of mortgage maturities by lenders to cushion the impact of higher interest rates on the debt servicing burden (principal and interest) of borrowers, thereby reversing a policy with opposite effect that had been in place during the extended period of low financing costs. Similarly, the NBB has repeatedly given guidance to the banking sector to exploit the space opened by its decisions to suspend a tightening of the CCyB rate to sustain the provision of credit to the economy and/or to proactively engage with borrowers in need of debt restructuring.[79]

[76] Intragroup exposure limits are a microprudential instrument but can be modified via Article 458 CRR for macroprudential purposes.

[77] See Banking Law, Article 77. Strategic decisions of SIs are approved by the SSM taking account of input provided by the NBB. For LSIs, strategic decisions are approved by the NBB.

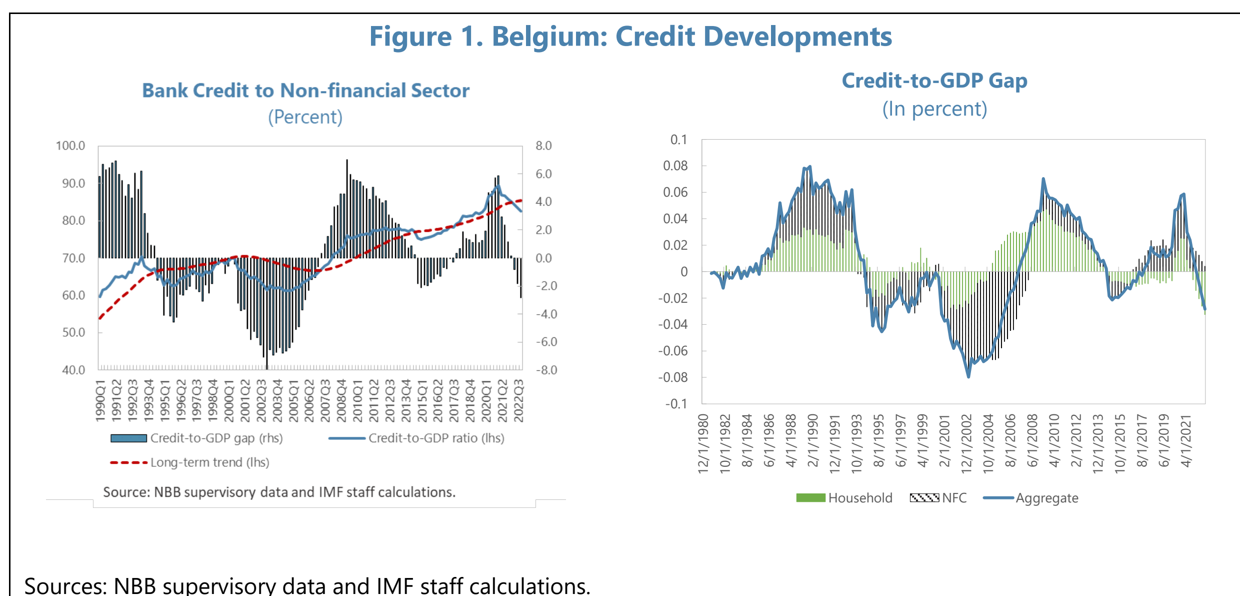
[78] See Banking Law, Article 3 63°. In addition, this article also allows the NBB to specify which decisions are deemed strategic.

[79] For the most recent examples of both policies, see NBB (2023): "Financial Stability Report 2023", pp. 16-17, May.

B. Assessment of Broad-Based Vulnerabilities

33. Among extended periods of inertia, private sector credit has steadily increased since the early 2000s. Based on the NBB's preferred debt concept,[80] credit as a percentage of GDP has grown from 69 percent in 2000:Q1 to 83 percent in 2022:Q4, a rise interrupted by prolonged phases of subdued credit developments after the burst of the dotcom bubble at the beginning of the millennium as well as in the wake of the global financial crisis (see Figure 1). In an environment of inflation remaining well below the ECB's target in the aftermath of the euro area sovereign debt crisis, the exceptional easing of monetary and financial conditions starting in 2014 re-ignited an expansion of credit.

Figure 1. Belgium: Credit Developments



Sources: NBB supervisory data and IMF staff calculations.

34. Household indebtedness has expanded over the past two decades. Their debt ratio has climbed rather steadily, bringing it from a low of 39 percent of GDP in 2002:Q1 to 61 percent of GDP in 2022:Q3 (see Figure 2). Residential mortgages, chiefly provided by banks and, to a much lesser extent, other financial intermediaries such as insurances, have accounted for the bulk of household debt. In addition, they have also been the sole driver of its rise, whereas other forms of credit, including consumer loans, have fallen in prominence. Factors in common with other European economies, like historically low interest rates and surging house prices, have underpinned the period of dynamism of mortgage lending following the euro area sovereign debt crisis, yet country-specific characteristics have also played a role, such as changes in the tax regime as well as stable

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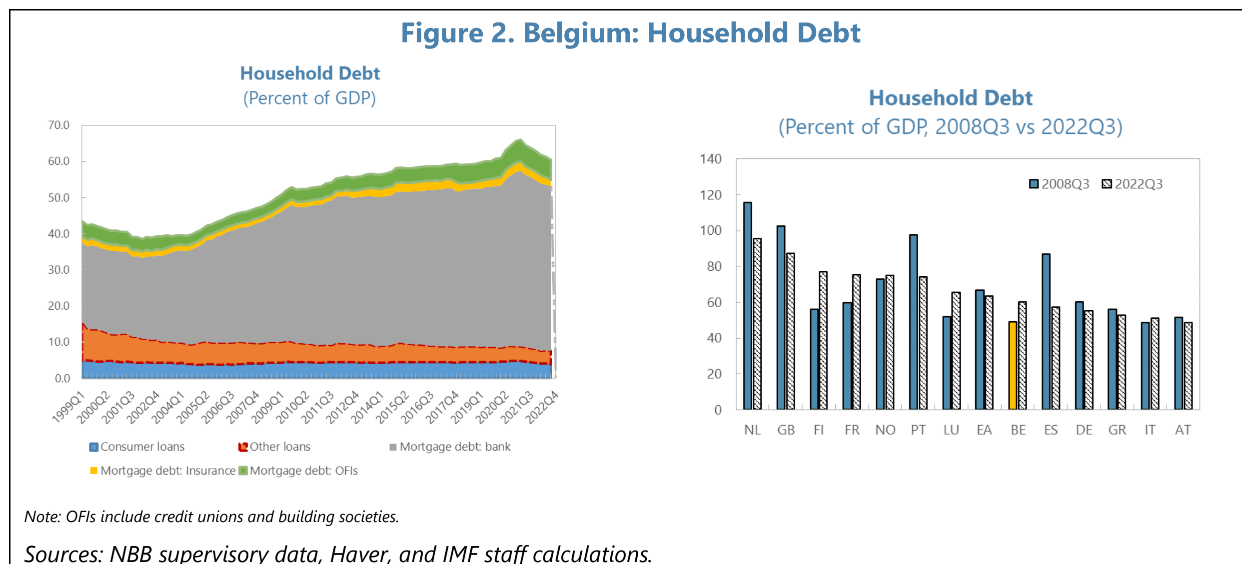
[80] To assess credit developments for the non-financial sector, the NBB primarily relies on a narrower debt concept than the aggregates suggested by the Basel III standard and the ESRB which include loans by domestic and foreign banks, debt securities, trade credit and pension scheme liabilities. In particular, the NBB only considers loans by banks resident in Belgium, adjusted for securitization, to the non-financial sector. It thereby manages to abstract from intragroup and intercompany lending which, due to its substantial size and volatility, is prone to mar the signaling quality of the credit gap. In addition, the NBB's narrow debt concept is also characterized by the availability of a longer sample and greater timeliness. For more detail, see NBB (2022): "Setting the Countercyclical Buffer Rate in Belgium: A Policy Strategy", pp. 19-22.

population shares and real incomes of debtors typically engaging in mortgage borrowing.[81] Taken together, they have left Belgium among the group of European countries where households have not deleveraged since the global financial crisis. Still, the indebtedness of Belgian households has remained relatively modest in comparison with other European economies, despite its multiannual increase.

Figure 2. Belgium: Household Debt



Note: OFIs include credit unions and building societies.

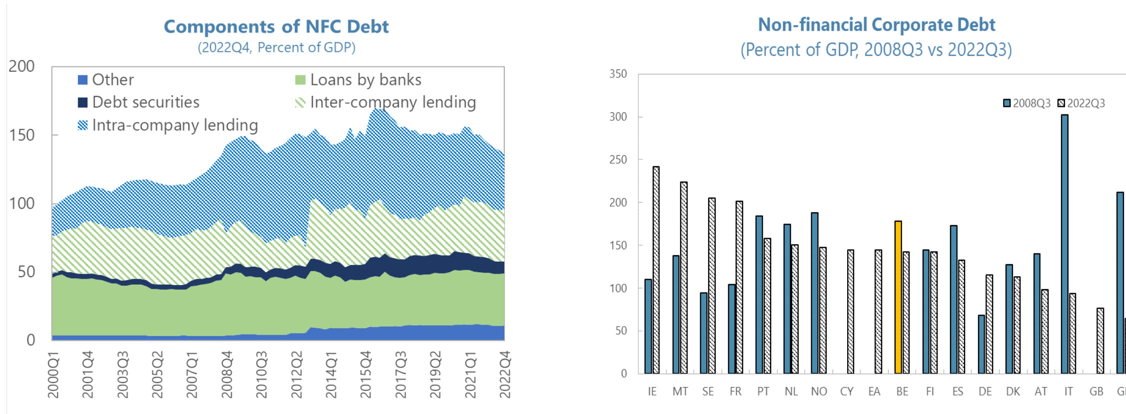
Sources: NBB supervisory data, Haver, and IMF staff calculations.

35. Corporate debt, dominated by volatile company-to-company lending, has risen moderately since the start of the millennium. Between 2000:Q1 and 2022:Q3, overall corporate indebtedness expanded from 97 percent to 141 percent of GDP (see Figure 3). However, after excluding inter-company lending as well as loans provided to firms by the non-bank foreign sector and captive financial institutions, accounting for a respective 27 percent and 30 percent of the total, corporate debt has increased more modestly, reaching 59 percent of GDP in 2022:Q3 after 49 percent of GDP in 2000:Q1.[82] Excluding company-to-company lending, banks are the primary source of funding for Belgian firms. The share of bond issuance has increased since the global financial crisis yet remains comparatively small. In an international context, corporate indebtedness is broadly in line with European peers, even if firms in some of the larger euro area economies, such as Germany or Italy, maintain considerably lower levels of debt.

[81] For a more detailed analysis, see Du Caju, P., Emiris, M., Piette, C. and M.-D. Zachary (2018): "Shedding New Light on the Mortgage Debt of Households in Belgium", June.

[82] Company-by-company lending is generally perceived to imply little to no macro-financial risks. Lending between entities of the same firm (inter-company) and by captive financial institutions is unlikely to be cut off as it would undermine parts of one and the same enterprise. At the same time, such activities are interacting with Belgian financial intermediaries only at the margin. Loans granted by the non-bank foreign sector may entail some refinancing risk as it is a proxy for transactions that are assumed to be primarily taking place between entities of the same firm.

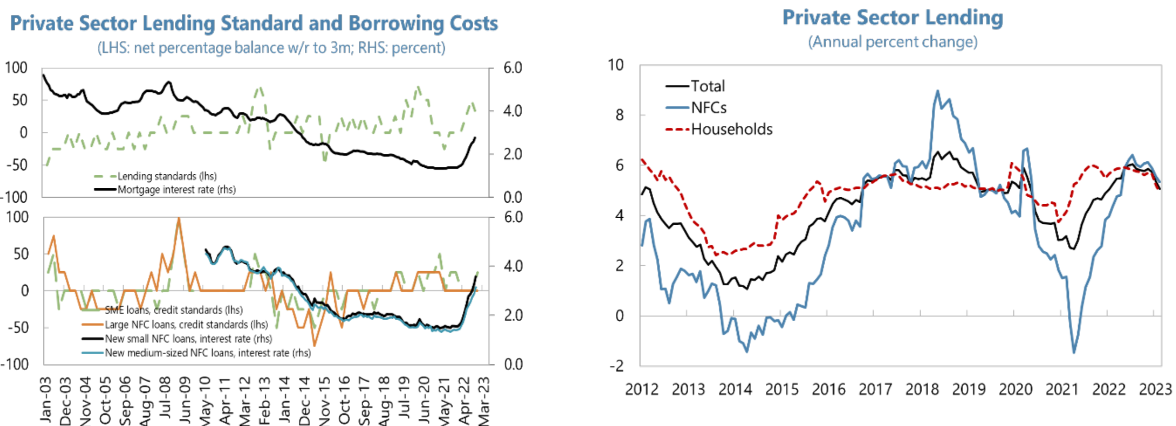
Figure 3. Belgium: Corporate Debt



Sources: NBB supervisory data, Haver, and IMF staff calculations.

36. Following a series of economic shocks and a rapid tightening of monetary policy, the credit cycle is turning. The Belgian economy has emerged resilient from the pandemic, supported by waves of fiscal support and favorable financial conditions on the back of unprecedented monetary accommodation. However, with the re-opening of the economy and an energy crisis sparked by Russia's war on Ukraine, inflationary pressures have mounted, triggering swift monetary tightening and consequent rises in the borrowing costs of households and firms (see Figure 4). In addition, associated uncertainties about the economic outlook, recently aggravated by financial sector tensions abroad, have prompted a tightening of bank lending conditions, further constraining the access to funding. As a result, credit growth has decelerated, particularly for households, as credit demand has waned in unison with worsening financing conditions. At the same time, the credit gap has swung from the positive values it had maintained since 2017:Q4 into negative territory although its signaling quality in the recent period is marred by the substantial fluctuations nominal GDP experienced during the pandemic and the energy crisis.

Figure 4. Belgium: Financial Conditions and Credit Growth



Sources: ECB bank lending survey, NBB, and IMF staff calculations.

37. Due to repeated economic shocks, the NBB shelved planned activations of the CCyB several times with only recently announcing the stepwise lifting of the rate to 1 percent. The activation of the CCyB, at a time where banks have remained profitable and have significant capital headroom, should help address a potential materialization of unexpected losses from the ongoing pass-through of tighter financial conditions to households and corporations that may expose risks in the credit portfolios of banks, including outside of mortgage lending, at a time when provisions have remained low. Before, the NBB had been left with only a single buffer to release, the SSyRB, which could have been inadequate to address a more widespread crystallization of vulnerabilities, leaving the NBB to rely on its soft powers by encouraging banks to make use of their capital cushions to sustain credit provision and proactively engage with borrowers in distress.[83]

C. Assessment of Household and Housing Market Vulnerabilities

38. Household sector vulnerabilities remain a concern as they are intricately linked with housing market developments. On the back of brisk mortgage origination activity, household debt as a percentage of gross disposable income has surpassed 100 percent in recent years even as it remains below the level of some euro area peers (see Figure 5). In addition, the debt servicing ratio of households has stayed broadly constant since 2014, offering some indication that the benefits from lower interest expenses may have been offset by the higher amortization needs of a rising stock of debt.[84] Offering a snapshot of the potential extent of household vulnerabilities, the latest (2021) vintage of the HFCS, shows that about 16 percent of outstanding mortgage debt constitutes loans with an LTV ratio above 80 percent. Moreover, nearly 3 percent of borrowers, accounting for roughly 7 percent of mortgage volumes, spend more than half of their income on servicing their debt.[85] Besides, more than a fifth of households, accounting for around a fourth of outstanding mortgage debt, lack the liquidity to cover more than six months of debt service.[86] At the same time, the housing market is showing incipient signs of cooling. Although house prices have continued their ascent, their rate of increase has decelerated from the rapid pace seen during the pandemic. Likewise, the number of mortgage applications has dropped sharply, pointing towards a waning of demand that may dampen prices further going forward.

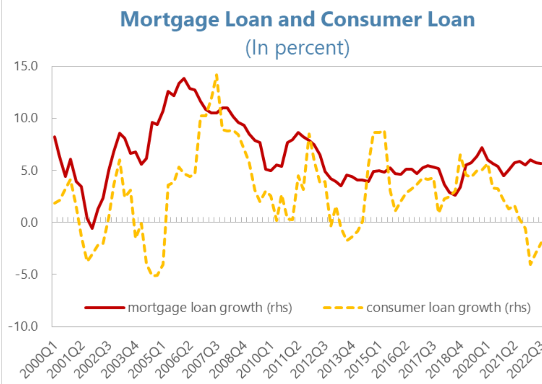
[83] See, for example, NBB (2023): "Quarterly Decision of the National Bank of Belgium on the Countercyclical Buffer Rate for 2023Q2: 0%", March.

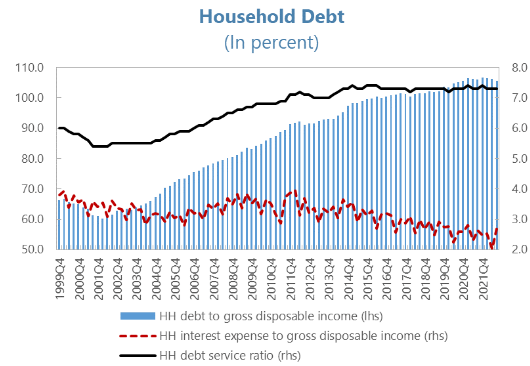
[84] Apart from the need for households to amortize their mortgage debt, however, their willingness to make higher principal payments, e.g., by voluntarily opting for full amortization over a shorter maturity, does also play a role.

[85] Nearly a tenth of these mortgages have an LTV ratio above 80 percent.

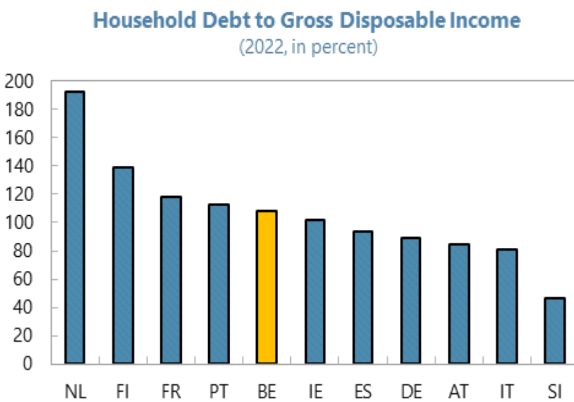
[86] More than a fifth of these mortgages have an LTV ratio above 80 percent.

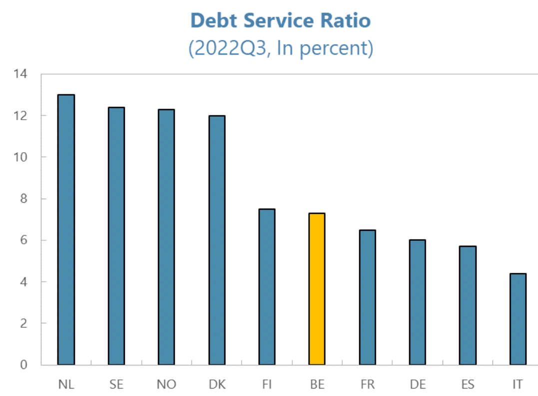
Figure 5. Belgium: Household Credit and Housing Market Developments

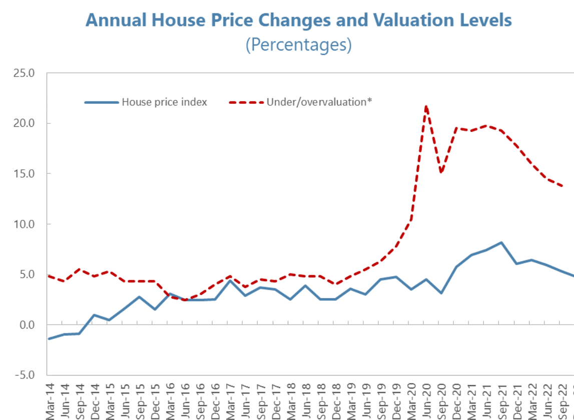


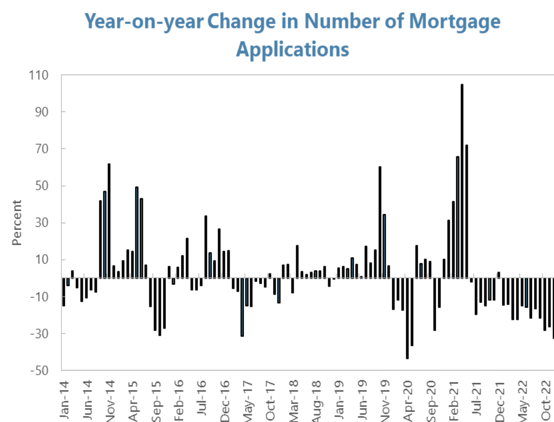


Note: The debt service ratio is expressing debt servicing costs (interest and armotisation) as a percentage of gross disposable income.









Sources: NBB supervisory data, BIS, StatBel, ECB, Eurostat, Haver, and IMF staff calculations.

*Estimate of gross over/undervaluation based on ECB (2011): "Tools for Detecting a Possible Misalignment of Residential Property Prices from Fundamentals", Financial Stability Review, pp. 57-59, June, and ECB (2015): "A Model-Based Valuation Metric for Residential Property Markets", Financial Stability Review, pp. 45-47, November.

39. Despite mounting household sector risks, the lack of a prolonged house price boom, strong balance sheets and mortgage market characteristics offer some cause for comfort. Valuations of residential real estate have increased over the past decade and affordability has declined with available model-based estimates indicating house prices being approximately 10 percent (NBB) and 15 percent (ECB) above their fundamentals. Still, the Belgian housing market has been less dynamic than in many OECD or euro area peers (see Figure 6). In addition, the prevalence of fixed-rate, fully amortizing mortgages insulates a large share of households from the repercussions of substantially higher funding costs. Finally, the continued strong performance of labor markets, excess savings accumulated during the pandemic and automatic wage indexation are prone to have strengthened the financial positions of many debtors. In fact, the debt burdens of Belgian households may have been lightened by the recent inflationary episode as the full pass-through of price into wage increases has preserved real incomes while eroding real debt balances. Similarly, still increasing nominal house prices have kept the decline in real collateral values below the contraction in real mortgage debt.

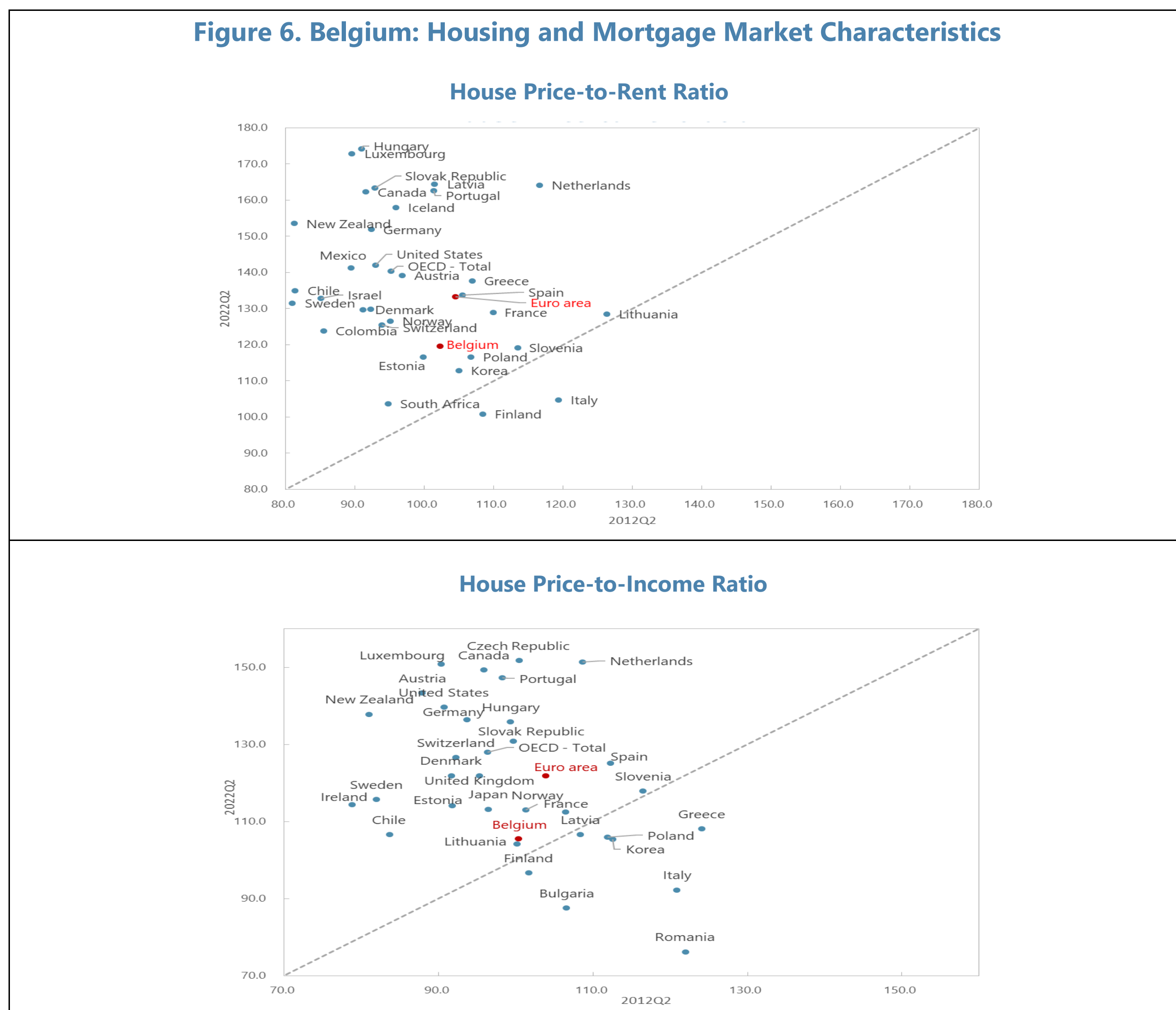
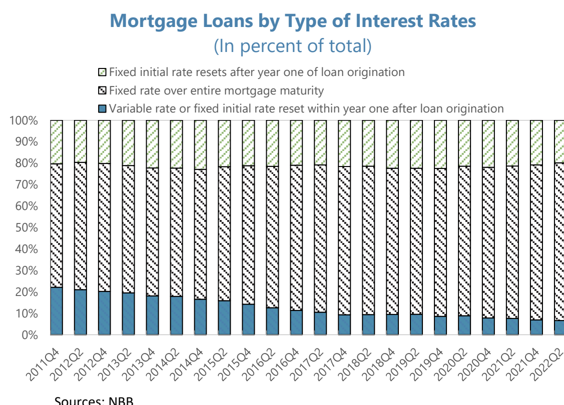
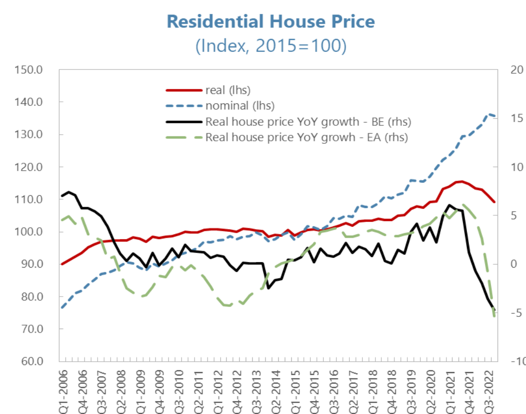


Figure 6. Belgium: Housing and Mortgage Market Characteristics (Concluded)





Sources: NBB, BIS, OECD, and IMF staff calculations.

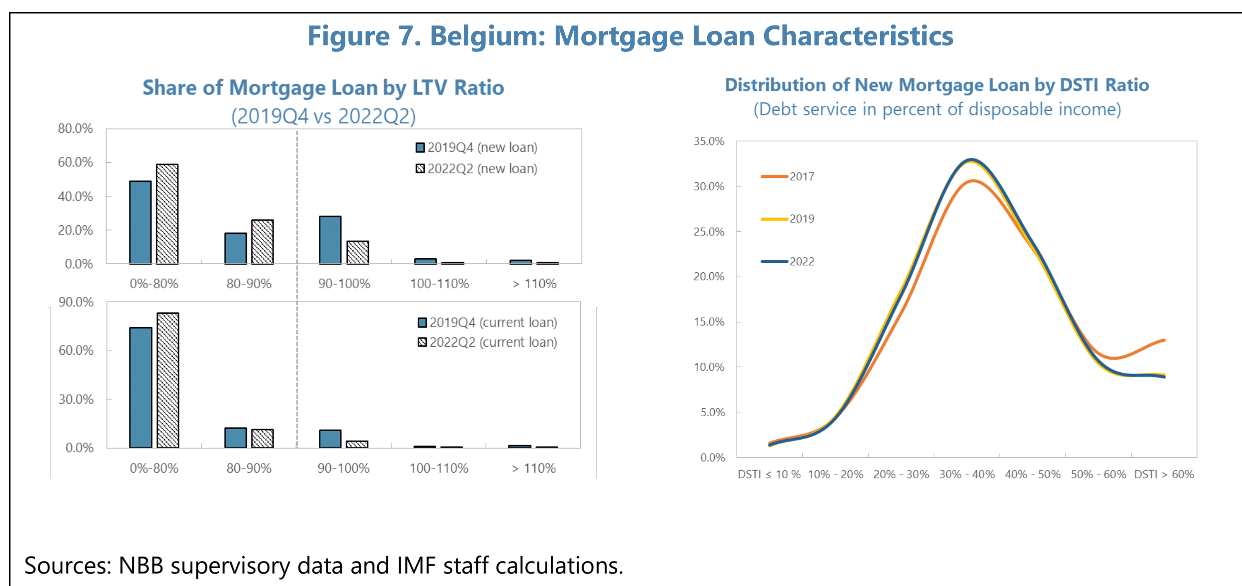
40. As the economy softens, funding conditions tighten and the housing market cools, pressures on household finances may emerge, weighing on financial sector balance sheets. Despite the repeated economic shocks of recent years, the rate of non-performing housing loans has remained on a declining trend, reaching 0.9 percent in 2022:Q4 compared to the 1.1 percent seen in 2019:Q4 before the outbreak of the pandemic. Still, another major economic and/or financial shock, particularly if combined with a sharp correction in house prices, has the potential to expose a non-negligible share of households to debt distress and weaken the quality of mortgage portfolios. In the event, households that have been disproportionately affected by the pandemic and/or the energy crisis are likely to see their room for servicing their debts further constrained. In addition, low income and/or (liquid) asset households and borrowers with variable-rate debt may face difficulties. Lastly, a precipitous fall in house prices, if going far beyond the currently estimated extent of overvaluation,[87] could undermine collateral values and, due to the full-recourse provisions of Belgian mortgages, incentivize households to prioritize debt servicing over consumption to align their loan balances with the value of their home. Such a retrenchment from spending may imply negative spillovers to economic activity and adversely affect financial sector resilience via second round effects.

41. To guard against the materialization of risks, the NBB has taken welcome policy action yet further SSyRB recalibration should await a clearer housing market outlook. There is evidence that the Article 458 CRR measures and their successor, the SSyRB, as well as the imposition

[87] According to ECB estimates, residential real estate in Belgium registered an overvaluation of nearly 14 percent in 2022:Q3 (for details about the estimation methodology, see ECB (2011): "Tools for Detecting a Possible Misalignment of Residential Property Prices from Fundamentals", Financial Stability Review, pp. 57-59, June, and ECB (2015): "A Model-Based Valuation Metric for Residential Property Markets", Financial Stability Review, pp. 45-47, November). Figures based on the NBB's valuation model point towards a similar degree of overvaluation, at around 10 percent in 2022:Q4 (for details about the estimation methodology, see again C. Warisse: "Analysis of the Developments in Residential Property Prices: Is the Belgian Market Overvalued?", in: NBB (2017): "Economic Review June 2017", pp. 61-77, June).

of non-legally binding borrower-based measures on banks and insurers have discouraged riskier forms of mortgage lending. Indeed, the share of uncomfortably high LTV ratios in the origination of new and the stock of outstanding mortgages has decreased since the introduction of the NBB's "prudential expectations," successfully meeting the desired thresholds (see Figure 7). The recent CCyB activation ensures that banks will continue to be able to absorb some of the potential losses from a large-scale impairment of the debt servicing capacity of households and/or a deterioration in collateral values in the event of a steep contraction in house prices, notwithstanding the reduction in the SSyRB.[88] However, the SSyRB should be maintained at its 6 percent rate until more clarity about housing market prospects is obtained. The exemptions from the borrower-based measures should also be kept under review to prevent them becoming a source of vulnerability.

Figure 7. Belgium: Mortgage Loan Characteristics



Sources: NBB supervisory data and IMF staff calculations.

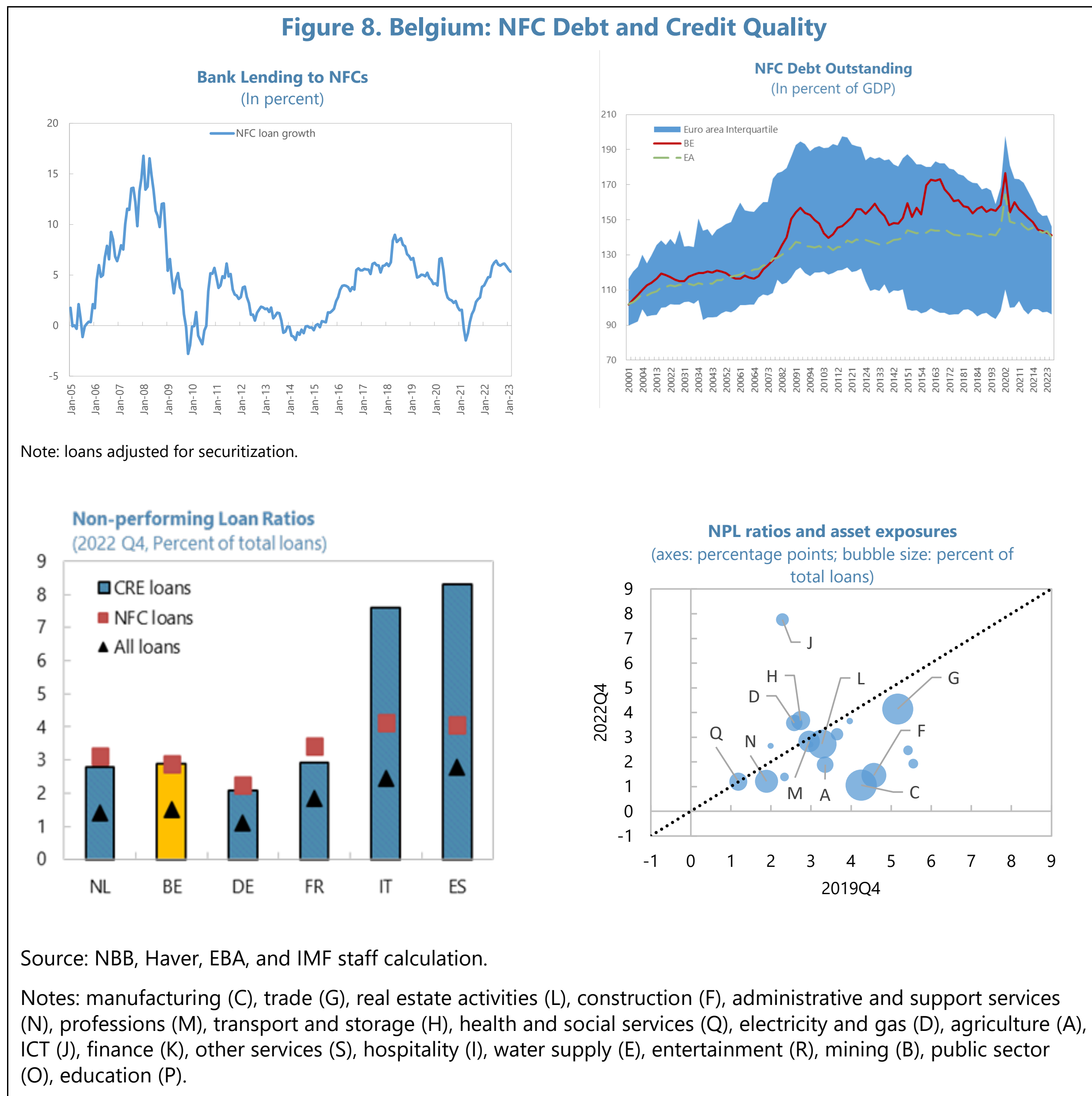
D. Assessment of Corporate and CRE Vulnerabilities

42. Despite subdued credit origination and robust debt servicing by NFCs, vulnerabilities may emerge in the context of a softening economy and tighter financing conditions. Following a brisk expansion of bank lending to NFCs on the eve of the global financial crisis, corporate borrowing has risen at a more modest pace in the years after (see Figure 8). Overall, credit growth fluctuated in a range of 0-5 percent, notwithstanding brief periods of moderately higher activity. As a result, corporate debt as a percentage of GDP has mostly been on a declining trend since 2016Q4, bringing it in line with the euro area average, mainly reflecting a decrease in funding provided by the non-bank foreign sector and captive financial institutions. The credit quality of corporate exposures is generally worse than that of the aggregate loan portfolio, which benefits from the low NPL ratios of residential mortgages but remains somewhat more favorable than in a select group of

[88] The combined € 3.6 billion of capital provided by the SSyRB at a 6 percent rate and the CCyB at a 1 percent rate once fully phased in by October 1st, 2024, is higher than the € 2 billion offered by only the SSyRB at a 9 percent rate. In a scenario simulating a decline in residential real estate values in line with the banking sector stress test performed for the FSAP, both buffers would compensate for part of the € 5.1 billion drop in CET1 capital levels below the 2024 baseline (equivalent to a fall in the CET1 ratio from 20.9 percent to 17.8 percent).

euro area comparators. Despite a succession of macro-financial shocks since the end of 2019, NPL ratios in most NFC sectors have decreased, particularly with counterparts where banks maintain their largest lending portfolios, such as manufacturing (C), trade (G) and real estate activities (L). However, the NPL ratios of some sectors with non-negligible exposure have deteriorated, including in utilities (D), logistics (H) as well as information and communication technology (J).

Figure 8. Belgium: NFC Debt and Credit Quality



Note: loans adjusted for securitization.

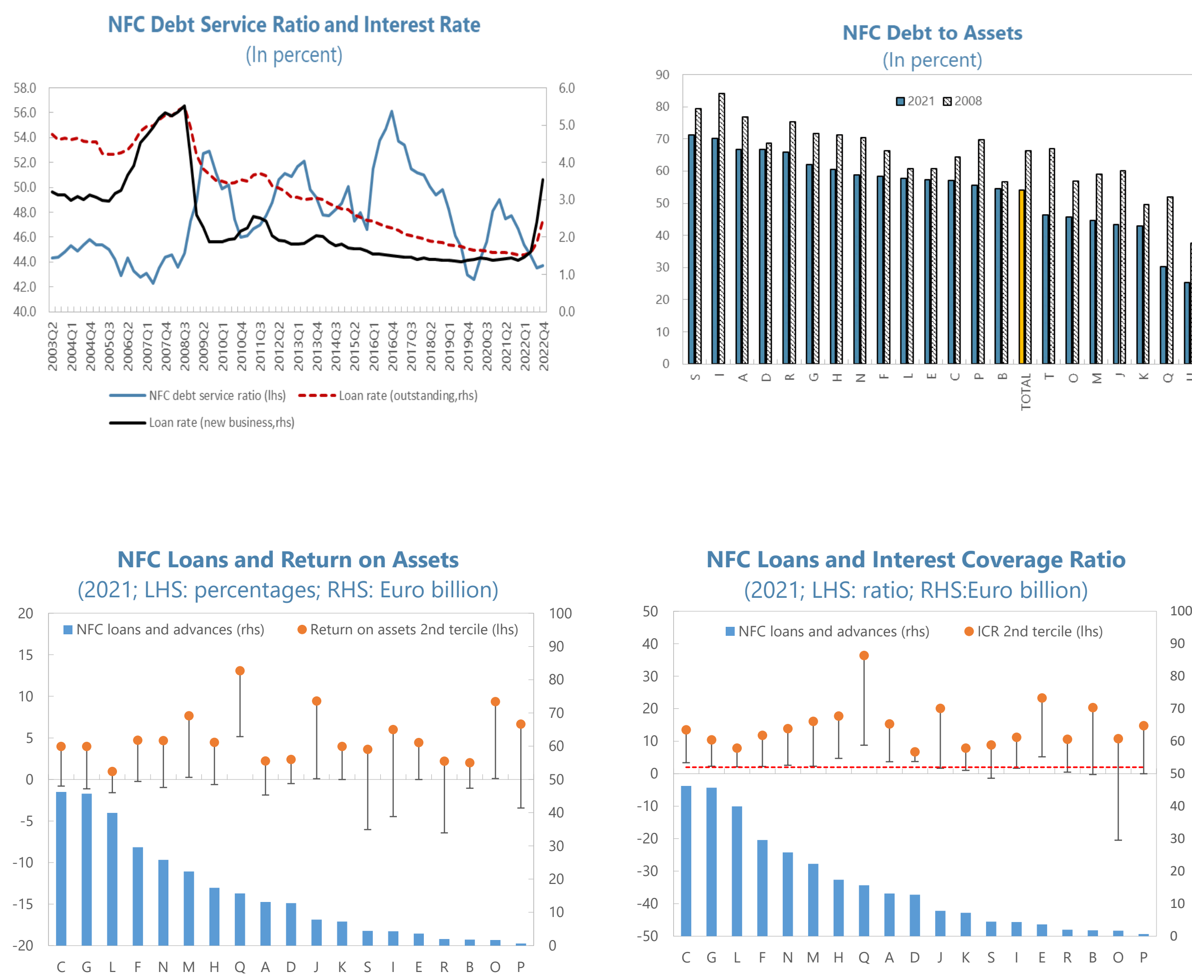
Source: NBB, Haver, EBA, and IMF staff calculation.

Notes: manufacturing (C), trade (G), real estate activities (L), construction (F), administrative and support services (N), professions (M), transport and storage (H), health and social services (Q), electricity and gas (D), agriculture (A), ICT (J), finance (K), other services (S), hospitality (I), water supply (E), entertainment (R), mining (B), public sector (O), education (P).

43. A surge of wage and cost inflation, dearer funding and weakening economic activity may weigh on the profitability and debt servicing capacity of some firms. On aggregate, the favorable interest rate environment of recent years and robust corporate profitability have helped to improve the ability of companies to honor their debts, with the debt servicing ratio coming close to its historic lows in 2022 (see Figure 9). At the same time, all sectors have reduced their leverage

since the global financial crisis bringing the aggregate debt-to-asset ratio from 66 percent in 2008 to 54 percent in 2021. Still, cost pressures in the context of the energy crisis, flagging economic growth and the rather rapid pass-through of higher interest rates to the price of businesses loans may herald more taxing conditions going forward, particularly for operationally challenged firms. While corporate accounts for 2021 were indicating robust profitability for the upper two thirds of companies, businesses in the lowest tercile were showing low or even negative returns on their assets across the large majority of sectors. By contrast, interest coverage ratios (ICRs) were generally above the level commonly perceived as critical. Only sectors with comparatively limited bank loan exposures recorded ICRs below the threshold of 2.

Figure 9. Belgium: Corporate Profitability and Solvency



Note: the minimum whisker represents the 1st (=worst) tercile of firms.

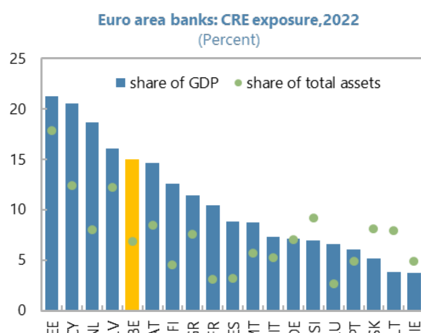
Note: the minimum whisker represents the 1st tercile of firms.

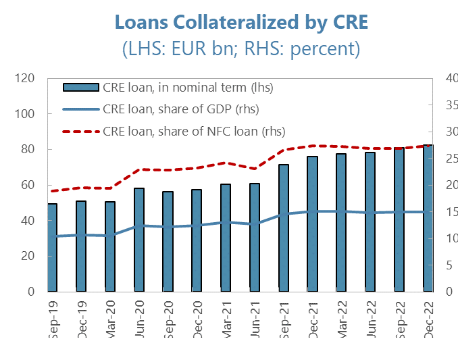
Sources: NBB supervisory data, BIS, EBA, and IMF staff calculations.

Notes: manufacturing (C), trade (G), real estate activities (L), construction (F), administrative and support services (N), professions (M), transport and storage (H), health and social services (Q), electricity and heating (D), agriculture (A), ICT (J), finance (K), other services (S), hospitality (I), water supply (E), entertainment (R), mining (B), public sector (O), education (P), Activities of households as employers; undifferentiated goods- and services- of households for own use (T), Activities of extraterritorial organisations and bodies (U).

44. Banks and insurers are vulnerable to a turn in the CRE cycle due to sizeable direct and indirect exposures. Among euro area peers, the loan portfolio of Belgian banks is among the most sensitive to developments in CRE markets, with CRE collateralized NFC lending reaching about 15 percent of GDP or 7 percent of banking sector assets (see Figure 10). At the same time, lending for CRE purposes has risen from pre-pandemic levels, accounting for more than a fourth of total NFC credit at the end of 2022. Across sectors, CRE loans are most prevalent in real estate activities (L), construction (F), the professions (M), health care (Q) and trade (G). In line with the ESRB definition, they either serve a CRE purpose, i.e., the acquisition of construction of a commercial property, or constitute borrowing for other purposes that is collateralized with CRE.[89] By and large, the leverage of the outstanding stock of CRE exposures remains at comfortable levels, with nearly three quarters showing an LTV ratio of less than 60 percent in February 2023. However, a non-negligible share of more than 10 percent has LTV ratios of 80 percent and beyond, making it particularly vulnerable in the event of a sharp price correction.

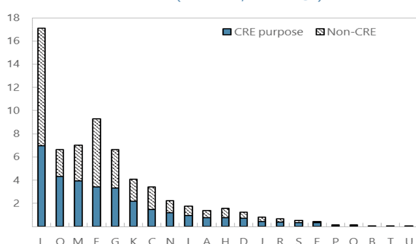
Figure 10. Belgium: Size and Quality of Bank CRE Exposures

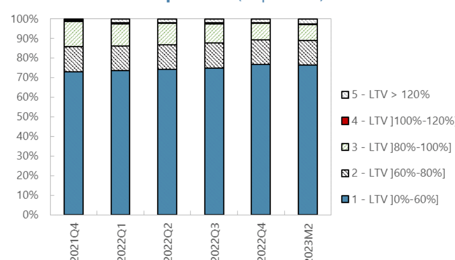




Belgian CRE prices have shown cyclicality yet less volatile compared to European average

The valuation is mostly streched by industrial segement and the retail segement.





Sources: EBA, NBB supervisory data, and IMF staff calculation.

Notes: manufacturing (C), trade (G), real estate activities (L), construction (F), administrative and support services (N), professions (M), transport and storage (H), health and social services (Q), electricity and heating (D), agriculture (A), ICT (J), finance (K), other services (S), hospitality (I), water supply (E), entertainment (R), mining (B), public sector (O), education (P), Activities of households as employers; undifferentiated goods- and services- of households for own use (T), Activities of extraterritorial organisations and bodies (U).

[89] See ESRB (2019): "Recommendation of the European Systemic Risk Board of 21 March 2019 amending Recommendation ESRB/2016/14 on Closing Real Estate Data Gaps (ESRB/2019/3)", March.

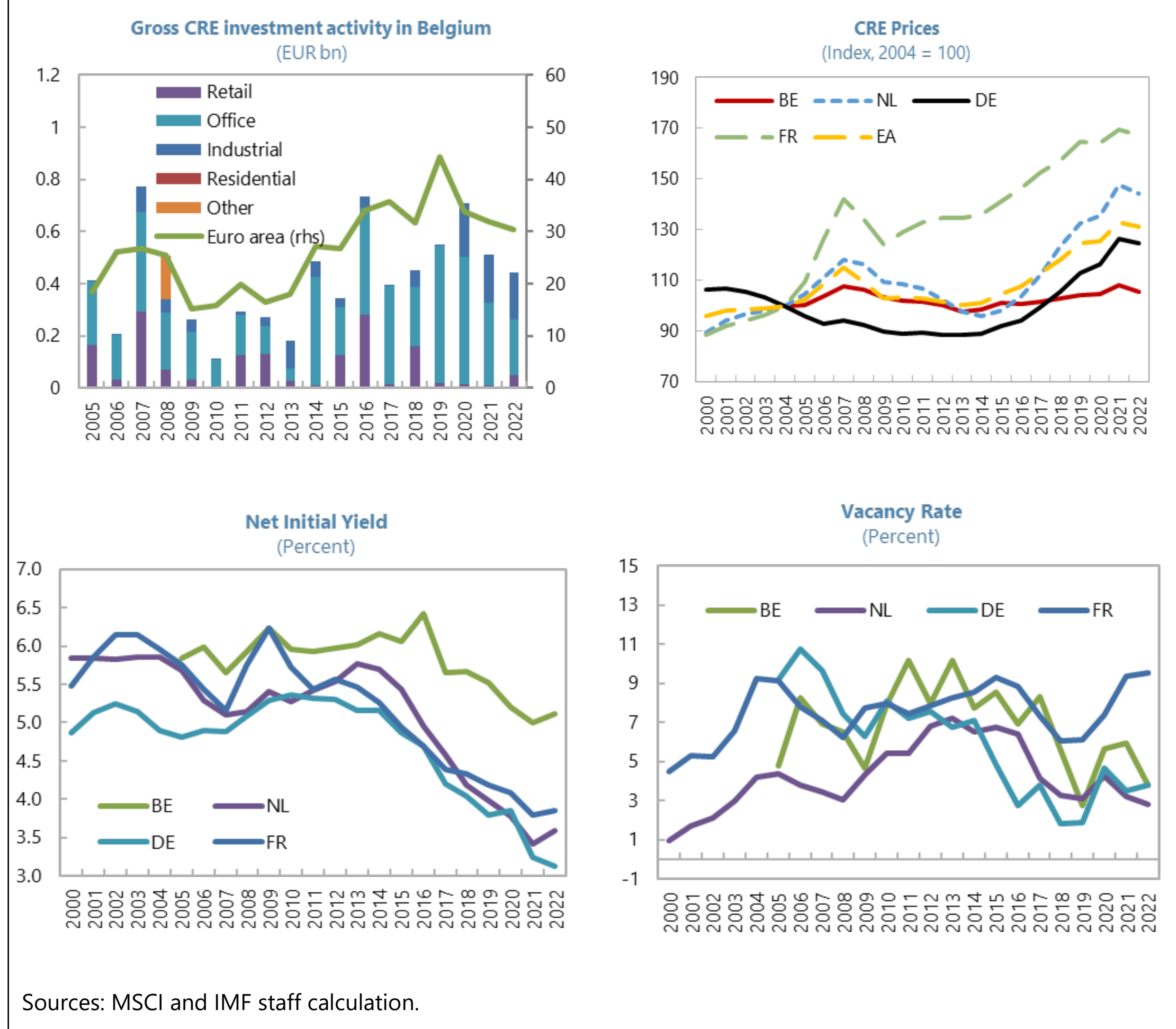
of commercial dwellings. Like banks, insurers have also augmented their CRE exposures in recent years in search of higher returns, bringing their share in total investment portfolios to 12 percent by 2022, after less than 8 percent in 2016.[90]

45. Although the CRE market in Belgium has been less buoyant than in peer economies, financial sector vulnerabilities may crystallize in case of a sharper downturn. In line with developments in the euro area, CRE transaction volumes have remained at elevated levels on the back of continued demand for industrial properties, such as warehouses and logistics centers, and offices in the dominant (Brussels) market (see Figure 11). At the same time, CRE prices have shown considerably less dynamism than in neighboring economies, staying below their 2007 peak, as the comparatively steady prices of office buildings have precluded a larger rise. As a corollary, however, CRE valuations in Belgium have not become as stretched as in France, Germany or the Netherlands. Consequently, net initial yields in 2022 still offer a relatively attractive pick-up in comparison to safer assets, possibly affording some cushion against a steeper market correction.[91] Likewise, vacancy rates have remained comparatively low. Still, a significant worsening of CRE market conditions may strain financial sector exposures. Specifically, a substantial weaking of economic activity and/or structural changes, such as falling office occupancies post-pandemic or the obsolescence of energy-inefficient properties, may lessen operating incomes with negative consequences for the debt servicing capacity of borrowers and erode recoverable collateral values in case of default.

[90] The exposures of insurers to CRE markets are diverse and include direct property investments as well as holdings of investment funds with a CRE focus, CRE-related loans and the bonds and/or equity of firms active in the CRE business.

[91] The net initial yield puts the annual rental income less non-recoverable operating costs relative to the capital value of a property.

Figure 11. Belgium: CRE Market Developments

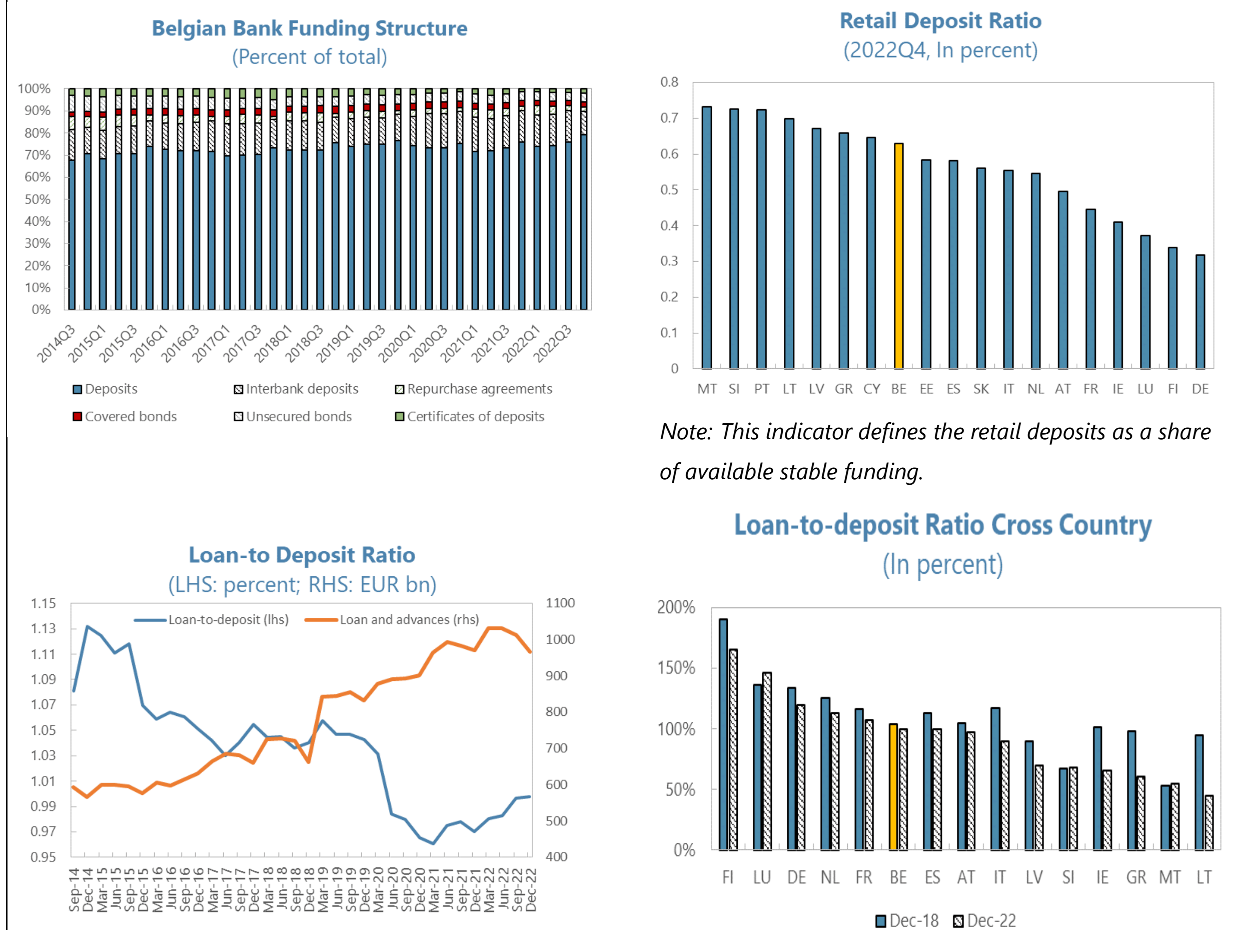


Sources: MSCI and IMF staff calculation.

E. Assessment of Vulnerabilities from Funding and Liquidity

46. The banking system is characterized by a robust funding structure with customer deposits fully underpinning the stock of loans. Deposits by the non-financial sector account for around three quarters of financing (see Figure 12). Interbank transactions constitute much of the remainder while the reliance on market-based funding is relatively small, at less than 10 percent. Retail deposits, of which about 60 percent are covered by deposit insurance, are a larger source of available stable funding than in many other euro area countries, representing approximately two thirds of the total. Over the past decade, the growth in deposits has mostly surpassed the corresponding increase in loans, leaving the loan-to-deposit ratio close to unity, and below its level in neighboring economies.

Figure 12. Belgium: Bank Funding



Source: EBA, supervisory data, and IMF staff calculations.

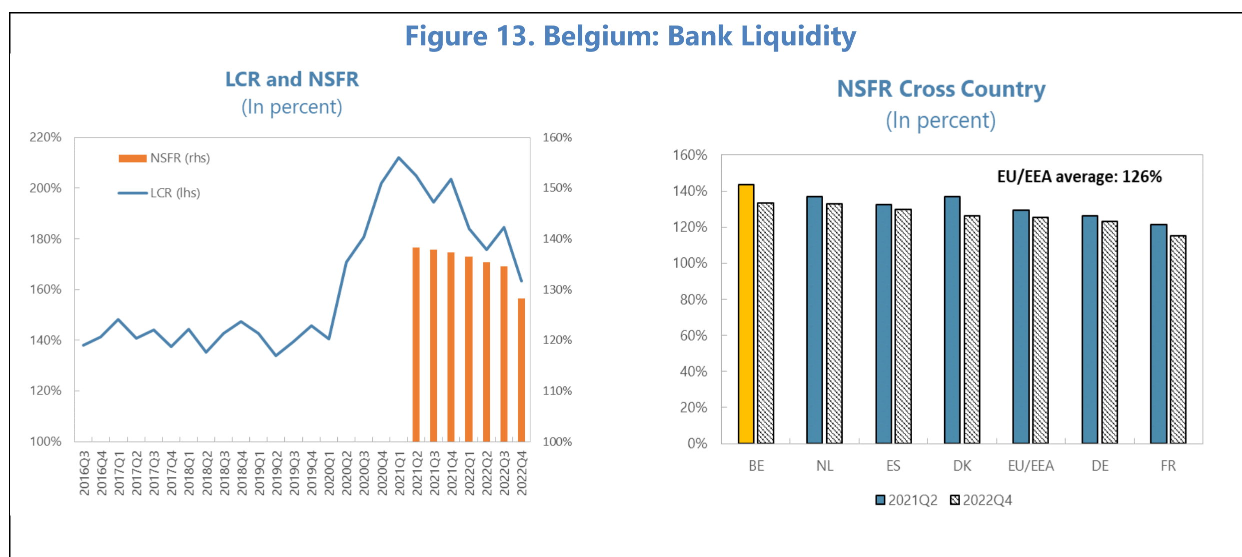
47. Rapidly rising interest rates may pose challenges for the financial sector. Following the rise of monetary policy rates by the ECB, assets of banks have begun to reprice while increases in deposit rates have remained rather modest to date, improving net interest margins. However, pressure to raise the remuneration of deposits, the most important funding source of banks, has been mounting. After a period of reluctance by depositors to shift to higher-yielding alternatives, the issuance of a one-year, favorably taxed, government bond in August 2023, also with the intention to incentivize banks to improve depositor remuneration, proved popular as it offered a return slightly superior to available savings deposit rates.[92] In the past, banks have been adept at managing the differing pace of repricing of predominantly long-term, fixed-rate assets and short-term liabilities over several interest rate cycles, yet large-scale deviations from historical patterns are

[92] The one-year government bond raised €22 billion, largely originating from the about €300 billion in household savings deposits which are constituting around half of the private non-financial sector deposits of banks resident in Belgium. Earlier, legislative proposals also contemplated a mechanism for raising deposit rates by linking the pricing of regulated savings deposits to ECB policy rates or Belgian sovereign yields in an automatic way but gained little traction.

liable to create asset-liability mismatches with adverse effects on the profitability of banks. Besides, the funding costs of banks have also been affected by the phase-out of the ECB's favorably priced liquidity facilities.

48. Banks maintain comparatively comfortable liquidity cushions. Benefitting from large-scale liquidity injections by the ECB during the acute phase of the pandemic, the LCR improved from about 140 percent in early 2020 to a peak of more than 210 percent at the beginning of 2021 (see Figure 13). Since then, the ebbing risk of financial market dislocations and the setting in of repayments of central bank liquidity has brought the LCR back to 160 percent by end-2022, still well above its pre-pandemic levels and regulatory thresholds, yet the recent bond issuance by the government created temporary liquidity pressures among some banks.[93] Likewise, the NSFR has also experienced some decline but remains higher than the European average and above the regulatory minimum. As a result, the liquidity buffers of Belgian banks provide some space to meet possible deposit outflows from customers in search of higher yields.

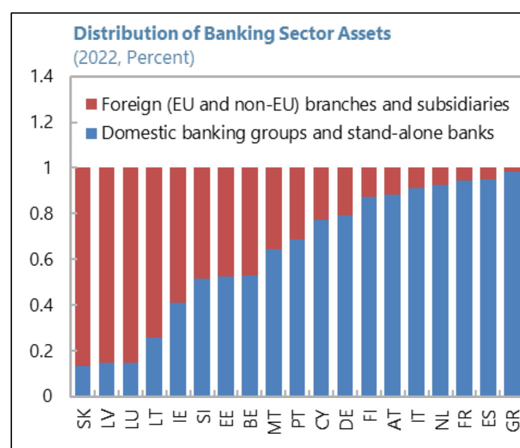
Figure 13. Belgium: Bank Liquidity



[93] At its high in mid-2021, Belgian banks availed themselves of nearly € 90 billion of central bank liquidity, up from € 19 billion at the end of 2019. By the spring of 2023, the amount had dwindled to € 47 billion.

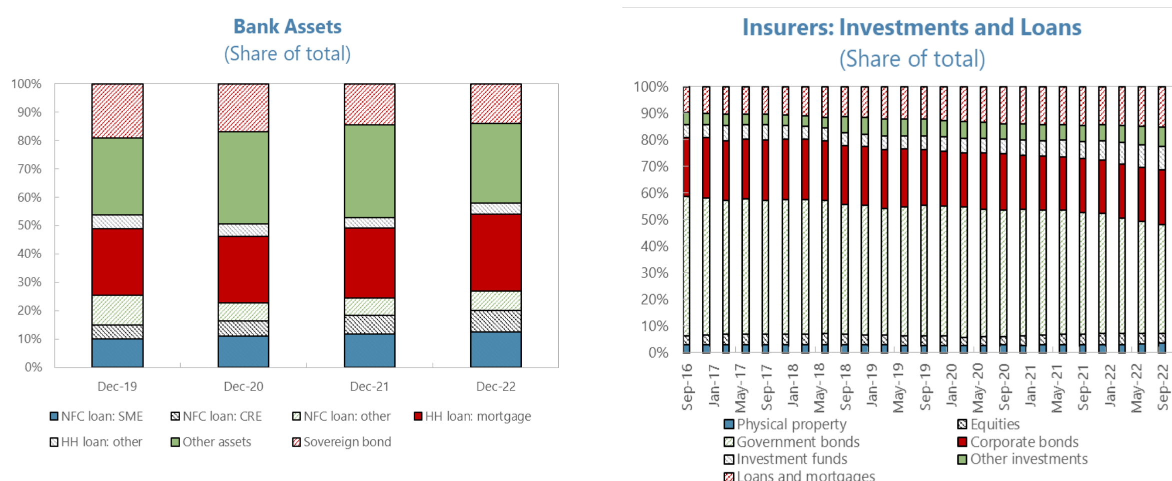
F. Assessment of Structural Vulnerabilities

49. The Belgian financial sector is large, concentrated in banking and dominated by four major banks. Banks represent over half of the financial assets, accounting for 210 percent of GDP, with the largest four (BNP Paribas Fortis, KBC bank, Belfius bank, ING Belgium) constituting more than 73 percent of banking sector assets. In contrast to the 10 SIs overseen by the SSM, the remaining 16 LSIs are smaller in size, only contributing to 3 percent of the market share. The presence of considerable of foreign ownership implies potential risks for the domestic financial sector as nearly half of banking sector assets are owned by foreign entities. Particularly during the episodes of economic turmoil, foreign entities may pull capital and/or liquidity from the Belgian market, undermining the stability of the financial system. Against this background, the NBB's power to provide inputs into strategic decisions of Belgian banks should be made use of when warranted to prevent an additional build-up of risks from a possible further rise in the concentration and interconnectedness of the financial sector. and should be operationalized as soon as feasible.



50. Financial sector exposures to real estate markets are sizeable whereas holdings of government debt have been scaled back in recent years (see Figure 14). Loans financing the purchase of residential dwellings by households and credit linked to CRE markets account for about a third of the total assets of banks, making balance sheets vulnerable to sharp corrections in real estate prices. Likewise, insurers have increased their lending business, including the provision of mortgages, although its share is still relatively moderate, at less than 15 percent of total investments held outside of index- and unit-linked business contracts. Adding loans with relatively longer maturities is beneficial for insurers from the perspective of achieving higher returns when interest rates were low, better matching the duration of assets with liabilities, and portfolio diversification, but also increases the sensitivity to swings in property prices. By contrast, banks and insurers have considerably reduced their investments in sovereign debt over the past decade, thereby lowering interlinkages between the public and financial sectors. Nevertheless, exposures remain sizeable, implying that any tensions in government debt markets are prone to rapidly propagate to the balance sheets of banks and insurers.

Figure 14. Belgium: Asset Structure of Banks and Insurers



Source: EBA, EIOPA, and IMF staff calculations.

Recommendations

51. The NBB should consider introducing a positive neutral CCyB and modify its CCyB framework accordingly if the introduction of such a buffer is deemed beneficial. The experience of recent years has shown that CCyB activation can be derailed by recurring economic shocks and high macro-financial uncertainty. Even if beneficial for financial sector resilience, raising the CCyB rate in an environment characterized by receding credit growth and subdued cyclical systemic risks may prove challenging in the context of the current CCyB framework and may be difficult to communicate. Switching to a positive neutral rate can help address such concerns. In addition, capital build-up when risks are not yet elevated ensures its availability to absorb losses in the event of sudden and unexpected macro-financial shocks, particularly if unrelated to the financial cycle. Lastly, banks hesitant to eat into regulatory buffers at times of stress may be more willing to make use of capital in support of lending to the real economy if it was explicitly maintained and can be released for that purpose.

52. The NBB should consider instituting a SSyRB against CRE-related bank lending once its appropriate calibration on the basis of yet to be collected additional data can be performed. In a European context, the exposure of banks to CRE risk is comparatively large, calling for a dedicated buffer to absorb potential losses if credit impairments from the traditionally more volatile CRE segment of the real estate market materialize. At the same time, assessing CRE exposures and their risks is more demanding than for the more homogenous RRE sector due to the variety of properties, such as offices, warehouses or shops, the diversity of debtors, like NFCs, project developers or investors, and the differing motivations for obtaining a loan collateralized by CRE, such as the borrowing by an NFC to attain working capital secured against a factory building or by an investor to purchase a commercial dwelling with the intention to achieve income and a positive return. Although the NBB has already assembled granular insights into the characteristics of the CRE portfolios of banks, important elements are still missing, most notably the probability-of-default and

loss-given-default ratios of CRE loans. Therefore, the NBB's efforts to improve the data basis for CRE should continue and – once sufficiently advanced – should support the establishment of an appropriately calibrated SSyRB to mitigate the possible adverse effects from a downturn in CRE markets for the banking sector.