INTERNATIONAL MONETARY FUND

IMF Country Report No. 23/388

BELGIUM

FINANCIAL SECTOR ASSESSMENT PROGRAM

FINANCIAL SYSTEM STABILITY ASSESSMENT

December 2023

This paper on Belgium was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on November 30, 2023.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
PO Box 92780 • Washington, D.C. 20090
Telephone: (202) 623-7430 • Fax: (202) 623-7201
E-mail: publications@imf.org Web: http://www.imf.org

International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

BELGIUM

FINANCIAL SYSTEM STABILITY ASSESSMENT

November 16, 2023

KEY ISSUES

Context: Economic activity has slowed, core inflation remains high, and the fiscal outlook is challenging. The financial sector has remained resilient despite a series of shocks. Belgium has made strong progress since the 2018 FSAP to enhance frameworks for financial sector oversight and crisis management. The National Bank of Belgium's (NBB) framework for bank supervision is well embedded in the Single Supervisory Mechanism framework and the Financial Services and Markets Authority (FSMA) has a well-developed framework for product and conduct supervision of banks and insurers. However, the NBB still lacks the powers to implement macroprudential tools without government approval.

Findings: Key financial stability risks emanate from the large, concentrated, and interconnected banking sector, private sector indebtedness, and high exposure to real estate. Bank solvency stress tests indicate that the financial sector is resilient under severe macroeconomic shocks. Although there is some heterogeneity across financial institutions, all banks would satisfy the minimum capital criteria. An acceleration in the migration of sight deposits to terms deposits would raise funding costs. Liquidity stress can be handled, but some banks need close monitoring. Non-bank financial intermediaries (NBFI) are resilient against adverse shocks.

Policy advice: The authorities should enhance the NBB's powers to set macroprudential policy in line with its financial stability mandate. In the near term, the extension/ setting of capital requirements should be streamlined, without the requirement for government approval. There is scope to strengthen the corporate governance framework and expectations for banks, and boost prudential supervisory staffing, especially given upcoming regulatory developments. Given its systemic importance it is essential that the Euroclear Bank (EB) continues to further enhance its IT and cyber security risk management. Crisis management and financial safety nets should be strengthened by (i) enhancing interagency and internal NBB coordination and cooperation; (ii) Finalizing the Rules of Procedure of the NBB Resolution Board, also giving attention to its capacity as a crisis management committee; and (iii) enhancing Emergency Liquidity Assistance (ELA) and the Deposit Insurance System (DIS).

Approved By
May Khamis and Mark Horton
Prepared By
Monetary and Capital Markets Department

This report is based on the assessment work under the Financial Sector Assessment Program (FSAP) conducted during March and June 2023. The findings were discussed with the authorities in June 2023 (the close of the FSAP) and in October 2023 (the Article IV Consultation).

- The FSAP team was led by Padamja Khandelwal (Mission Chief) and included: Dan Cheng, Andre Geis, Dirk Jan Grolleman, Ebru Sonbul Iskender (deputy mission chief), Argyris Kahros, Miguel Angel Otero Fernandez, Apostolos Panagiotopoulos, Kristel Grace Poh, Sergio Sola, Suzette Vogelsang, and Lu Zhang (all IMF), as well as Bernhard Mayr and Massimo Ferrari (IMF external experts). Zoltan Jakab contributed to the modeling of the adverse scenario. Ramanjeet Singh and Nchimunya Kabunda provided excellent administrative assistance. The FSAP team also collaborated closely with the EUR Article IV Consultation team.

- The team met with the Minister of Finance Vincent Van Peteghem, National Bank of Belgium (NBB) Governor Pierre Wunsch, Financial Services and Markets Authority (FSMA) Chairman Jean-Paul Servais and other senior officials of the Ministry of Finance, the NBB, the FSMA, the Deposit Guarantee Fund, the European Central Bank, and senior representatives of the public sector, banks, insurance companies, investment funds, actuaries, and auditors.

- FSAPs assess the stability of the financial system as a whole and not that of individual institutions. They are intended to help countries identify key sources of systemic risk in the financial sector and implement policies to enhance its resilience to shocks and contagion. Certain categories of risk affecting financial institutions, such as operational or legal risk, or risk related to fraud, are not covered in FSAPs.

- Belgium is deemed by the Fund to have a systemically important financial sector according to SM/10/235 (9/16/2010), and the stability assessment under this FSAP is part of bilateral surveillance under Article IV of the Fund's Articles of Agreement.

CONTENTS

TABLES

Glossary

ALM	Asset and Liability Management
AML/CFT	Anti-Money Laundering/Combating the Financing of Terrorism
AT1	Additional Tier 1
BRRD	Bank Recovery and Resolution Directive
CBC	Counterbalancing capacity
CCB	Centre of Cybersecurity Belgium
CCyB	Countercyclical Capital Buffer
CET1	Common Equity Tier 1
CPI	Consumer Price Index
CPSS	Committee on Payment and Settlement Systems
CRD	Capital Requirements Directive
CRE	Commercial Real Estate
CRR	Capital Requirements Regulation
CSD	Central Securities Depository
CSP	Critical Service Provider
DIS	Deposit Insurance System
DORA	Digital Operational Resilience Act
DSTI	Debt Service to Income
EAoL	Excess of Assets over Liabilities
E&C	Climate and Environmental
EB	Euroclear Bank
ECB	European Central Bank
ELA	Emergency Liquidity Assistance
EOF	Eligible Own Funds
ESA	Euroclear SA/NV
ESMA	European Securities and Markets Authority
EU	European Union
EVS	Espinosa-Vega-Sole
FIU	Financial Intelligence Unit
FMIs	Financial Market Infrastructures
FoF	Funds of Funds
FSA	Financial Sector Assessment
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSMA	Financial Services and Markets Authority
FSR	Financial Stability Report
FX	Foreign Exchange
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GMM	Global Macrofinancial Model
GRAM	Global Risk Assessment Matrix

HTM	Held-to-Maturity
IAIS	International Association of Insurance Supervisors
ICP	Insurance Core Principle
IF	Investment Fund
IOSCO	International Organization of Securities Commissions
IRRBB	Interest Rates Risk in the Banking Book
IT	Information Technology
JST	Joint Supervisory Team
LGD	Loss Given Default
LCR	Liquidity Coverage Ratio
LEG	Legal Department
LSI	Less Significant Institution
LTV	Loan to Value
MMF	Money Market Fund
ME	Mastercard Europe
MER	Mutual Evaluation Report
MoF	Minister of Finance
MREL	Minimum requirement for own funds and eligible liabilities
NBB	National Bank of Belgium
NBFI	Non-Bank Financial Institutions
NAV	Net Asset Value
NFC	Non-financial Corporate
NII	Net Interest Income
Non-II	Non-Interest Income
NPL	Non-performing Loan
NSFR	Net Stable Funding Ratio
OG	Oversight Group
PFMI	Principles for Financial Market Infrastructures
PD	Probability of Default
RRE	Residential Real Estate
SI	Significant Institution
SCR	Solvency Capital Requirement
SME	Small and Medium Enterprises
SPE	Special Purpose Entity
SRA	Systemic Risk Assessment
SRB	Single Resolution Board
SSM	Single Supervisory Mechanism
SSyRB	Sectoral systemic risk buffer
SSS	Securities Settlement System
STeM	Stress Test Matrix
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TCB	Third Country Branch
TLTRO	Targeted longer-term refinancing operation

UCITS	Undertakings for collective investment in transferable securities
VA	Volatility Adjustment
WEO	World Economic Outlook

EXECUTIVE SUMMARY

The FSAP was conducted against the backdrop of a cooling real estate market, increasing interest rates, and a weaker economic environment. Inflationary pressures and a rapid tightening of financial conditions have weakened activity and reined in credit demand. Amid high uncertainty, GDP growth is projected to slow in 2023 and 2024, before returning to potential over the medium-term.

Despite a series of shocks, the financial sector has remained resilient, but systemic risks are rising. Bank profitability and capital have surpassed pre-pandemic levels and liquidity buffers remain comfortable. The insurance and investment funds sectors have also weathered the pandemic well. The main financial stability risks emanate from the large, concentrated, and interconnected banking sector, private sector indebtedness, and exposure to interest rate risk and the residential and commercial real-estate sectors. Strengths include the strong net asset position of households, the relatively low overvaluation in real estate, and the strong customer deposit base of banks.

Bank solvency stress tests indicate that significant institutions (SIs) remain resilient under severe adverse conditions. Key risks in the adverse scenario encompass spillovers from an intensification of regional conflicts, recurrent energy crisis and supply disruptions, and monetary tightening that exacerbate an economic downturn and asset price corrections. A significant but plausible scenario suggests an initial two-year recession, resulting in the CET1 ratio declining from 18.3 percent to 14 percent. Although variations persist, particularly regarding asset and liability management (ALM) and net interest income forecasts, all banks would satisfy the minimum capital criteria.

Liquidity stress test outcomes reveal overall comfortable liquidity levels, but some banks need reinforcement. Banks show vulnerability to retail and wholesale deposits stress but are protected against market-driven stress. They rely heavily on deposits protected by the deposit guarantee scheme. Simulations reveal that banks can endure liquidity stress-driven asset sales, keeping CET1 ratios between 15 percent and 15.3 percent. The interconnectedness analyses show that domestic interlinkages are relatively modest, but vulnerability to an external shock is high.

There is scope for further improving the authorities' stress testing framework for banks by (i) integrating individual models within the stress testing framework to offer a comprehensive impact analysis on banks' profitability and capital adequacy, (ii) incorporating IFRS 9 Approach into Credit Risk Modeling, and (iii) continuing to adopt advanced analytical methods to better monitor ALM risks.

NBFI are resilient against adverse shocks. The insurance solvency stress test shows that the industry is generally resilient to the severe scenario, although improvements in the quality of capital are desirable. Real estate exposures are a significant driver of the drop in insurers' solvency ratio. Insurers' liquid assets are sufficient to withstand significant redemptions, but results show high levels of dispersion. The investment fund liquidity stress tests reveal that the sector largely would be able to withstand severe but plausible redemption shocks. The FSMA is recommended to develop a stress testing framework with the results feeding into the NBB's systemic risk assessment.

The authorities achieved notable progress since the 2018 FSAP especially on the financial sector oversight framework, although some recommendations are pending. Some FSAP recommendations, including on strengthening the NBB's macroprudential powers and regulatory and supervisory powers on SWIFT, and aspects of bank resolution and intra/interagency crisis readiness remain to be completed.

The NBB's ability to set macroprudential policy at the national level should be strengthened by removing the need for government approval. The powers of the NBB to set macroprudential policy should be aligned with its financial stability mandate in the medium term and should give it full discretion over capital- and borrower-based instruments. A consultative role for the Ministry of Finance should be retained. In the near-term, decisions on capital-based CRD/CRR measures should be the sole prerogative of the NBB at the national level, removing the requirement for government approval. These changes would allow the NBB to address systemic risks in a timely manner.

The financial oversight framework is strong, with some potential for further enhancements. There is scope for the NBB to: further improve the corporate governance framework of banks, monitor the banks' internal capital targets, ensure adequate supervisory staffing, and harmonize internal processes across departments. Consumer protection and conduct information could be collected more structurally and should feed into the Supervisory Review and Evaluation Process (SREP). The already strong collaboration between the NBB and the FSMA can be strengthened. The regulatory and supervisory framework for the insurance sector can be enhanced further. Large exposures to real estate and mortgages call for closely monitoring the quantity and quality of mortgage loans and issuing guidance on their prudent valuation. Climate resiliency would be strengthened by finalizing the legal framework for public-private partnerships for natural catastrophe risk. The conduct of business supervision can be enhanced by increasing reporting requirements and publishing conduct data to benefit the industry and consumers. EB should continue to improve management of specific risks, including IT and information security risk management. Resources for Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) supervision should be increased, and the sanctions framework strengthened.

While there has been good progress since the 2018 FSAP on resolution and crisis preparedness, there is scope for further improvement. The Rules of Procedure of the NBB Resolution Board and the national resolution handbook should be finalized, with particular attention to resolution tools that are not part of the preferred resolution strategies given recent international experiences. The ELA framework should be reinforced further for banks in resolution, cooperation arrangements with other national central banks should be sought, and the potential ELA provision to NBFIs should be clarified. The NBB's internal coordination and cooperation should be further strengthened. Additionally, the draft law to segregate the DIS fund from government funds and increase its target size should be approved, while the public backstop should be operationalized. Once segregated, the DIS fund should have an investment policy aligned with best international practices. The DIS should also ensure operational readiness to meet 7 working days for pay-outs and start operationalizing its paybox plus mandate.

Table 1. Belgium: FSAP Key Recommendations			
	Recommendation	**Addressee**	**Timing[1/]**
Systemic Risk Assessment			
1.	Further strengthen the NBB's Stress Testing Framework by (i) integrating individual models within the stress testing framework to offer a comprehensive impact analysis on banks' profitability and capital adequacy, (ii) incorporating the IFRS 9 Approach into Credit Risk Modeling and, (iii) continuing to adopt advanced analytical methods to better monitor ALM risks. ¶23, 26	NBB	MT
2.	The NBB and the FSMA to establish a formal agreement for sharing data on investment funds' portfolio holdings and supervisory data. The FSMA to develop and adapt a stress test framework to assess structural vulnerabilities and risks in the investment funds sector, and to be integrated into the NBB's systemic risk assessment. ¶33	FSMA NBB	C, MT
3.	Increase insurers' resilience against macro-financial shocks, by i) engaging with industry to reduce dependence of insurers on lower tier capital and ii) implementing liquidity stress tests and scenario analysis to identify potential sources of stress. ¶30	NBB	MT, NT
Macroprudential Policy[2/]			
4.	In the medium-term, align the powers of the NBB to set macroprudential policy at the national level with its financial stability mandate by giving it full discretion over the activation and calibration of all 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. ¶37, 38	Government	MT, NT
5.	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. ¶39	NBB, Government	NT
6.	Strengthen the NBB's systemic risk assessment framework for setting macroprudential policy by closing data gaps and ensuring stronger integration of data and quantitative tools with instrument design and selection. ¶41	NBB	MT
Banking Regulation and Supervision			
7.	Strengthen banks' corporate governance framework and expectations, in particular the supervisory function of the board. ¶44	NBB	NT
8.	Harmonize, taking into account best practices, and ensure risk sensitivity of internal supervisory decision-making processes across departments. ¶45	NBB	NT
9.	Maintain adequate prudential supervisory staffing for LSI supervision, structurally collect consumer protection and conduct information to feed into the SREP and monitor banks' own capital targets systematically. ¶45	NBB	NT
Insurance Regulation and Supervision			
10.	Finalise the legal framework of the natural catastrophe public-private partnership to enhance predictability of the natural disaster related insurance cover. ¶48	MoF	NT
11.	Provide guidance for the consistent valuation of mortgage loans. ¶50	NBB	MT
12.	Contact third country supervisors to assess the basis for sharing and collecting information. ¶47	NBB	NT
13.	Engage Government to obtain legal powers to introduce regular complaints reporting by insurers. ¶50	Government/FSMA	I

Table 1. Belgium: FSAP Key Recommendations (concluded)			
	Recommendation	**Addressee**	**Timing**
Euroclear Bank Assessment			
14.	EB should undertake substantial efforts to continue to improve the comprehensiveness and sufficiency of its IT and information security risk management, including cyber security risk, and more clearly and thoroughly defining and steering the management of these risks at the level of the Board as a top priority. ¶52	EB	NT
15.	Beyond relying on direct participant disclosure, EB should develop capacity for increasing the transparency with respect to the business of its direct participants' clients. ¶53	EB	NT
16.	EB should put in place more robust testing of procedures related to business continuity and participant default procedures, including through simulation exercises. ¶54	EB	NT
Crisis Management and Financial Safety net			
17.	Finalize the Rules of Procedure of the NBB Resolution Board, giving also attention to its capacity as a crisis management committee. Finalize the national resolution handbook, with attention also to the resolution tools that are not part of the preferred resolution strategies, as well as the resolution powers. ¶58, 59	NBB	I
18.	Strengthen NBB's internal coordination and cooperation for crisis management by establishing an interdepartmental cooperation mechanism with representatives from relevant departments at technical level for the NBB and prepare two bilateral cooperation agreements between the Resolution Unit and the Financial Stability and Supervisory Departments respectively. ¶58	NBB	I
19.	Enhance the ELA framework by: i) Seeking cooperation arrangements with other relevant National Central Banks for ELA involving a cross-border banking group; ii) Developing policies to assess the prospective solvency and document the lines of action and responsibility of each actor in the event of ELA in resolution, subject to a credible resolution strategy; and iii) Preparing internal planning and documenting how the NBB would consider ELA to NBFIs. ¶60	NBB	NT, I, NT
20.	Enhance the Deposit Insurance System by: i) Ensuring operational readiness to meet the target of 7 working days for pay-outs; ii) segregating the DIS fund from the national budget, increasing its target level and operationalizing the public backstop. Once segregated, develop an investment policy for the DIS Fund aligned with best international practices; and iii) start working on the operationalization of the paybox plus mandate. ¶61	Guarantee Fund	I, I, NT
Financial Integrity			
21.	Amend regulatory framework to make the NBB a member of the national committee on Terrorist Financing. ¶57	Relevant ministers	I
22.	NBB to increase resources for AML/CFT supervision, enhance the sanctions framework and its implementation, and continue to exercise enhanced supervision over the payment institutions sector. ¶57	NBB	I

[1/] Timing: C = Continuous; I = Immediate (within one year); NT = Near Term (within 1-3 years); MT = Medium Term (within 3–5 years).
[2/] For purposes of macroprudential policy, 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 policies.

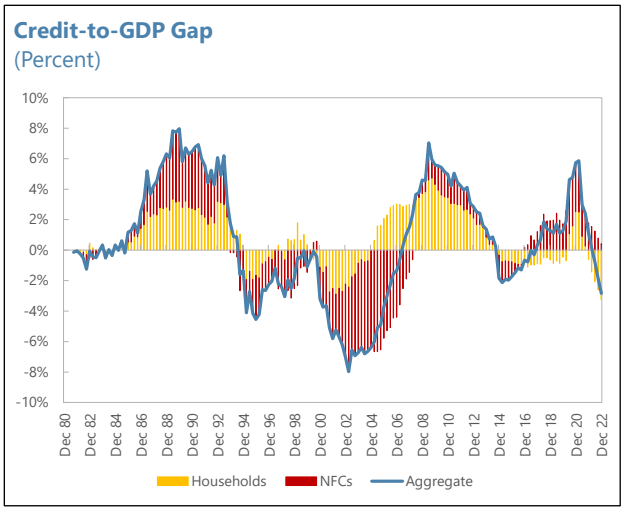
BACKGROUND

A. Context and Macrofinancial Developments

1. Economic activity has slowed, core inflation remains high, and the fiscal outlook is challenging. Inflationary pressures, rapidly tightening financial conditions, waning confidence, and elevated uncertainty have weakened activity and reined in credit demand (Table 3, Figure 1). Wage and benefit indexation, a robust labor market, and government support to households and firms have provided a boost. High deficits and rising government debt challenge fiscal sustainability. GDP growth is projected to slow in 2023 and 2024, before returning to potential over the medium-term.

2. The financial sector has remained resilient despite a series of shocks. Bank performance is broadly aligned with OECD comparators (Figure 2) and profitability and capital have surpassed pre-pandemic levels, as NPLs and bankruptcies have not materialized. At end-2022, banks' capital adequacy ratio, dominated by CET1, stood at 20.1 percent (Figure 3, Table 4).[1] Retail deposits (60 percent insured) are the main funding source of banks. Liquidity buffers remain comfortable, despite repayments of ECB's TLTRO loans and the recently issued one-year state bond triggering some outflows of household savings deposits. The insurance sector is profitable and solvent, in line with the euro area (EA) average (Figure 4). Investment funds remained resilient through the pandemic. Recent bank failures abroad had limited impact on Belgian banks.

3. House prices and mortgage debt have steadily increased, heightening systemic risks. Domestic credit has risen from 75 percent of GDP to nearly 85 percent of GDP since the Global Financial Crisis (GFC). The credit-to-GDP gap turned slightly negative in 2022Q2 on lower contributions from both the household and corporate sectors. The turn in the credit cycle has been orderly so far. Increases in residential (RRE) and commercial (CRE) real estate prices have remained below other EA countries with valuations appearing less stretched. Available model-based estimates indicate house prices being approximately 10 percent (NBB) and 15 percent (ECB) above their fundamentals (Figure 5 and 6).



[1] CET1 ratio is 17.3 percent at year-end 2022.

B. Financial Sector Landscape

4. Banks dominate a financial sector that has changed little since the previous FSAP. Banks account for 50 percent of financial sector assets (220 percent of GDP). Captive financial institutions (CFI), a large but shrinking part of the financial system, maintain only limited links with other intermediaries.[2] Insurance companies (59 percent of GDP) and non-money market investment funds are the two largest NBFI sub-sectors (Table 5). Other financial intermediaries include private equity, equity funds, and financial institutions that are subsidiaries of banks. Outstanding debt securities (mostly government) are approximately 139 percent of GDP. The market value of listed shares is about 59 percent of GDP (Figure 7).

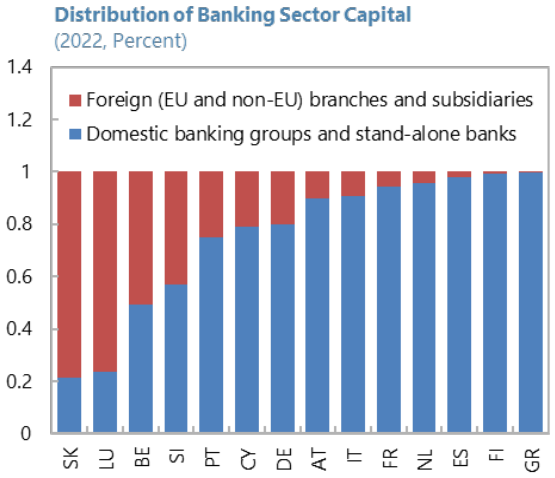
Financial Sector Structure

	2018Q4		2022Q4	
	Million euro	Share of GDP	Million euro	Share of GDP
Deposit taking corporations 1/	963,590	209	1,213,260	220
Money market funds	12,226	3	7,458	1
Non MMF investment funds	155,071	34	203,093	37
Other financial intermediaries 2/	179,552	39	164,545	30
Financial auxiliaries	55,051	12	69,636	13
Captive financial institutions	406,902	88	422,288	77
Insurance corporations	312,628	68	323,305	59
Pension funds	33,857	7	39,343	7
Total	2,118,877	461	2,442,927	443

Source: NBB

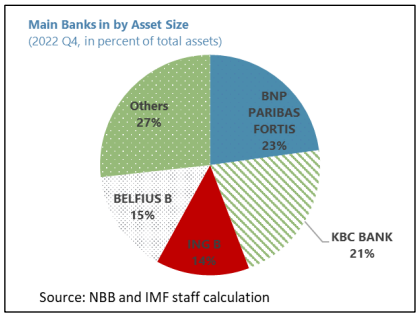
1/Deposit taking corporations excludes the central bank.

2/Other financial intermediaries excludes insurance corporations and pension funds



Sources: ECB and IMF staff calculations.

[2] CFIs (e.g., nonfinancial holding companies, corporate treasury centers) are established by international companies to benefit from tax advantages in Belgium.



5. The banking sector is concentrated, with high foreign bank presence. There are 30 domestic licensed credit institutions, 46 European Economic Area (EEA) and five non-EEA branches in Belgium. The four largest banks account for 73 percent of assets. Foreign ownership in the banking sector is 48 percent.[3] Ten banks with 78 percent market share are identified as Significant Institutions (SIs) and are supervised by the Single Supervisory mechanism (SSM).[4] 16 Less Significant Institutions (LSIs), with a 3 percent market share excluding Euroclear Bank (EB), are supervised by the NBB with ECB oversight.[5] While on average LSIs' capital adequacy, profitability, and liquidity ratios stood higher than SIs at the end of year 2022, the group constitutes diverse banks with different business models (Figure 8). The few digital-only banks are small. Incumbent SIs' digitalization level is strong. New players in fintech emerged mostly in the payments area.

6. Some large banks are connected to insurers. Large banks offer insurance products through subsidiaries or within-group insurance companies, with a market share of 17 percent. Insurance companies that are part of banking groups invest in mortgage products mostly through acquiring existing books of mortgage loans. The top ten insurers account for nearly 70 percent of premium income. The number of insurers has been declining mainly due to mergers and acquisitions. The market is dominated by composite insurers, complemented by some smaller specialized insurers. Derivatives exposures are concentrated among a few insurers, and duration gaps between assets and liabilities are small.

7. Investment funds with characteristics that make them susceptible to runs, have assets of about 28 percent of GDP. [6,7] They are dominated by non-equity investment funds, including mixed funds exposed to several asset classes. Public open-ended investment funds (OEFs) are almost entirely plain UCITS sold to retail investors, with low leverage as well as limited exposure to derivatives and off-balance sheet activities. Overall, there are signs of potential liquidity mismatches, as the liquidity offered to investors may be greater than the liquidity of the assets held, especially in the short term (Figure 9). Following the pandemic, almost all publicly offered OEFs have adopted liquidity management tools (LMTs).

8. The NBB is the overseer of globally systemic financial market infrastructures (FMIs) as well as critical service providers (CSPs). EB is a globally systemically important Central Securities Depository (CSD) and Securities Settlement System (SSS) located in Belgium. Mastercard Europe

[3] Includes foreign branches and subsidiaries.

[4] Excluding foreign branches, SIs' market share is 88 percent.

[5] EB assets have risen from €29 billion to €129 billion during 2022, reflecting the accumulation of frozen Russian assets on its balance sheet.

[6] These are Belgian funds that are included in the Economic Function 1 (EF1) based on the FSB classification.

[7] The assets under management (AuM) of Belgian investment funds susceptible to run risks were approximately €151 billion at end-2022. Non-Belgian investment funds offered in Belgium are not covered in the FSAP.

(ME) is the operator of a systemically important payment system, accounting for 52 percent of euro-denominated cross-border payments. The Society for Worldwide Interbank Financial Telecommunication (SWIFT), a CSP for FMIs across the world, provides financial messaging services to customers in 200 countries.

9. Most recommendations from the 2018 FSAP have been implemented but some are pending (Table 2). The FSAP recommended strengthening the NBB's macroprudential powers. While no progress has been made, the NBB has intensified cooperation with the Ministry of Finance regarding macroprudential decision making. The SWIFT Oversight Group (OG)—with the NBB as lead overseer—considered moral suasion to be sufficient to carry out the SWIFT oversight function, discounting a recommendation to enhance regulatory and supervisory powers, yet a strengthening of the oversight powers is now under consideration following the war in Ukraine. Finally, while there has been progress on bank resolution and crisis preparedness, improvements are needed for the deposit insurance system (DIS), emergency liquidity assistance (ELA), and some aspects of bank resolution and intra/interagency crisis readiness.

C. Financial Sector Vulnerabilities and Risks

10. Rapidly rising interest rates may pose financial sector challenges (Figure 10). Following the rise of the ECB's monetary policy rates, assets of banks have begun to reprice slowly as a considerable part of bank assets are in long-term fixed rate mortgages. Increases in deposit rates have remained rather modest, improving net interest margins. Pressure to raise remuneration on deposits, the most important funding source of banks, has risen. Particularly the issuance of a one-year, favorably taxed, state bond in August 2023, proved popular as it offered a favorable return.[8] Funding costs of banks have also been affected by the phase-out of the ECB's favorably priced liquidity facilities. Available-for-sale and held-to-maturity (HTM) bonds are only a small share of total assets, curbing the sovereign-bank nexus and risks for the solvency position of banks.[9] For insurers, investment in government (40 percent) and corporate (20 percent) bonds outside their unit-linked business are large, yet with limited exposure to interest rate risk due to small duration gaps. Holdings of loans, including long-duration mortgages, have risen, accounting for around twelve percent of total assets.

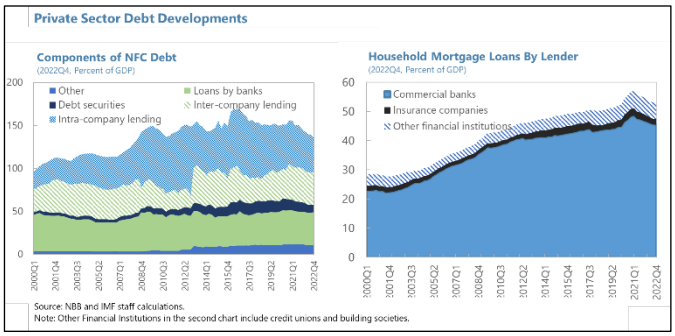
11. Rising household debt is a concern, also due to its links with housing market developments and substantial financial sector mortgage exposures. Household debt has risen from less than 40 percent to more than 60 percent of GDP over the past two decades, as mortgage lending has expanded. Residential mortgages feature prominently on the balance sheets of banks (a fifth of total assets, 55 percent of GDP) and, to a lesser extent, insurers (5 percent of investments). Riskier segments of mortgage lending with elevated LTV and DSTI ratios may become vulnerable should the macro-financial environment deteriorate, particularly if unemployment rises steeply or

[8] The bond raised €22 billion, largely originating from the about €300 billion in household savings deposits, which constitute around half of the private non-financial sector deposits of banks resident in Belgium.

[9] Debt securities constitute 10 percent of total assets. Unrealized losses from HTM bonds correspond to 2 percentage points of the CET1 ratio at end-2022.

the cooling of the housing market turns into a sharp correction.[10] Several characteristics of housing and mortgage markets offer comfort. Real estate valuations remain lower than in peer economies, and fixed-rate and fully amortizing mortgages are widespread. Household financial positions appear strong due to a robust labor market, automatic wage indexation, pandemic excess savings and financial assets far surpassing liabilities. The NBB's prudential guidelines imposing tighter LTV and DSTI limits on housing loans originated by banks and insurances since 2020 and additional bank capital maintained against residential mortgage lending since 2013 have contributed to lessening financial sector risks from housing-related exposures.

12. Corporate debt has remained comparatively stable, but pockets of vulnerability may emerge. Aggregate NFC debt, at 136 percent of GDP, is dominated by company-to-company lending, accounting for nearly 60 percent of the total.[11] The remainder has increased modestly over the past two decades and is characterized by a strengthening of credit quality since end-2019 despite a series of economic shocks (Figure 11). However, cost pressures from commodity prices and automatic wage indexation have weighed on businesses while rising interest rates have raised their financing costs, rekindling credit risk concerns, especially for corporates with weaker profitability and debt servicing capacity.



13. Banks and insurers are vulnerable to a turn in the CRE cycle. CRE markets in Belgium have shown less volatility than in neighboring economies. Particularly the rather steady prices of the (dominant) office segment in combination with relatively low vacancy rates have kept valuations comparatively attractive. However, within the euro area, the loan portfolio of Belgian banks is among the most exposed to CRE collateralized NFC lending, at 15 percent of GDP or more than a fourth of total NFC credit. While nearly three quarters of the outstanding stock of CRE exposures show LTV ratios of less than 60 percent, over a tenth maintain a level above 80 percent. Among insurers, CRE accounts for 12 percent of the investment portfolio. A worsening of CRE market dynamics driven by weaker economic activity and/or structural changes, may put some strain on the financial sector. Falling operating incomes of CRE may undermine the debt servicing capacity of borrowers and erode recoverable collateral values in case of default.

[10] According to the 2021 Household Finance and Consumption Survey (HFCS), about 16 percent of outstanding mortgage loans have 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 debt service. More than a fifth of households, accounting for around a fourth of outstanding mortgages, lack the liquidity for more than six months of debt service.

[11] The NBB considers that company-to-company lending implies little to no macro-financial risks. Lending between entities of the same firm (intra-company) and by CFI is unlikely to be cut off as it would undermine parts of the same enterprise. Moreover, such activities interact with Belgian financial intermediaries only at the margin. Loans granted by the non-bank foreign sector may entail some refinancing risk.

14. Banks exhibit a moderate degree of interconnectedness with rest of the world, with foreign claims of 50 percent of GDP (Figure 12). Cross-border exposures are predominantly concentrated in (over 60 percent) the Czech Republic, the U.K., the Netherlands, France, and Slovakia, with a primary focus on non-financial sectors.[12] Domestic exposures of Belgian banks are concentrated in the household, government, and NFC sectors, making up 61 percent of total domestic exposures.

15. Challenges remain for bank resolution. Recent international experiences highlight that even small banks could potentially pose systemic risks, reemphasizing the need to flexibly adjust resolution tools and the importance of liquidity provision in resolution. In addition, while the objective of the resolution framework is to protect public funds, a tail event involving the use of public money could significantly heighten debt sustainability risks given the already high level of public debt (104.3 percent of GDP as of Dec-2022).

16. EB is a highly interconnected and globally systemic FMI that is directly connected to exchanges, multilateral trading facilities (MTFs), as well as other FMIs. It is the most active CSD globally and one of the largest in terms of value of securities held. Any disruption in EB's activities would have large spillovers for global financial markets and carry reputational risks for EB, and Belgian and European regulatory authorities. Since early 2022, the foreign assets linked to Russian entities as well as securities issued by Russian entities have been blocked at EB owing to sanctions and countersanctions. This has raised litigation, operational, and reputational risks for EB, as well as broader risks to financial stability. These risks are on top of the legal and reputational risks associated with compliance to sanctions regimes.

17. Cyber risks to the financial sector are heightened particularly in the context of the war in Ukraine. The Centre of Cybersecurity Belgium (CCB), which was established in 2014, coordinates and monitors the Belgian cyber security strategy. The Belgian Network and Information Systems (NIS) law came into effect in 2019 aiming to improve the security of critical Network and Information Systems, in six different sectors, including finance and digital infrastructure.

18. The NBB has set up a cross-departmental Climate Hub, focused on creating awareness and gathering data. Its activities include prudential policy and supervision of climate and environmental risks, research studies on climate- and sustainability related matters, developing statistical indicators, and integrating ESG criteria in its investment portfolio. The Climate Hub's work involves the publication and updating of a climate risk dashboard, providing the broader public with information on the consequences of climate change and the transition to net zero emissions. Currently, the Climate Hub focuses on increasing the quality and quantity of the data and is starting to assess the risks within the current regulatory framework. In this regard, financial institutions are required to report information related to energy efficiency of real-estate exposures.

[12] Non-financial sectors here refer to official sector, NFCs, and households.

SYSTEMIC RISK ASSESSMENT[13]

19. Stress test exercises were undertaken to assess the resilience of the financial system using baseline and adverse macroeconomic scenarios (Table 6, Figure 13). The exercises focus on the banking, insurance, and investment funds sectors and cross-sectoral exposures are explicitly considered. The baseline scenario is aligned with the April 2023 World Economic Outlook projections. The adverse scenario reflects the main risks in the risk assessment matrix, including some Belgium specific layers (Table 7).

A. Banking Sector Resilience

Solvency

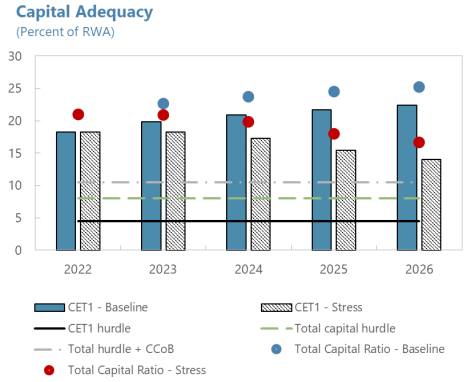
20. The FSAP solvency stress test is a top-down exercise that covers all seven SIs accounting for 90 percent of the banking sector assets. Five are domestic banks, and two subsidiaries of large foreign banking groups. The exercise is based on the IMF's internally developed solvency stress-testing framework (Table 8). The stress test includes a comprehensive set of risks, including, credit and market risk (equity, foreign exchange (FX), commodities, real-estate and interest rate risk), and income projections.

21. Banks appear resilient to severe macrofinancial shocks.[14] In the baseline, the aggregate CET1 capital ratio is on an upward trajectory due to banks' revenue-generating capacity from the gradual increase in the base rate, as well as low credit impairments. The system's aggregate CET1 capital ratio would increase from 18.3 to 22.4 percent between 2022–26. In the adverse scenario, the aggregate CET1 capital ratio declines by 4.3 percentage points to 14 percent at end-2026. Banks record weaker profits in the first year on average, and losses in the last three years of the scenario. The decline in the capital ratio is mainly a result of credit impairments on mortgage lending, which constitutes the largest lending category. This impact is exacerbated by the considerable shock in property prices in the scenario. Although market risk losses contribute negatively to profitability and capital, they are not the main drivers of the results. All banks meet the minimum capital requirements and one bank does not meet its CCoB/O-SIIB.

[13] Detailed methodology on the stress test can be found in the technical note of the systemic risk analysis.

[14] These shocks include intensification of regional conflicts which exacerbate the energy crisis and disrupt supply chains, resulting in persistent inflation and further monetary tightening. This further leads to a significant economic downturn, with negative spillover effects across trade, financial channels, and markets. Sharp fluctuations in real interest rates, risk premia, and asset prices lead to market dislocations and adverse cross-border spillovers. Despite some fiscal support in advanced economies, the impacts remain significant.

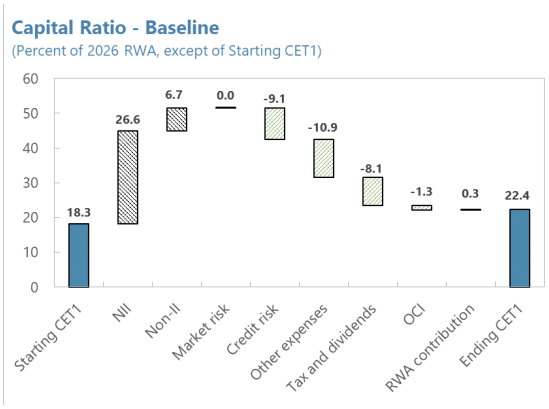
Solvency Stress Test Results

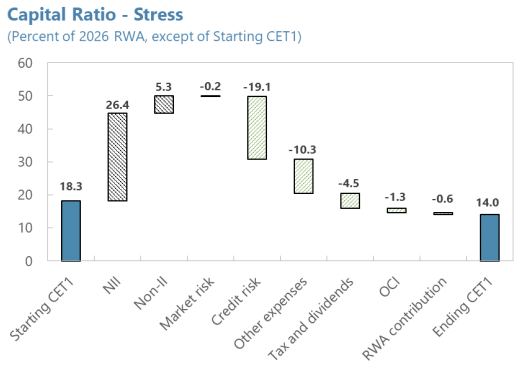


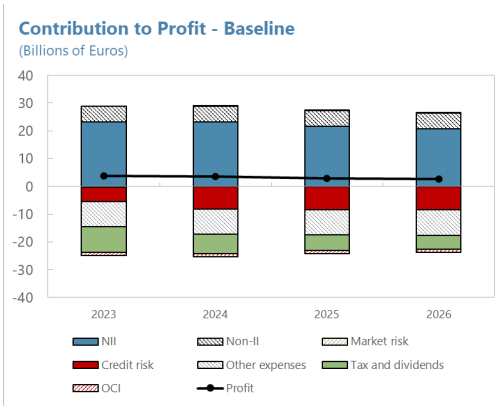
I. Capital adequacy: *All banks have been highly capitalized in the start of the stress test. CET1 sufficiently covers the minimum capital requirements, and it continues being sufficient during both scenarios. In the adverse scenario, capital decreases until 2026.*

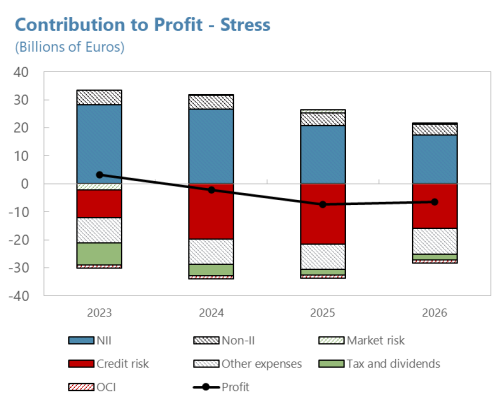
II. Capital flow: *During the stress scenario, the most important factor that contributes to the overall decrease of the capital ratios is credit impairments.*

III. Contribution to profit: *The main factor that weakens profitability during the stress is the increase in credit impairments. This is counterbalanced by the increase in the NII.*







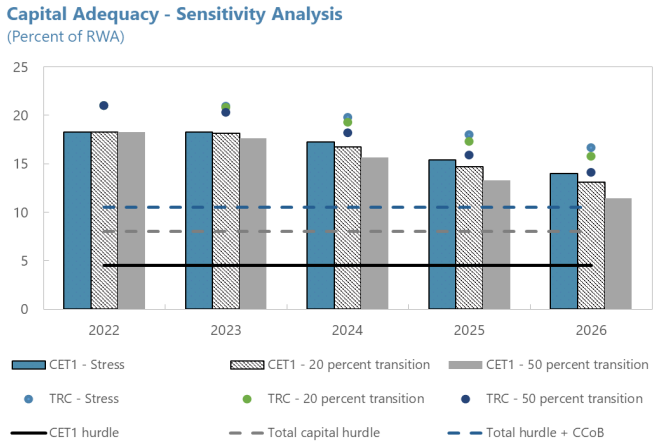


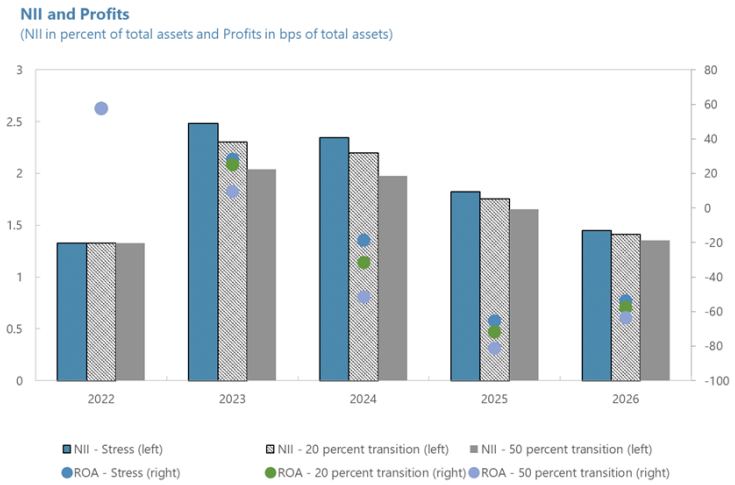
Source: IMF staff calculations.

22. Sensitivity analysis shows that a significant increase in conversion of bank non-term deposits to term deposits would raise funding costs and impact profitability. Given the significant rise in net interest income (NII) during the adverse scenario due to the surge in interest rates, a sensitivity analysis was conducted. The analysis hypothesized two situations, on top of the

adverse scenario, wherein 20 percent and 50 percent of a bank's non-term deposits are converted to term deposits, respectively. Throughout the four years, the 20 percent conversion scenario revealed a decreasing trajectory for the CET1 ratio, dropping to 13.1 percent. Correspondingly, NII over total assets and Return on Assets (ROA) followed a downward trend. One bank did not meet the minimum capital requirements. The shortfall is attributed to the higher rates observed for term deposits in year zero, which continue to augment throughout the stress period. The 50 percent transition scenario resulted in a more pronounced decrease in the CET1 ratio to 11.5 percent at the end of year four. Similar to the "20 percent transition" scenario, one bank did not meet the minimum capital requirements.

Sensitivity Analysis Results





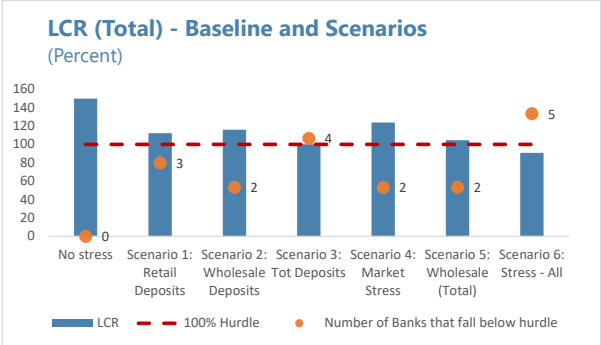
Source: IMF staff calculations.

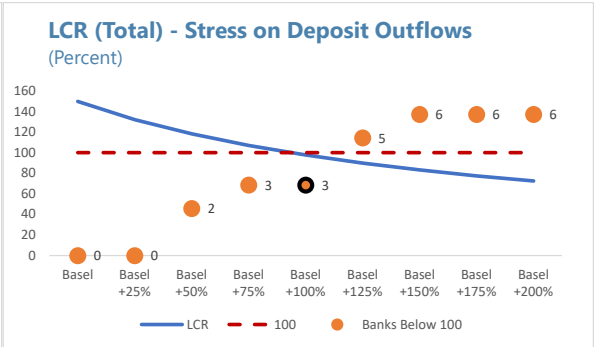
23. These results highlight the impact of changes in depositor behavior and subsequent shifts in banks' ALM structures. The analysis underscores the importance of managing such risks and incorporating them into stress testing exercises.

Liquidity

24. Banks are found to be susceptible to stress originating from the retail and wholesale sectors, while they are relatively insulated from market-driven stress. In general, the initial LCR position helps banks withstand shocks in every scenario. On the other hand, the system wide LCR falls below the regulatory threshold when Basel coefficients are doubled, and an increasing number of banks exhibit LCR below 100 percent when coefficients are increased by 50 percent (LCR results—righ panel).

LCR Stress Test Results[1]





Cash Flow Analysis Scenarios

	Haircuts	Inflows & Outflows
1. Market Stress	High	Low
2. Retail and Wholesale Stress	Low	High
3. Combined Stress	High	HIgh

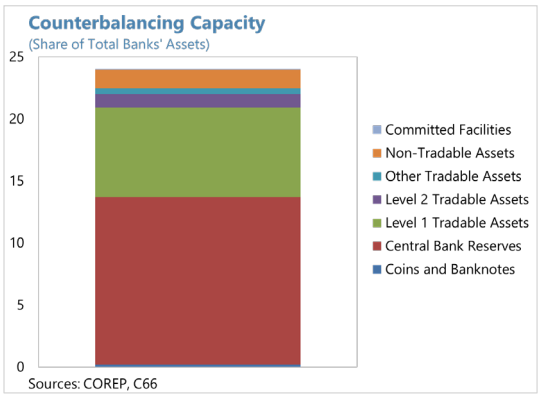
[1] Left chart shows six simulated scenarios incorporating varying degrees of stress on asset values, inflows and outflows. Right chart shows sensitivity analysis by changing the Basel coefficients for LCR.

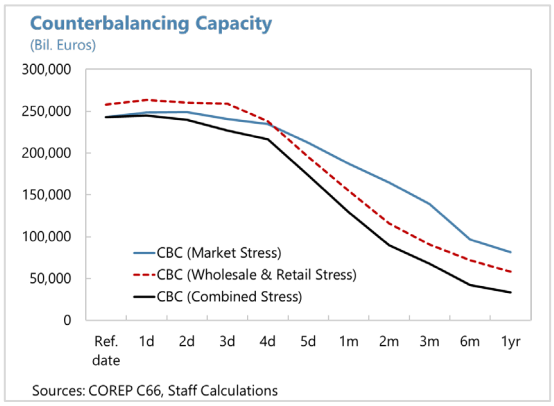
25. The cash flow analysis demonstrates that even in the most extreme scenario, the system maintains an adequate level of counterbalancing capacity. Consistent with the findings from the LCR analysis, while banks are well protected against market-induced stress, some of them are vulnerable to liquidity strains caused by deposit outflows (Cash Flow Analysis—bottom panels). The analysis also reveals that the two banks facing liquidity shortages have lower initial counterbalancing capacity as a proportion of their total assets. A currency-specific cash flow analysis

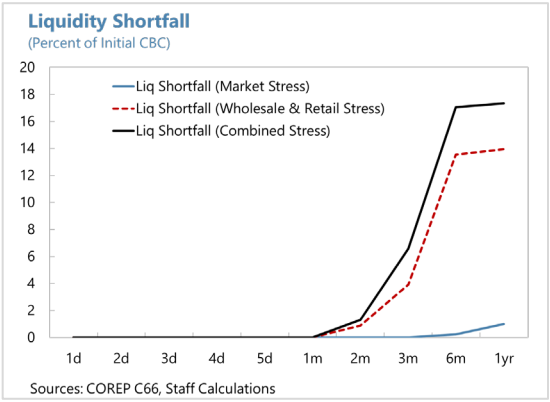
shows that out of the four banks analyzed, two face dollar liquidity shortages very early-on, while the other two have sufficient counterbalancing capacity.

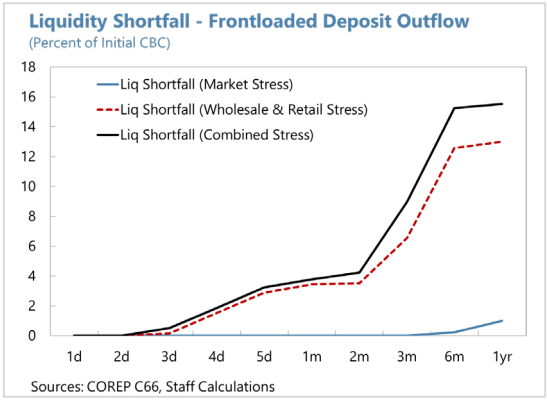
26. The liquidity stress test results show that liquidity levels are comfortable for the system but need to be reinforced for some banks. Most importantly, banks which have lower buffers need to enhance their liquidity positions, especially by bolstering their stock of high-quality liquid assets. By doing so, they can improve their ability to withstand adverse scenarios and mitigate potential liquidity strains. To this end, regulators, might consider enhancing their supervision and monitoring of liquidity risks, for instance by closely monitoring risks indicators other than LCR, conducting regular assessments, and continuing to develop analytical methods to better monitor ALM risks. The regulators could also issue guidelines to encourage banks to adopt sound liquidity management practices and conduct regular reviews of banks' liquidity risk management frameworks and contingency plans.

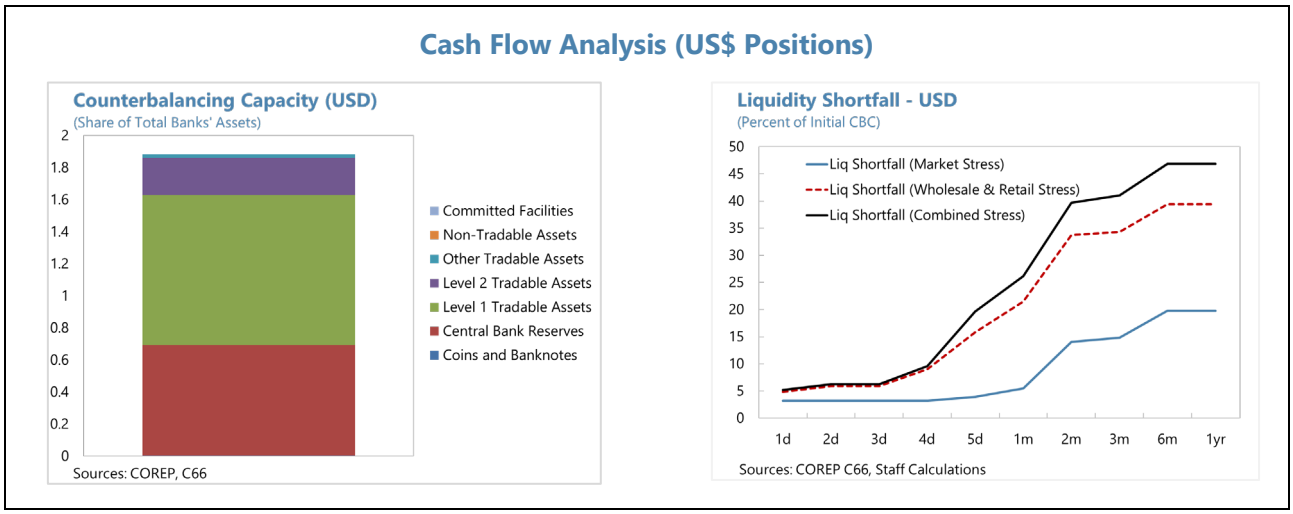
Cash Flow Analysis











Solvency-Liquidity Interaction

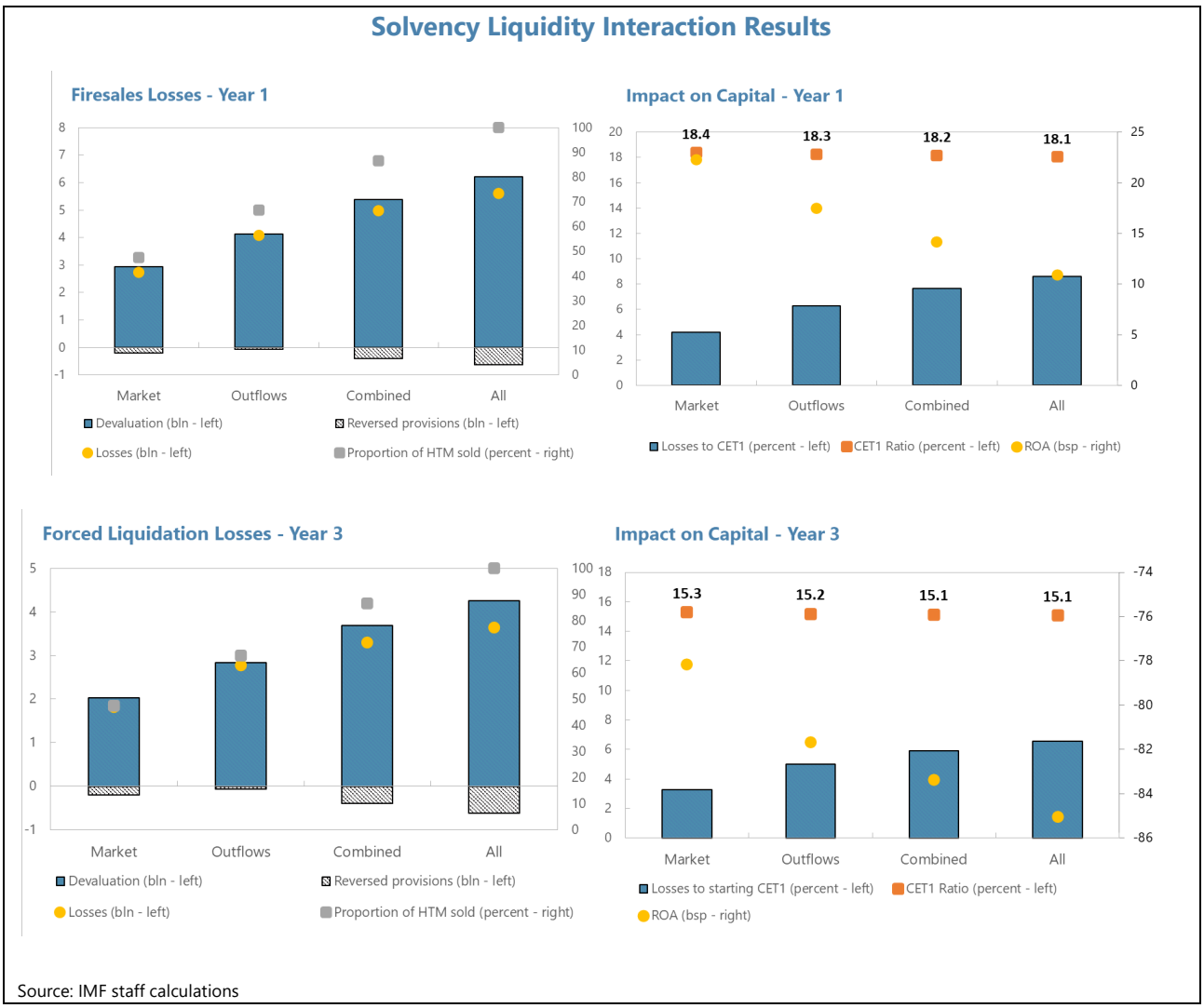
27. The interplay of solvency and liquidity risks under stress conditions is examined, using the established macrofinancial scenario, solvency analysis, and cash-flow analysis. The core hypothesis is that banks under acute liquidity stress may choose to sell assets from their HTM (making up 71 percent of total debt securities in the banking sector) portfolio at market value, marking a devaluation from book value. However, devaluation losses are partly mitigated by the respective reduction of RWAs and the release of the respective credit provisions due to the liquidation. This action is considered only after exhausting all tradable counterbalancing capacity. This exercise unrealistically assumes that banks are unable to use collateral and procure liquidity from the ECB, but is useful to discern the banks' capacity to withstand losses from HtM forced liquidations

28. This examination highlights the ability of the banking sector to uphold regulatory capital requirements in stringent conditions. The impact of forced liquidation on the sector's solvency is manageable. While CET1 ratios decline due to lower profits, the ratios remain robust, showcasing the banking sector's resilience. This analysis is a supplementary tool to enhance our understanding of the impact of liquidity stress on solvency.

B. Insurance Sector Resilience

29. The stress test on insurance companies reveals that the industry is able to withstand the severe scenario, but there is scope to gradually improve the quality of insurers' capital. The median solvency ratio drops from a healthy 192 percent before stress to 113 percent after stress. Including reactive management actions, the new median solvency ratio is 142 percent. The insurers benefit substantially from the assumed increase in the volatility adjustment (VA) in the stress scenario. There was a significant impact on insurers' eligible own funds, which decreased by 43 percent. While Belgian insurers' tier 1 capital is generally sufficient to cover the SCR, tiering limits can become a constraint and limit the choice of available reactive management actions in a stressed environment.

30. The NBB should monitor real estate exposures of insurers and ensure that risks are properly understood and managed. Real estate investments represent about ten percent of Belgian insurers' balance sheets, consisting of direct investments in property, real estate funds, loans and mortgages, bonds and equity of real estate related corporations. For several insurers real estate related corporations represent a significant share of their total equity exposure and real estate funds a high share of their fund investments. A real estate shock may thus affect the insurers through several investment channels, thus increasing the potential impact on insurers' solvency. Given their importance on the market, the NBB should monitor any reallocation of their real estate investments.



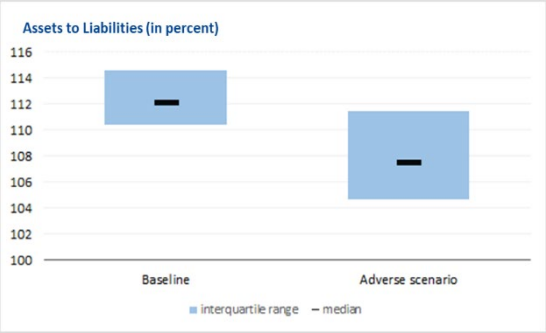
Source: IMF staff calculations

31. Liquidity stress tests show insurance sector can withstand liquidity shocks. Low derivative exposures for the majority of insurers makes the sector largely resilient to margin calls following steep interest rate hikes. Cash buffers vary significantly across firms but can become stretched for some insurers with larger exposures under a narrow definition of cash. Insurers have access to repo facilities and money market funds, but these sources may not be available in a crisis.

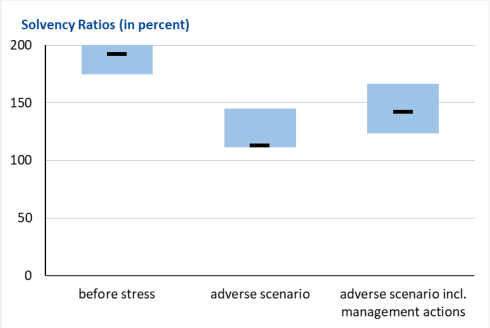
Also, insurers generally have sufficient liquid funds to withstand significant redemptions, but results show high levels of dispersion.

Insurance Stress Test Results

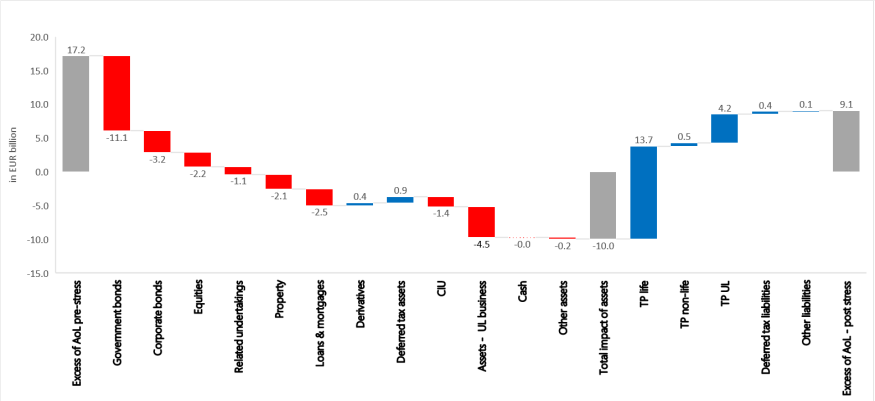
Asset-to-liability ratios of Belgian mixed insurers decline after shock.



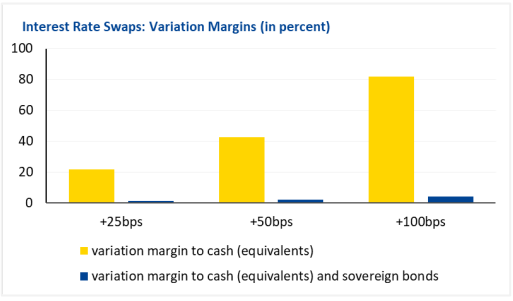
Solvency ratios drop markedly after stress. Insurer can mitigate the impact through management actions.



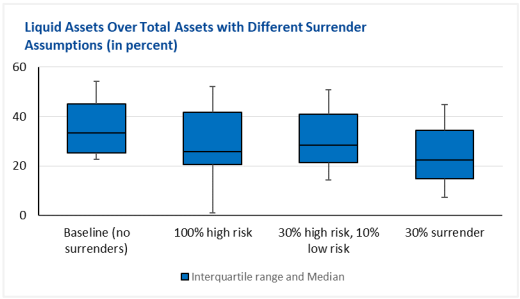
Belgian insurers' excess of assets over liabilities is significantly affected by a drop in asset values. This is partially compensated by a fall in technical provisions.



Given the small exposure, most insurers can cover margin requirements without having to sell other assets.



Liquid assets are generally sufficient to cover significant lapses. Some insurers have significant amounts of products without penalties.



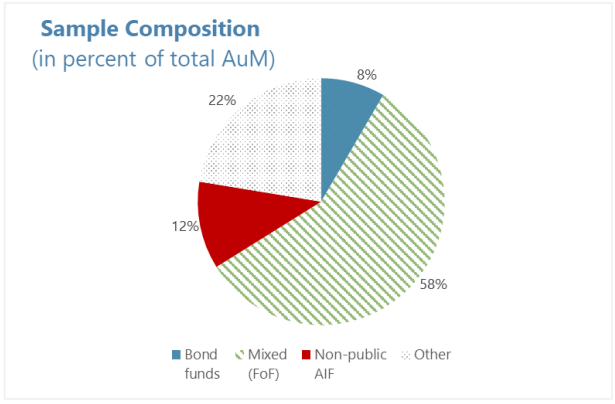
Source: IMF Staff based on NBB data and company submissions.

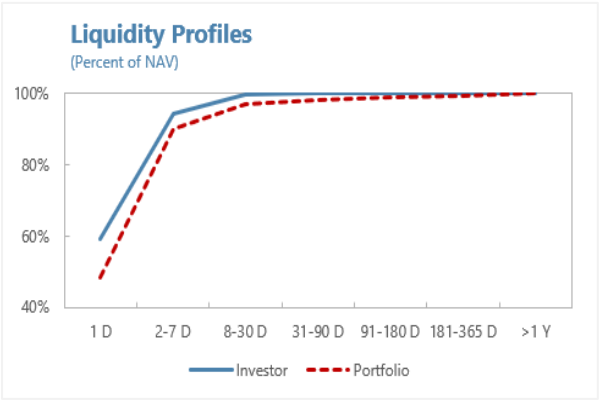
C. Investment Funds

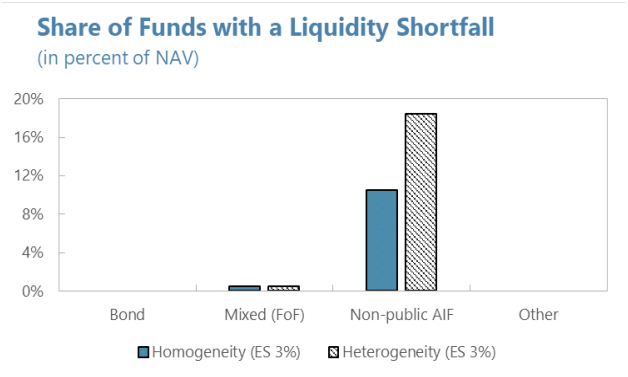
32. The Belgian investment funds sector would be able to withstand severe but plausible redemption shocks, however a few non-public alternative funds would run into difficulties. Only less than 2 percent of the investment funds analyzed (6.7 percent of NAV) would not have enough highly liquid assets to meet investors' redemption requests in a market stress situation and thus present liquidity shortfalls.

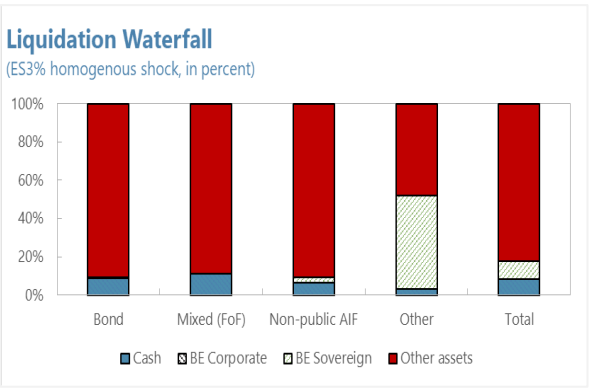
33. Belgian investment funds are exposed to volatility spillovers from foreign markets. The market-based interconnectedness analysis indicates that bond, equity and mixed funds are more vulnerable to volatility shocks originating in other European and global markets than to spillovers from the domestic market. Market-based contagion between domestic funds appears overall limited to equity funds and mixed vehicles that exhibit stronger co-movements and similar inward spillovers from foreign markets.

Investment Funds Stress Test Results







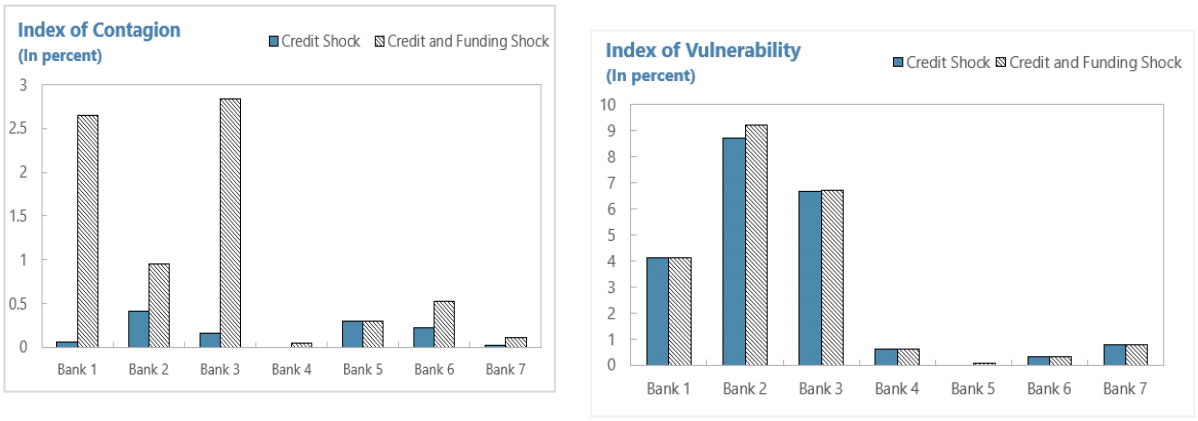


Source: IMF staff calculations.

D. Interconnectedness Analysis

34. Analysis of domestic interbank exposures indicates low direct contagion risks for Belgian banks (Table 11, Figure 12).[15] The finding shows that the failure of a single domestic bank would not trigger the failure of another bank. Additionally, no bank falls below its regulatory minimum capital requirement after experiencing shocks to one/ several of its interbank exposures. Overall, the vulnerability to spillover effects remains low across banks, albeit with some variation. However, specific institutions contribute to the high vulnerability index observed for certain banks.

Interbank Exposures



Sources: IMF staff calculation.

Notes: Index of contagion (of index of outward spillover risks): the average loss of other banks' capital due to the failure of a bank i; Index of vulnerability (or index of inward spillover risks): the average loss of a bank i capital due to the failure of all other banks.

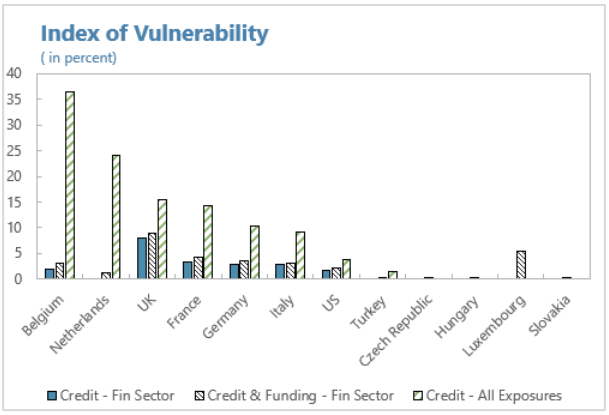
35. Belgium is highly vulnerable to contagion from an external shock. Aside from the US, a default of all exposures in the Czech Republic, Netherlands, France, Luxembourg, and the UK would have a significant adverse impact on banks' capital in Belgium.[16] However, the impact on Belgian banks in the occurrence of a default in any financial institution is expected to be marginal. This is

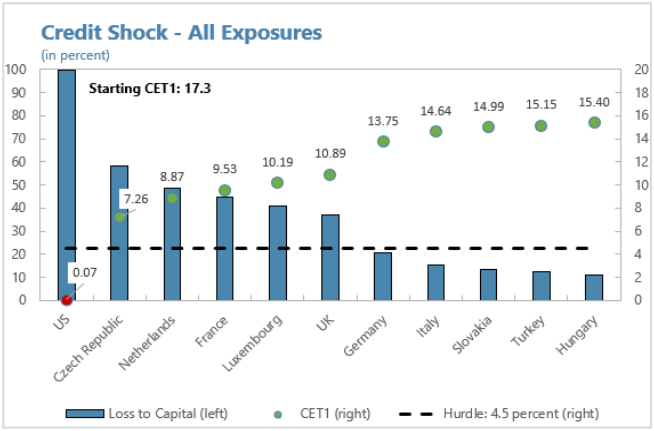
[15] For the analysis, the FSAP team has incorporated two additional institutions that exhibit significant exposure from most banks. However, these institutions are not depicted in the interbank exposures' charts.

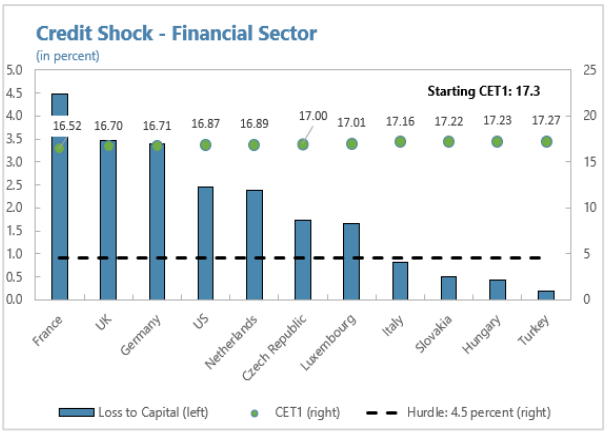
[16] BIS consolidated banking statistics data on guarantor basis is used for analysis, meaning inward and outward risk transfers across countries have been taken into consideration.

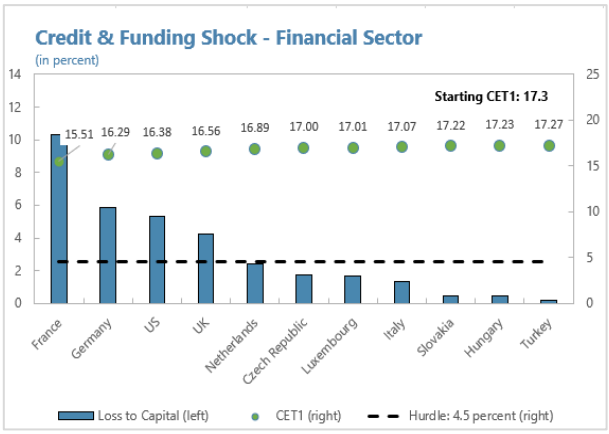
because Belgian banks have limited cross-border exposure to the financial sectors, thereby reducing the potential effects of credit and funding shocks.

Cross-Border Contagion Analysis Results



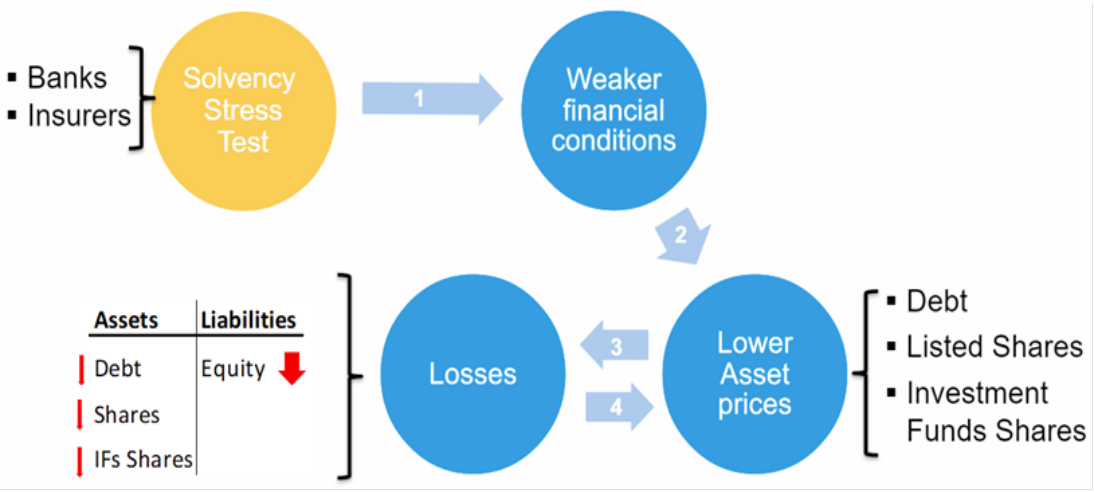




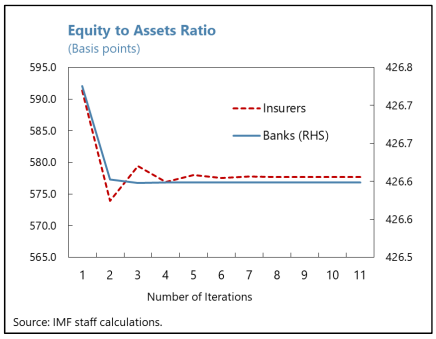


Sources: BIS, NBB. Figures relate to all banks in Belgium.

Market Contagion



Source: IMF staff.



Source: IMF staff calculations.

36. An analysis of second-round effects of the solvency stress test on banks and insurers through their crossholdings of financial instruments finds that losses from crossholdings are limited. The decline in equity to asset ratio for banks is minimal, from 426.7 bps to 426.6 bps, while insurers experience a slightly larger decline, from 591.3 bps to 577.7 bps. This is primarily due to insurers' exposure to revaluation losses from holding bank-issued debt. However, the contagion through investment funds' shares is weak because investment funds have minimal exposure to bank-issued debt, even though insurers hold a relatively large proportion of these shares.

FINANCIAL SECTOR OVERSIGHT

A. Macro-Prudential Policy

37. This FSAP reiterates the 2018 FSAP recommendation to grant the NBB the full power to set macroprudential policy, without the need for government approval. The present macroprudential policy framework does not assign a financial stability mandate to the government but endows it with powers that weaken the NBB's ability to perform its role as the macroprudential authority. Specifically, the government has control over borrower-based measures due to possible distributional and socio-economic implications, although best practice suggests addressing such concerns by fiscal policy. To navigate these constraints, the NBB has used its semi-hard and soft

powers, such as adopting "prudential expectations" on LTV and D(S)TI ratios to discourage riskier residential mortgage lending via a "comply or explain" mechanism.[17] These measures, discussed with the government prior to implementation but not requiring government approval, have helped mitigate real estate vulnerabilities while also addressing distributional concerns. Thereby, they have demonstrated that balanced macroprudential policy decisions can be taken in consultation with the government without requiring formal approval. As a result, the FSAP recommends that, over the medium term, the NBB should have full power over borrower-based measures to enable it to implement its financial stability mandate, while retaining a consultative role for the Ministry of Finance.

38. In the near term, it is recommended that the NBB be granted the power to set CRD/CRR tools at the national level, without the need for government approval. In addition, the government also enacts CRD/CRR measures, effectively handing it approval powers. Government influence on capital-based instruments is less common and – in the few existing cases in Europe – is made explicit by declaring a ministry instead of the central bank or another entity as the designated macroprudential authority, thereby improving transparency and accountability. Given that the NBB is 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.

39. 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 OSII buffers is strong, with quarterly (CCyB) or annual (OSII buffer) communication about the factors underpinning their setting, even when no activation takes place, or no changes are made. For the remainder of the toolkit, there is scope for improvement, with early communication by the NBB likely hampered as decisions cannot be conveyed to a wider audience before government approval has been obtained. This creates room for inaction and weakens transparency. Therefore, establishing a formal protocol for communication about all macroprudential policy decisions, including where no action is taken, and publishing the factors influencing the government's decisions with a financial stability impact will help boost accountability and strengthen the transmission of macroprudential policies.

40. The NBB employs a sophisticated framework to assess systemic risks and inform its macroprudential policy decisions. It has copious access to a wide range of data to evaluate systemic risks, quantify its intermediate macroprudential policy objectives, identify appropriate macroprudential policy instruments, and arrive at well-substantiated decisions. The framework's centerpiece is a comprehensive biannual systemic risk assessment. Quantitative tools complement this approach. Findings are condensed into a summary forming the basis for discussions about the potential adoption of macroprudential policy measures.

[17] LTV restrictions are applied to the origination of new mortgages and differentiated across borrower and property types with first time buyers being subject to more lenient conditions than other owner occupiers and buy-to-let investors. In addition, a limited share of mortgages is allowed to have a combination of high LTV and D(S)TI ratios.

41. The systemic risk assessment framework could be strengthened, also by stronger integration of data and quantitative tools with instrument design and selection. At present, the framework links intermediate objectives with indicators of systemic risk detection and macroprudential policy tools, yet provides limited guidance about instrument selection, activation or adjustment. While an automatic, exclusively rules-based approach is not desirable when setting macroprudential policy, 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 select the most suitable macroprudential policy instruments and their proper calibration. Exploring opportunities to further integrate, leverage and expand data sources (including for CRE) at the NBB could also prove helpful.

42. The NBB has appropriately deployed its well-developed macroprudential policy toolkit to address cyclical and structural systemic risks. Due to the substantial exposures of banks to residential mortgages, the NBB has put in place a sectoral systemic risk buffer (SSyRB) and prudential expectations of borrower-based measures on banks and insurers which have lessened vulnerabilities. However, exemptions for loans with high LTV or DS(T)I ratios should be kept under review to prevent them becoming a source of vulnerability. Reflecting the evolution of macro-financial risks, the NBB has recently decided to recalibrate its capital buffers by increasing the CCyB in two steps by October 2024 and lowering the SSyRB, yielding a net €1.6 billion increase in the macroprudential capital cushions of banks. Additionally, banks were encouraged to lengthen mortgage maturities to ease the debt servicing burden of households and pre-empt borrower distress, an example of the NBB's use of soft powers. The recalibration of buffers can help absorb unexpected losses from a broader deterioration in the macro-financial environment while also preserving the ability to cushion losses from a housing market correction. Still, the NBB should remain vigilant to potential procyclical effects of macroprudential tightening although the presently high profitability and the significant capital headroom of banks is likely a mitigating factor. To allay structural systemic risks from a large banking system and its interconnectedness, the NBB has imposed other systemically important institutions (O-SII) buffers on eight banks and has the prerogative to provide input to the SSM in the approval of strategic decisions of SIs if deemed to have a detrimental impact on financial stability.

B. Bank Oversight

43. NBB's framework for bank supervision is well embedded in the SSM framework and the FSMA has a well-developed framework for product and conduct supervision of banks. The NBB has well-established processes for its supervisory planning and on- and offsite supervision of LSIs and TCBs. The NBB has provided evidence of addressing supervisory concerns effectively, including realizing an orderly wind-down of bank activities when warranted. There are only a limited number of TCBs. Memoranda of Understanding (MOUs) with all home supervisors are in place as well as tailored requirements.[18] EA proposals to harmonize the regulatory and supervisory approach

[18] For example, TCBs are required to hold "sizeable" assets equal to the amount of Deposit Guarantee Scheme (DGS) eligible deposits, unless insolvency laws of the third country ensure equivalent treatment to the branch depositors to that of depositors of the third country institution. The liquidity requirements for these assets could be strengthened.

to TCBs, could potentially further strengthen the requirements and help to establish a level-playing field in terms of TCB requirements across EA jurisdictions.

44. There is room for improvements to the corporate governance regulatory framework and related expectations. Banks have a one-tier Board system of which the majority should be non-executives.[19] Following up on the 2018 recommendations, the NBB strengthened its supervisory approach to LSI corporate governance. In its off- and onsite supervision the NBB dedicates significant time on the functioning of the governance and internal control framework of the LSIs. The supervisory expectations regarding the role of the non-executives could however be further clarified and strengthened,[20] the expectation that independent control functions provide a copy of all their board committee reporting to executive management might limit their ability to communicate freely, and the ability of independent non-executives to be independent at different levels within a group (e.g., the parent and the subsidiary) should be reconsidered as this could result in a conflict of loyalty. Unlike the EBA Guidelines (which are applicable to GSIIs and OSIIs) and Basel Principles for Corporate Governance there is no formal requirement to have independent non-executive board members chairing board committees (e.g., audit and risk committee).

45. While the overall supervisory framework is well developed, there are some items that could be enhanced. While the supervisor also discusses and monitors in its periodic contacts banks' compliance with their internal capital target, it could usefully also be included in the existing internal monitoring tool of the NBB. Additionally, internal processes across departments appear not to be fully harmonized and could be more risk sensitive (e.g., documentation and explanation of internal decision-making considerations for high-impact institutions, weight given to continuing un-remedied issues in internal decision making, using or not using remedial powers). Given the limited size of the LSI sector, staffing is not very large and as a result staffing changes (e.g., staff leaving the NBB or moving to a different position) could affect the work program (e.g., SREP postponement in 2022). In addition, prioritization considerations have resulted in the exclusion of non-HI LSIs in the onsite inspection process for IT and cyber risk (only covered through an offsite review during the SREP). These issues appear to have resulted in staffing of LSI supervision below SSM averages. Finally, consumer protection and conduct information could be collected more structurally and feed into the SREP.

46. The authorities have concerns regarding the potential dilution of the Basel III framework in the Euro-Area and the incompleteness of the banking union. Current proposals for the EU adoption of the Basel III framework appear to dilute to some extent the framework.[21]

[19] The general legal corporate governance framework in Belgium was revised in 2019 and allows in addition to a one-tier also for a two-tier board system. The FSAP only reviewed the governance framework for banks. The NBB should review whether the FSAP's observations and recommendations on corporate governance are also relevant for non-banks.

[20] The requirements could be closer aligned with the Basel Principles on Corporate Governance, better explain the expectations regarding the supervisory role of non-executive directors, as well as the collective suitability requirements for the non-executive directors.

[21] After the first round of Basel III implementation the EU was assessed in 2014 by the Basel Committee for Banking Supervision as materially non-compliant.

Concerns in this regard have also been expressed by the ECB. Another challenge for Belgium is the increasing EA emphasis on group level capital and liquidity requirements, which potentially results in lower capital and liquidity levels at SI subsidiaries (of which some are systemically important in Belgium). While the authorities are fully supportive of the single market, their view on the need to maintain sufficient capital and liquidity in SI subsidiaries until a common deposit insurance scheme, fiscal backstop and burden sharing mechanism for systemic events are in place is justified.

C. Insurance Oversight

47. The challenging macro environment, the emerging risks, and new regulatory changes are expected to increase the supervisory obligations of the NBB. The heightened risk brought by the current macroeconomic conditions coupled with the emerging risks would require additional and dedicated focus by the insurance supervision team. The Solvency II Review, the Insurance Recovery and Resolution Directive (IRRD) and the Digital Operational Resilience Act (DORA) are regulatory changes that are expected in the short- to medium term. The NBB should assess its resource needs to be fit for purpose for the future. Further work is also needed on emerging risks (climate and cyber), macroprudential supervision, and to enhance group supervision through co-operation with third country supervisors.

48. Climate change and other sustainability risks are garnering significant attention, particularly considering the material losses suffered by the insurance industry during the 2021 floods. Finalizing the legal framework of the natural catastrophe public-private partnership will enhance the predictability of the insurance cover for natural disaster-related losses and ensure the availability of public funds.[22]

49. The significant exposure to mortgage loans and real estate should continue to be a supervisory focus. Inconsistencies in the valuation of mortgages across insurers, potential scope for regulatory arbitrage between insurers and banks, and the quantity and quality of mortgage loans (including any transfers from affiliated banks) should be addressed.

50. The conduct of business supervision can also be enhanced. Legislation can be strengthened to enable pre-emptive conduct supervision, including cross-border data sharing. This should be done at EU level. Increasing reporting requirements and publishing conduct data including complaints would not only enhance supervision but also assist the industry and consumers. Given that conduct risk can ultimately transform into prudential risk, it is important that the NBB and the FSMA incorporate the conduct risk assessment into prudential risk assessment.

[22] In Belgium there is a public-private partnership to cover natural disaster-related losses. A new proposal has been drafted.

D. Euroclear Bank

51. The assessment of EB against the CPSS-IOSCO Principles for Financial Market Infrastructures (PFMI) reveals that EB is in observance of 18 principles, and in broad observance of 3 principles (principles 3, 17, and 19). EB is a well-established FMI that employs highly professional and knowledgeable staff. It has a strong legal basis, clear and transparent rules and procedures for its participants, as well as for its critical operations and functions, and has in place a comprehensive risk management framework. However, inadequacies remain in its management of risks related to IT, including cyber resilience, as well as those stemming from indirect participants. There are gaps in its testing of business continuity and default management procedures.

52. Substantial efforts are needed to address critical deficiencies in EB's cyber posture and the management of key operational risk elements. Going forward, it is imperative for EB to focus on the effectiveness of fully-embedded security controls, and to improve asset management and identity and access management. A stronger operational risk management stance will require stepped up oversight and steering by the Boards of EB and ESA (the former's critical service provider and parent company). EB and ESA should therefore work on filling any gaps that exist in their IT and information asset management as a top priority and continue to address these critical risks. Continued improvement is needed in the cooperation and communication between the risk management function and the relevant management and governance bodies of EB and ESA.

53. Beyond relying on direct participant disclosure, EB should develop capacity for increasing the transparency with respect to the business of its direct participants' clients. EB lacks basic information on underlying clients that could be responsible for significant activity with respect to the smaller direct participants of EB. Such clients could create risks by contributing to the default of a direct participant and have broader market access implications. To manage this risk, and within the constraints of the data privacy legal framework, EB should gather basic information on such clients.

54. EB should also improve the breadth and rigor of its business continuity and default management testing. EB has in place well-defined rules and procedures for ensuring business continuity and managing a participant default. However, EB does not employ simulaton exercises in its testing, nor does it conduct joint testing with linked FMIs and, where relevant, intermediaries that facilitate indirect linkages. Several participants have also noted the lack of rigor in EB's testing of such procedures. EB should put in place more robust testing of its business continuity and participant default procedures, develop a wide range of potential scenarios to facilitate testing, as well as involve a greater number of key stakeholders. In addition, a summary of test results should be shared among its entire customer base. EB should also involve its participants in the regular review of its participant default procedures.

55. EB is subject to effective regulation, supervision, and oversight. The overall assessment of EB against the CPSS-IOSCO PFMI includes an assessment of the responsibilities of authorities, namely those of the NBB and the FSMA. The activities and powers of the NBB—as EB's sole national

competent authority (NCA) under the CSDR—and those of the FSMA are well-defined in relevant national laws, Belgian Royal Decrees and EU regulation. Authorities are deemed to have sufficient knowledge and expertise to carry out their regulatory, supervisory, and oversight activities. The NBB and FSMA observe all five responsibilities of authorities.

56. Actions affecting frozen Russian assets and interest earnings on them should carefully consider the financial stability, legal, operational, and reputational implications and ensure that EB is able to continue to provide its critical services to financial markets. As a consequence of sanctions and countersanctions imposed following Russia's invasion of Ukraine, EB is exposed to increased operational and litigation risks. Any confiscation or loss or misuse of these assets—or undue appropriation of revenues therefrom—could pose a serious risk to the appropriate functioning of EB as an FMI and, more broadly, could impact financial stability and the functioning of financial markets globally. An adverse impact on the credit rating of EB or disruption in its services would spillover to some of the world's largest financial institutions, as well as linked FMIs.

E. Financial Integrity

57. On the AML/CFT risk-based supervision of banks and payment institutions, **several key recommendations have emerged.** First, the NBB should join the national committee on combating terrorist financing due to its crucial role in supervising the financial sector. Second, although the NBB's efforts to bolster resources for AML/CFT supervision are commendable, they could only meet 53 percent of the on-site supervisory plan in 2022, and remain deficient. Third, the NBB should bolster the severity of sanctions imposed on financial institutions violating AML/CFT requirements. These sanctions must be effective, proportionate, and deterrent to future violations. Lastly, the NBB should maintain heightened risk-based vigilance over the payment institutions sector.

FINANCIAL SAFETY NET AND CRISIS MANAGEMENT

58. The resolution and crisis management framework should further promote coordination and cooperation among the relevant agencies and within the NBB. The NBB relies on its Resolution Board (including representatives of the NBB, the Ministry of Finance and the Guarantee Fund, as well as the FSMA chair as an observer) for decision-making on resolution issues and for cooperation between all the relevant functions of the financial safety net, including the DIS and the MoF. The rules of Procedure of this Board should be finalized—also giving attention to its capacity as a crisis management committee—and its composition should be more balanced. In addition, there is a need to strengthen and formalize the internal crisis management frameworks at the NBB. In this context, the NBB should prepare bilateral cooperation agreements at technical level between the Resolution Unit and the Supervisory and Financial Stability Departments, and an interdepartmental cooperation mechanism should be set up within the NBB at a technical level. There is also room to further strengthen recovery planning, which mainly relies on simplified recovery plans for domestic LSIs, as well as the operationalization of early intervention powers.

59. Efforts on the resolution front should be devoted to achieving operational readiness. In view of the advanced state of resolution planning, the NBB should make sure that it has the capacity and capability to execute the SRB decisions for SIs and cross-border LSIs, as well as its own decisions for domestic LSIs. To this end, it should finalize the national resolution handbook with attention also to resolution tools that are not part of the preferred resolution strategies, given that recent international experiences highlighted: i) the importance of flexibility to deal with bank failure which can be supported by operationalizing the sale of business tool, and ii) that a bank considered as non-systemic a priori can prove to be systemic in case of failure. The NBB should therefore be able to swiftly implement alternative resolution strategies instead of liquidation under normal insolvency proceedings, which is the preferred resolution strategy for most domestic LSIs. It is also key for the NBB to focus on the operationalization of the resolution plan for the biggest domestic LSI, given its importance. The NBB should also start preparing resolution plans for branches of banks headquartered outside the EU. To fulfil its tasks, the NBB should consider increasing the staffing of the resolution unit.

60. The framework for granting Emergency Liquidity Assistance (ELA) should be reinforced. Recent international experiences also highlighted the critical importance of having access to sufficient liquidity leading up to and during resolution. The provision of ELA remains the NBB's responsibility subject to the Eurosystem framework. The NBB has developed a handbook to be ready, if needed, to assess and grant ELA and it has broadened its experience with credit claims, by using them as collateral for regular monetary policy operations. The current framework should be reinforced by introducing a pre-verification framework for ELA collateral, tested on a regular basis. It is also important that the NBB specifies the lines of action and responsibilities for granting ELA to a bank in resolution, subject to a credible resolution strategy. In addition, the scope and conditions for access to ELA for NBFIs should be clarified given the wide scope of the NBB Organic Law on this front. Cooperation arrangements with other relevant national central banks (NCBs) would strengthen preparedness, coordination and information sharing in the event of ELA involving a cross-border banking group.

61. The Deposit Insurance System (DIS) should still improve several important aspects. The segregation of the DIS fund (all the monies collected to date as well as future contributions from banks) from the national budget and the increase of its target size are still pending the passage of a draft law at the time of writing. Once segregated, the DIS fund will need an investment policy aligned with best international practices. The public backstop that enables the MoF to provide a credit line to the DIS fund if ex-ante contributions were exhausted needs to be developed further in an internal document for it to be fully operational when needed. The DIS should also ensure operational readiness to meet the target of 7 working days for pay-outs as of 1 January 2024, including regular testing with a higher degree of granularity. Finally, the DIS should start operationalizing its paybox plus mandate.

AUTHORITIES' VIEWS

62. The authorities emphasized their commitment to strengthen resilience in the financial sector. The authorities noted that most of the recommendations from the 2018 FSAP, especially those that were within the competence of the national regulators, had been implemented. They also emphasized that Belgian regulation is at the forefront of international regulatory developments and these efforts have helped put the financial sector in a stronger position. In this context, the authorities welcomed the deep engagement of the FSAP and considered it to be an important tool to assess financial stability risks and improve the frameworks for financial sector oversight, financial safety nets, and crisis management.

63. There was agreement on the key risks and vulnerabilities in the financial sector. The FSAP team and the authorities agreed that the main financial stability risks emanate from the large, concentrated, and interconnected banking sector, private sector indebtedness, and high exposure to both the residential and commercial real-estate sectors. As policy rates have risen, the exposure of banks to interest rate risk is an attention point as they are largely invested in long-term fixed rate mortgages. At the same time, there was agreement on key strengths, including the strong net asset position of households, the relatively low overvaluation in real estate, and the strong customer deposit base of banks.

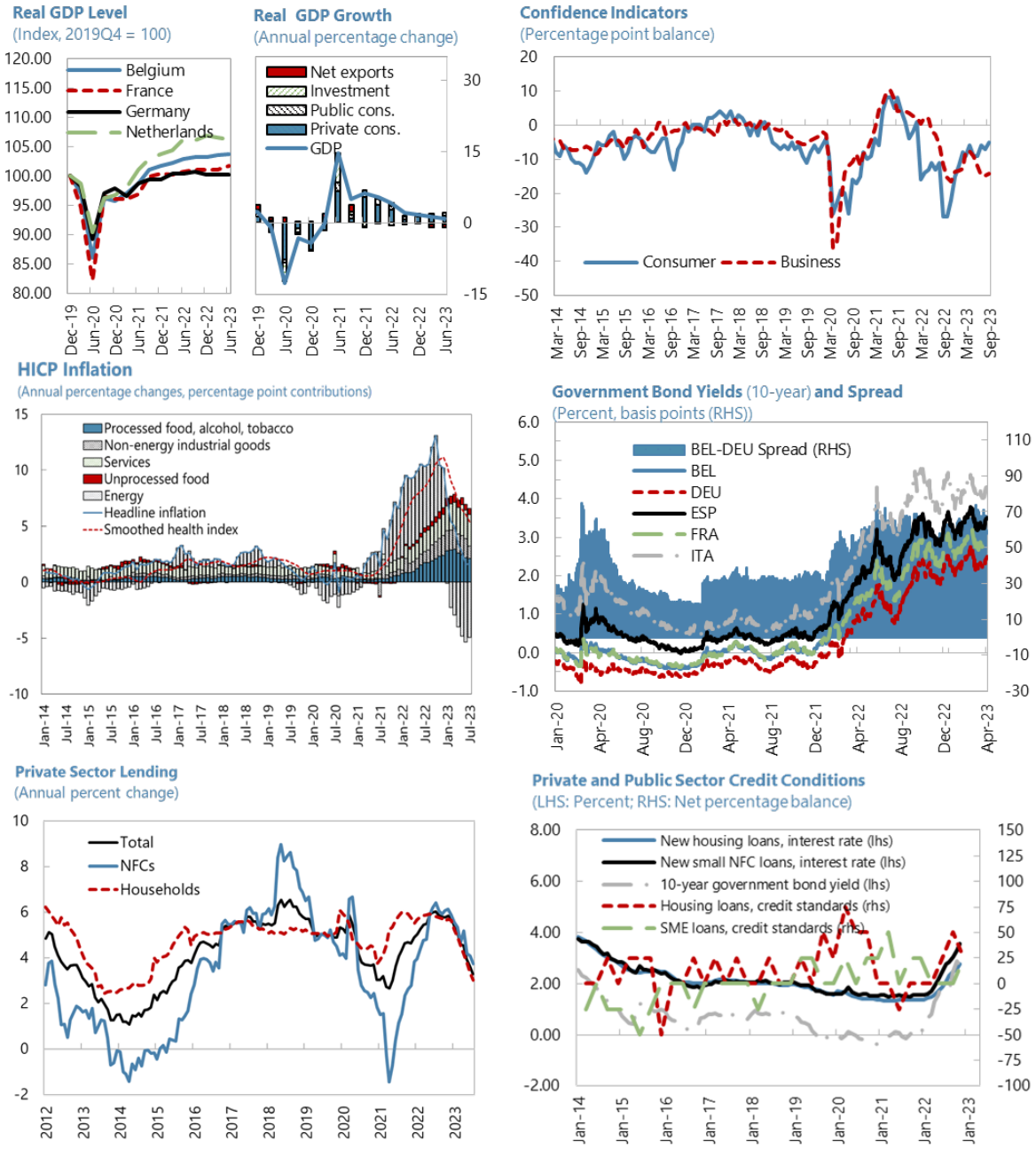
64. The authorities broadly agreed with the systemic risk assessment and related recommendations. They shared the IMF's view that the Belgian banking and non-bank sectors are resilient to severe macroeconomic shocks, although there is some heterogeneity. They agreed that liquidity levels needed to be monitored closely for some banks. They welcomed recommendations to strengthen the stress testing framework and to develop and adapt a stress testing framework for investment funds, noting that the NBB and FSMA have already commenced data sharing arrangements.

65. The NBB broadly agreed with the recommendation to grant it more powers to set macroprudential policy without government approval. The NBB considered that strengthened outreach with the Ministry of Finance had enabled it to smoothly introduce macroprudential capital requirements in the recent past. The NBB also successfully used semi-hard powers in the adoption of "prudential expectations" on borrower-based measures. They noted a high level of compliance has helped reduce the risks in mortgage portfolios of banks and insurers. Notwithstanding, they agreed that avoiding future delays to act against financial stability risks could benefit from aligning to a larger extent the NBB's powers with its mandate, while retaining a consultative role for government. In particular, they saw room to streamline the process of approving capital-based instruments and put it on par with most other European countries. Regarding banking and insurance regulation and supervision, the authorities welcomed the IMF's assessment that the oversight framework is sound and has been further enhanced since the previous FSAP, while further improvements can be made. They also noted their efforts to enhance climate data and informed that they are implicated in the preparation of changes to the national legal framework to allow the NBB's participation in national committee consultations on TF. Regarding EB, the authorities

emphasized their vigilance on cyber risk as well as the impact of international sanctions on Russia and countermeasures imposed by Russia.

66. Regarding the financial safety net and crisis management, the authorities welcomed the recommendations to strengthen the DIS and operational readiness on the resolution front. The authorities noted the progress since the 2018 FSAP in the preparation of resolution plans and minimum requirement for own funds and eligible liabilities (MREL) targets. They also recognized the importance of strengthening crisis arrangements and operational readiness of their resolution plans and further reinforcing the ELA framework. The authorities confirmed that the passage of the draft DIS Law remains a priority and agreed that further steps are needed to, among others, improve the fiscal backstop for the DIS fund operationally and develop an investment policy for it.

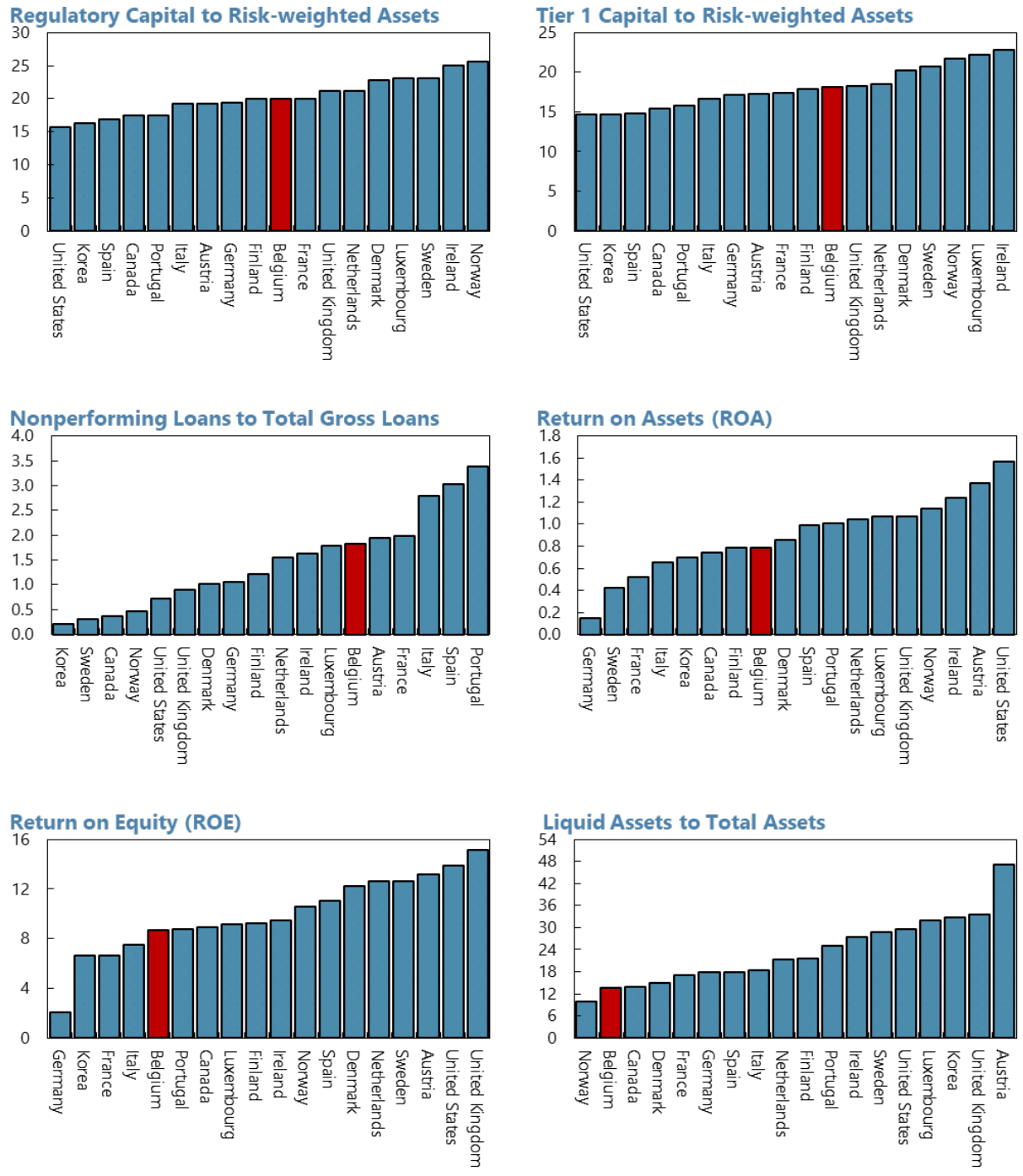
Figure 1. Belgium: Recent Economic Developments



Sources: Eurostat, NBB, StatBel, Haver, ECB, and IMF staff calculation.

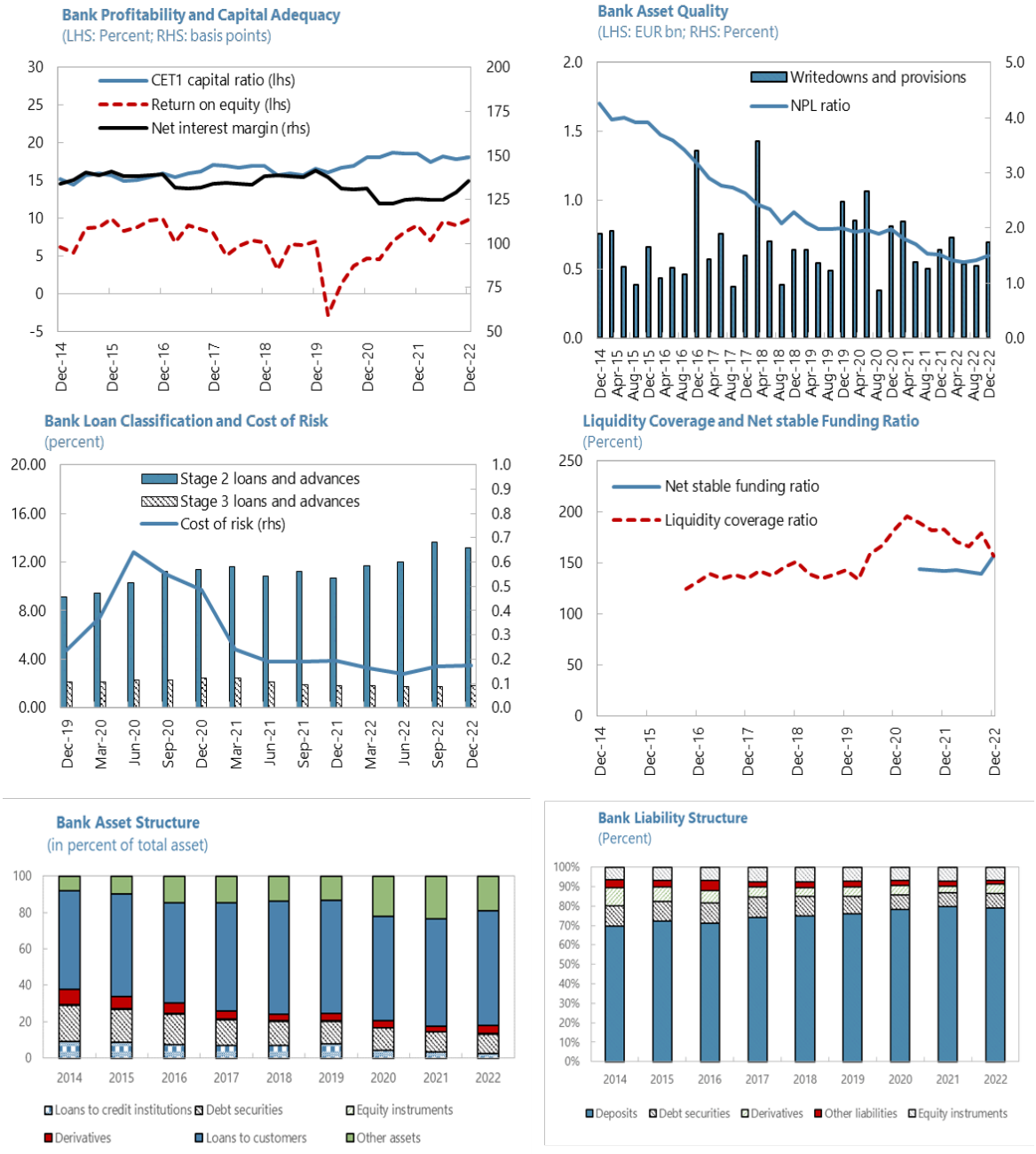
Figure 2. Belgium: Financial Soundness Indicators in the Banking System

(Latest available; in percent)



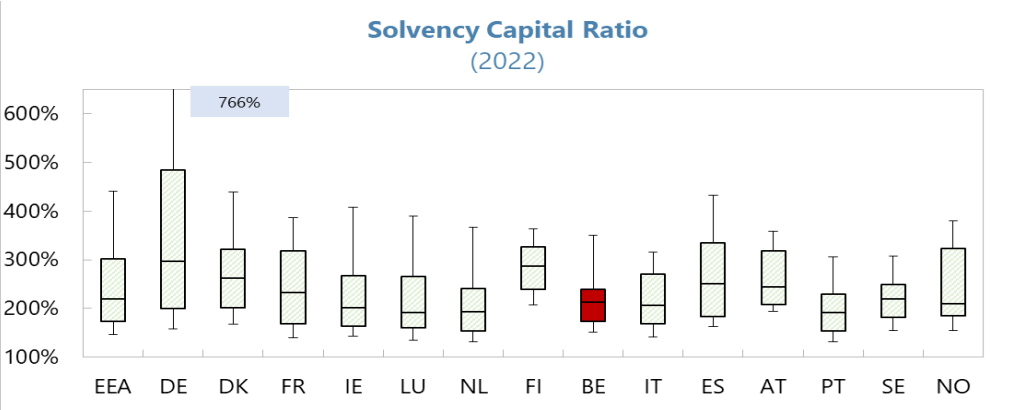
Sources: OECD, EBA, ECB, Eurostat, and IMF staff calculation.

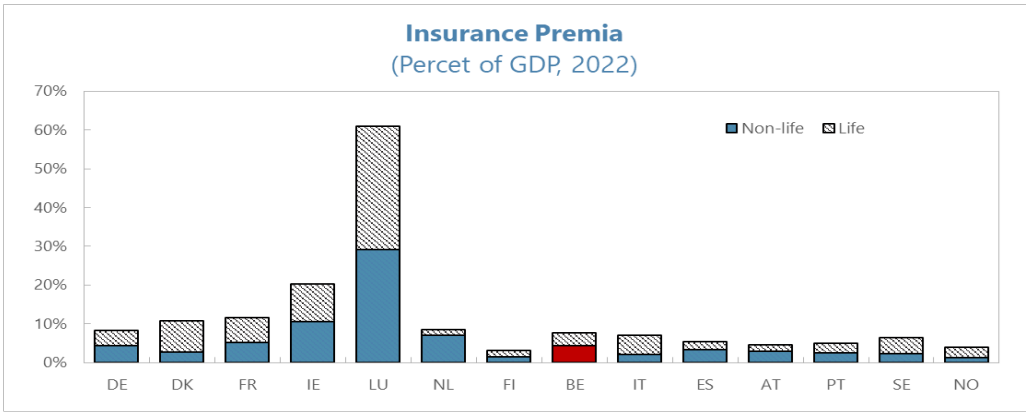
Figure 3. Belgium: Banking Sector Indicators

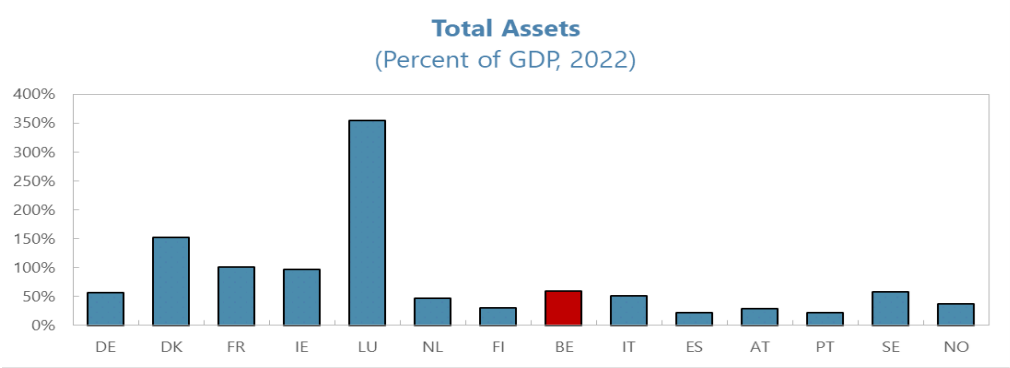


Source: EBA, NBB, and IMF staff calculation.

Figure 4. Belgium: Insurance Sector Indicators

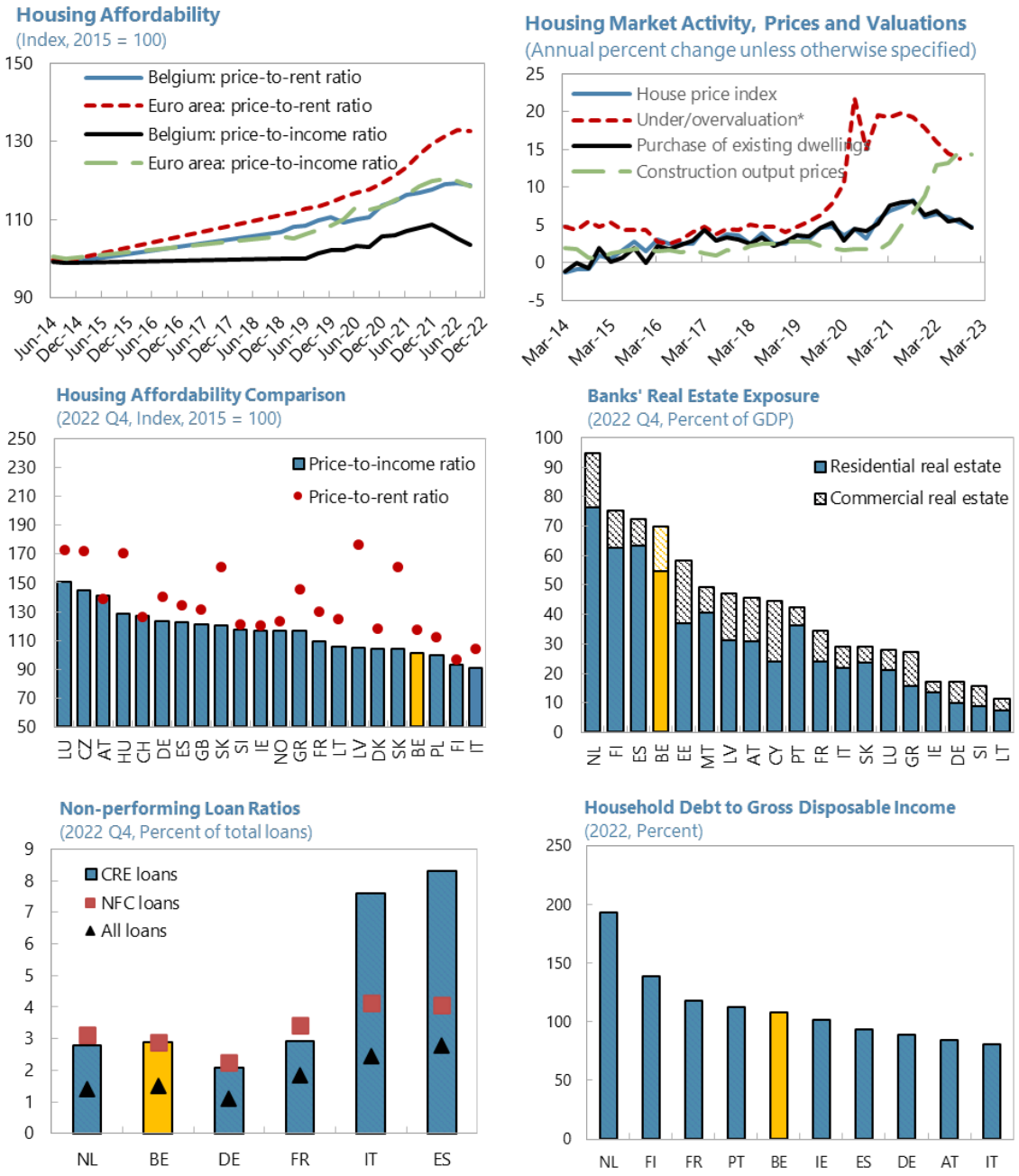






Source: EIOPA and IMF staff calculations.

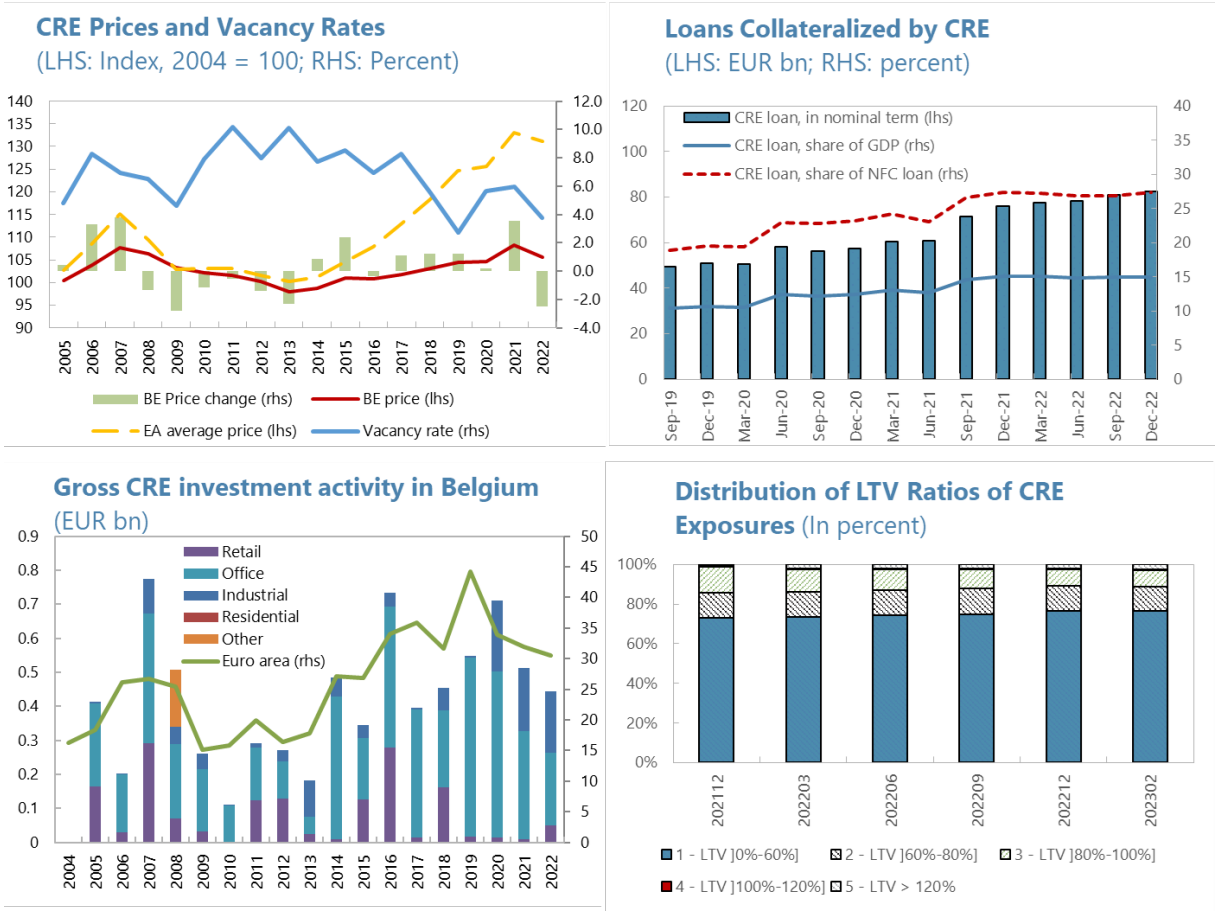
Figure 5. Belgium: Real Estate Developments



Sources: Eurostat, and IMF staff calculation. OECD, EBA, ECB.

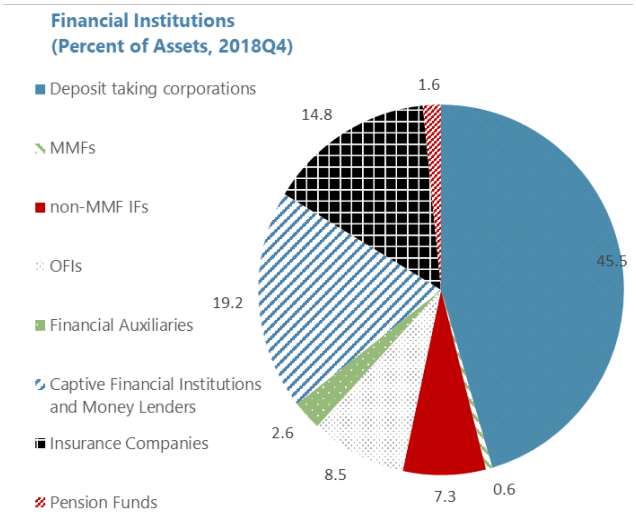
*Estimate of gross over/undervaluation based on ECB (2011): "Tools for Detecting a Possible Misalignment of Residential Property Prices from Fundamentals", Financial Stability Review, pp. 57-59, June, and ECB (2015): "A Model-Based Valuation Metric for Residential Property Markets", Financial Stability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

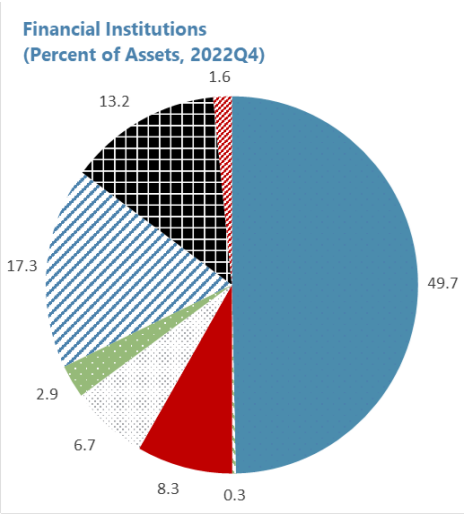
Figure 6. Belgium: Commercial Real Estate Developments

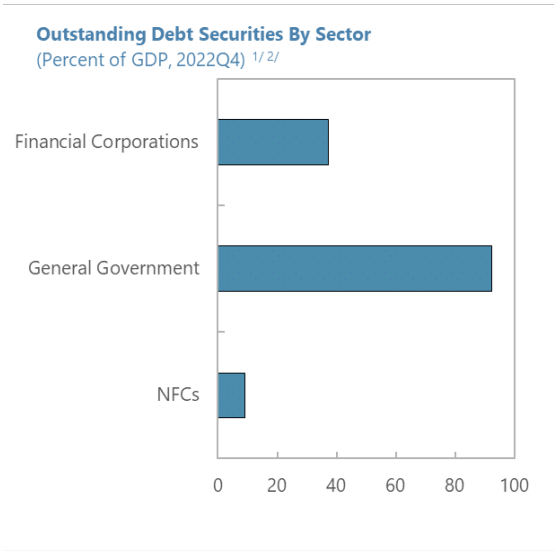


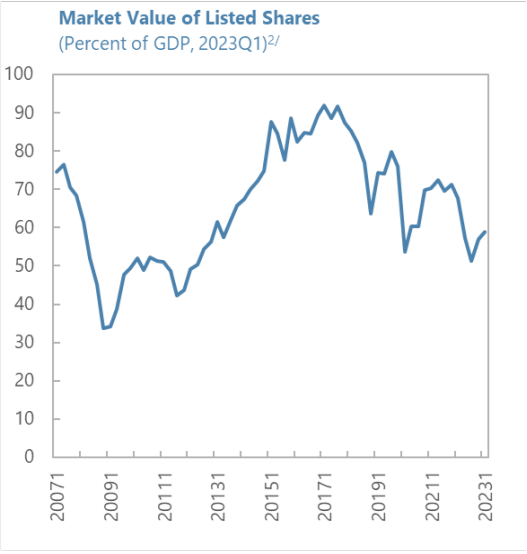
Source: MSCI, EBA, NBB, and IMF staff calculation.

Figure 7. Belgium: Structure of Financial Sector



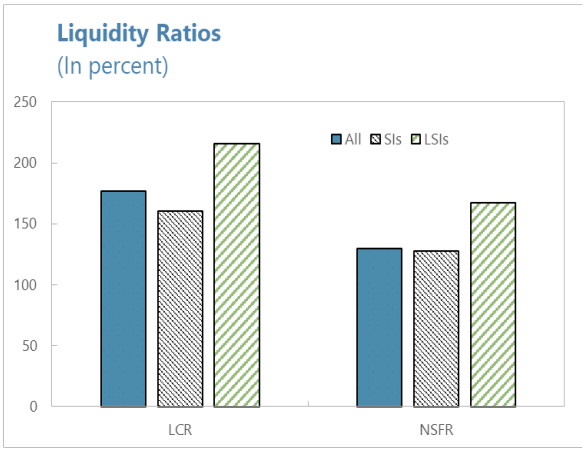


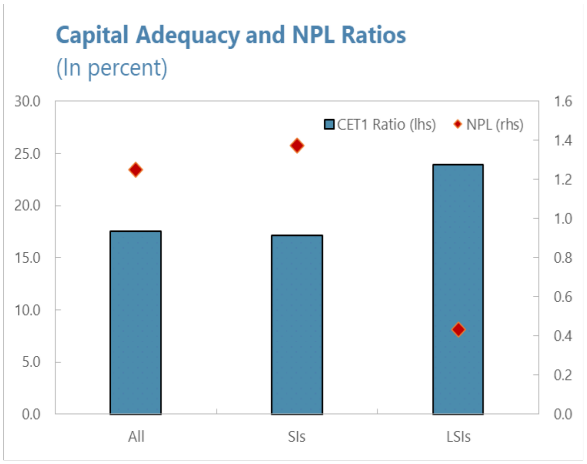


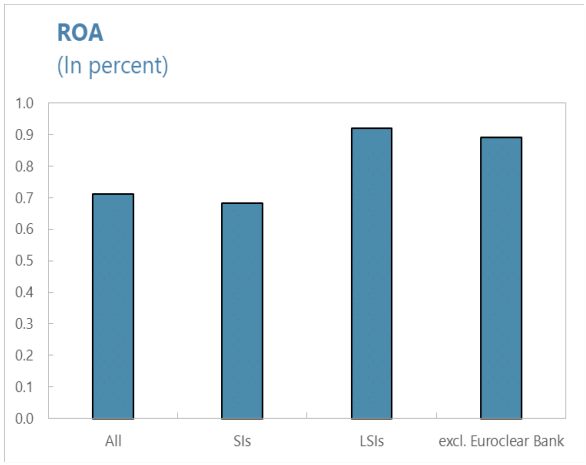


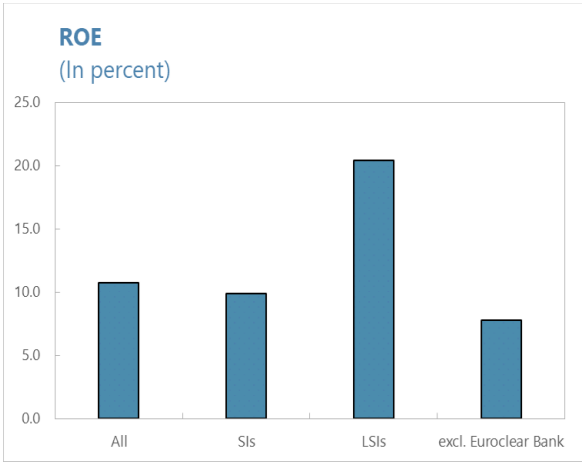
Sources: National Bank of Belgium, Haver Analytics, IMF Staff calculations.
1/ Reflects face value of debt securities.
2/ Nominal GDP reflects rolling sum of 4 quarters.

Figure 8. Belgium: Financial Indicators for SIs and LSIs, 2022Q4



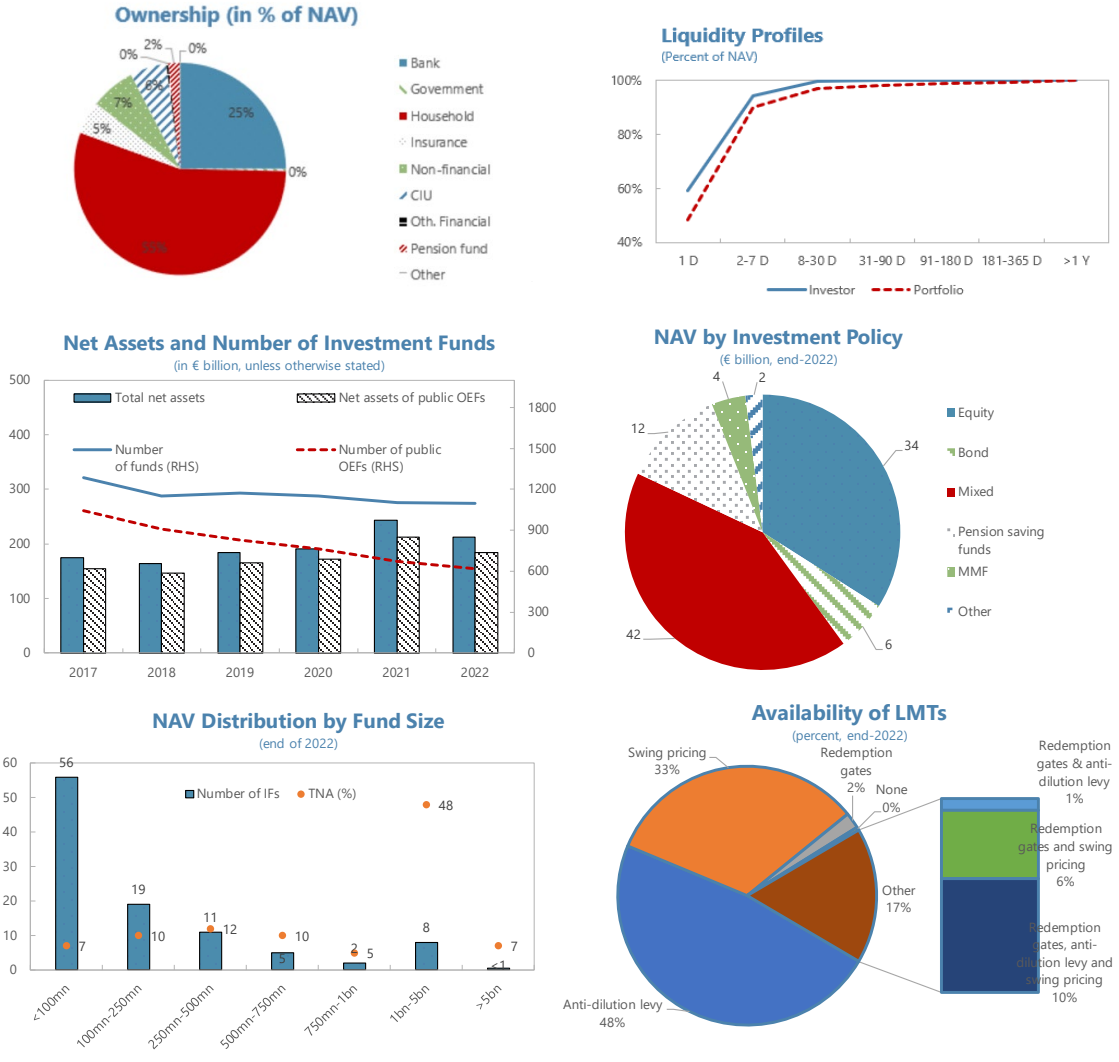






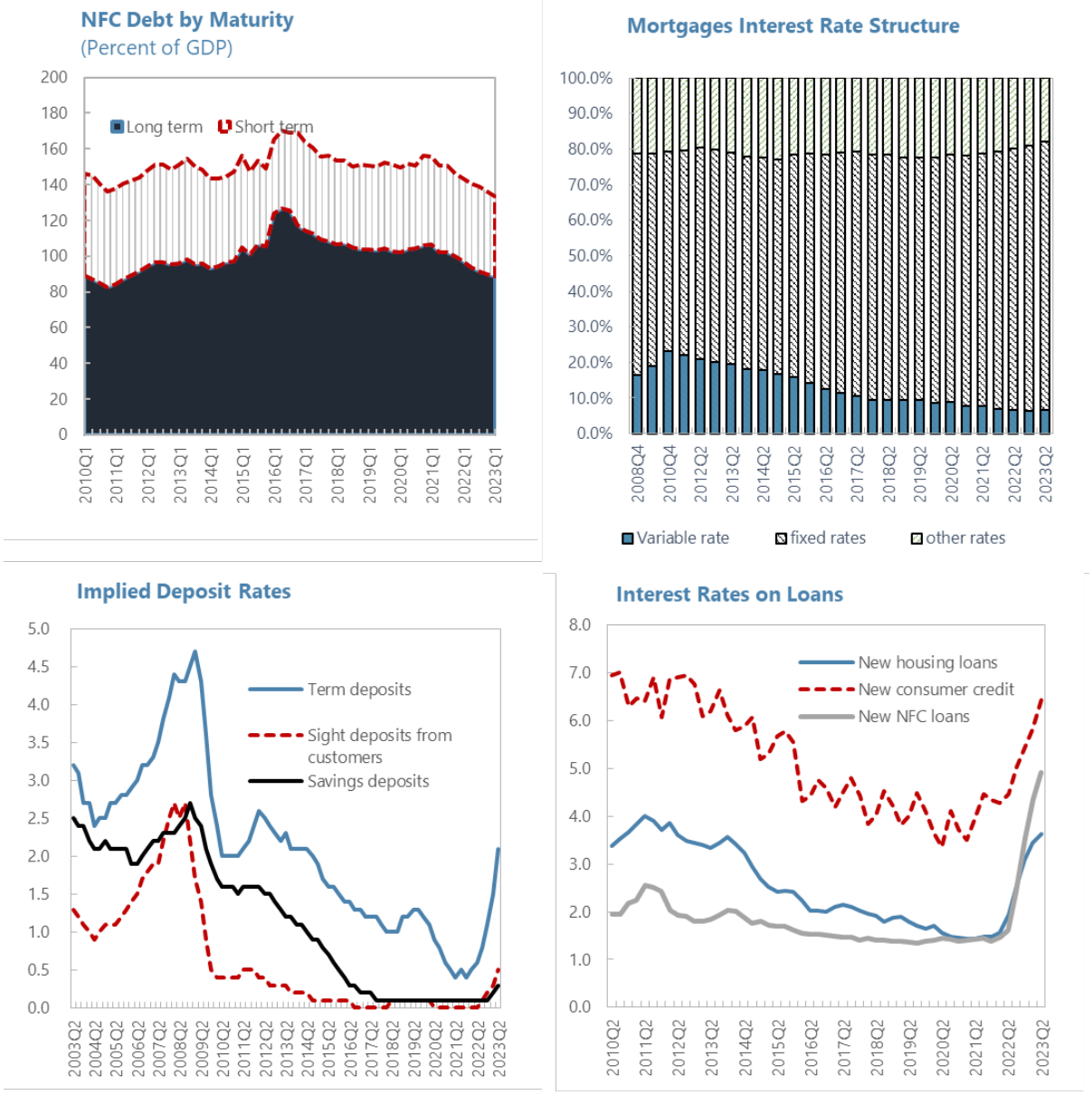
Source: National Bank of Belgium and IMF Staff calculations.

Figure 9. Belgium: Structure of the Investment Funds Sector



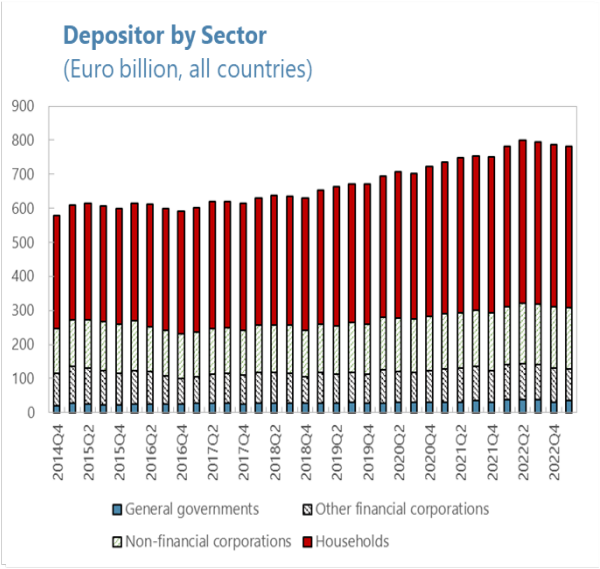
Sources: NBB, FSMA and IMF staff calculations.

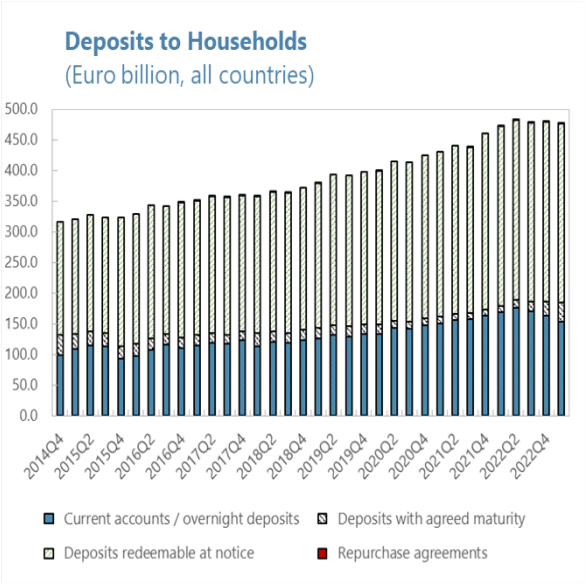
Figure 10. Belgium: Interest Rate Risk

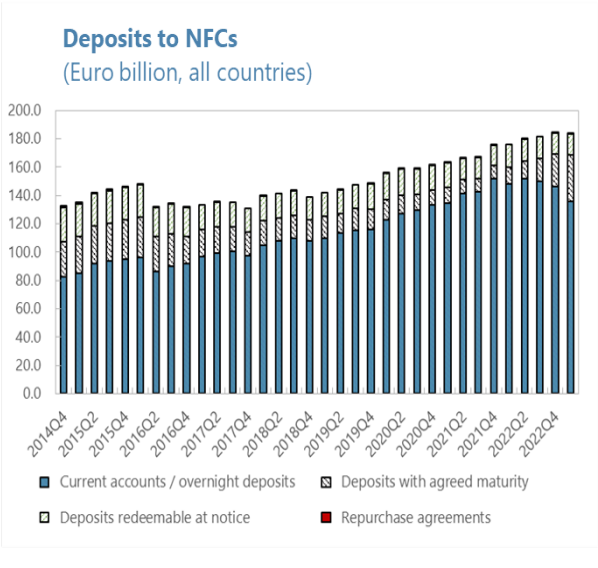


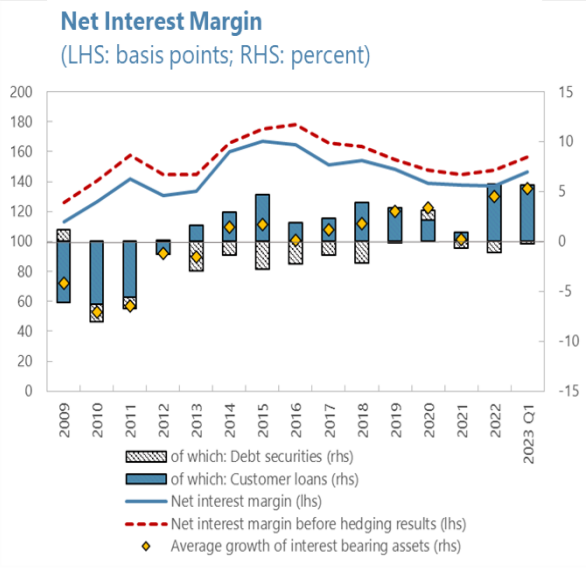
Sources: National Bank of Belgium and IMF staff calculations.

Figure 10. Belgium: Interest Rate Risk (concluded)



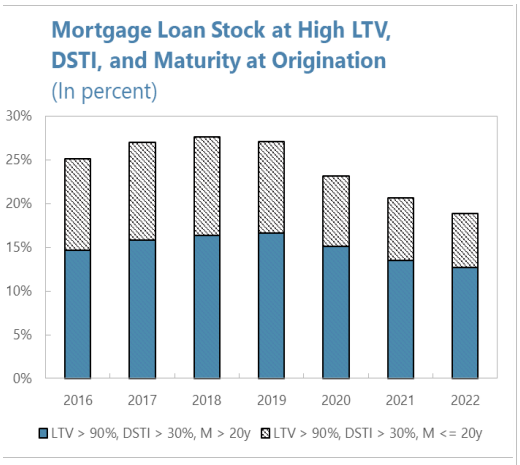


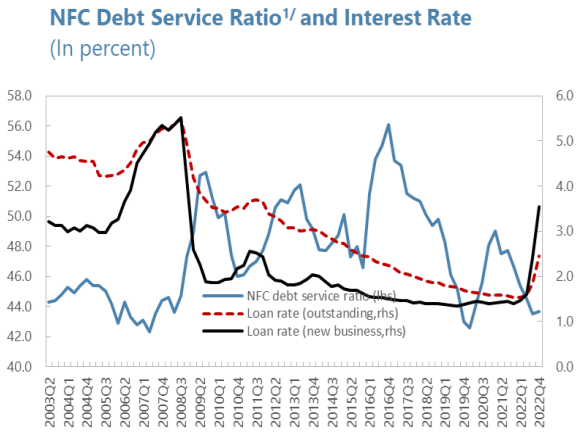


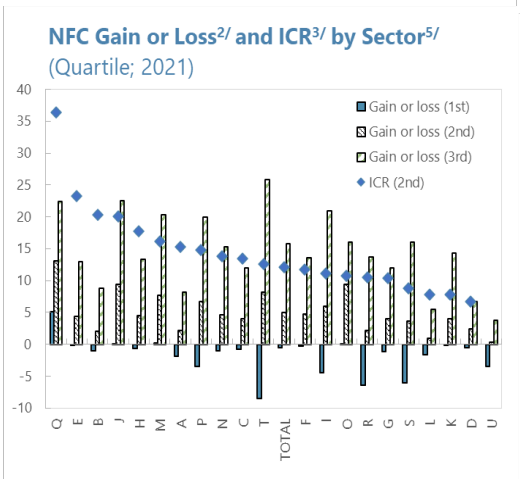


Source: National Bank of Belgium and IMF staff calculations.

Figure 11. Belgium: Household and Non-Financial Corporate Vulnerabilities







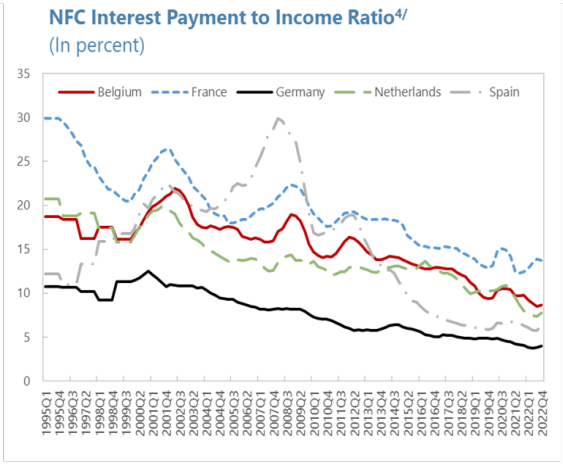
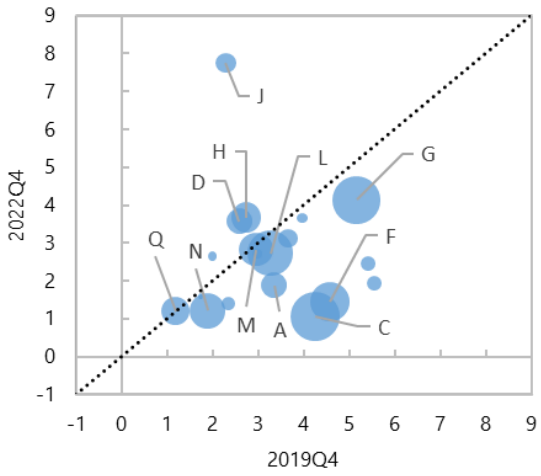


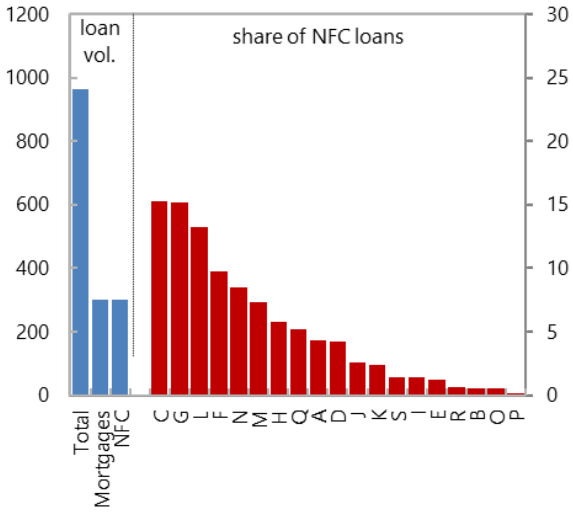
Figure 11. Belgium: Household and Non-Financial Corporate Vulnerabilities (concluded)

NPL Ratios and Asset Exposures
(Axes: percentage points; bubble size: percent of total loans)



Source: EBA.
Notes: residential mortgages (RM), agriculture (A), manufacturing (C), construction (F), trade (G), transport and storage (H), hospitality (I), finance (K), real estate activites (L), professions (M), administrative and support services (N), health and social services (Q), entertainment (R).

Bank Loan Volumes and Sectoral Exposures
(2022Q4; LHS: EUR bn; RHS: percent)



Sources: EBA.
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).

Source: NBB, BIS, IMF Systemic Risk Tracker, and IMF staff calculation.

1/ Debt service ratio is defined by debt service costs (interest payments and debt amortizations) as a proportion of income.

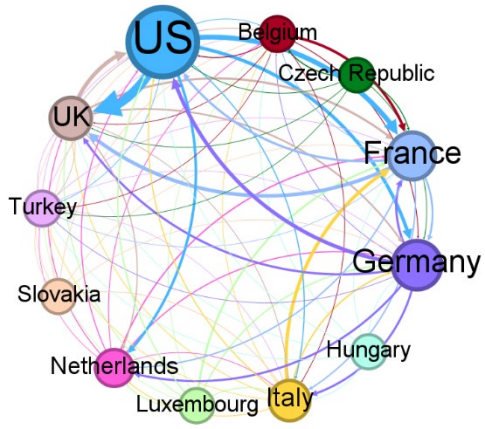
2/ Gain or loss refers to gains or losses recorded in the accounting period, in % of total assets.

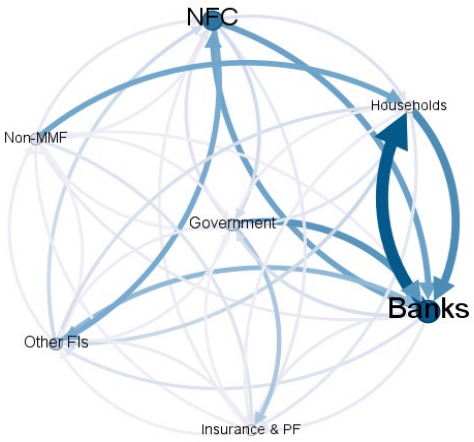
3/ Interest coverage ratio is calculated as the EBITDA divided by financial charges

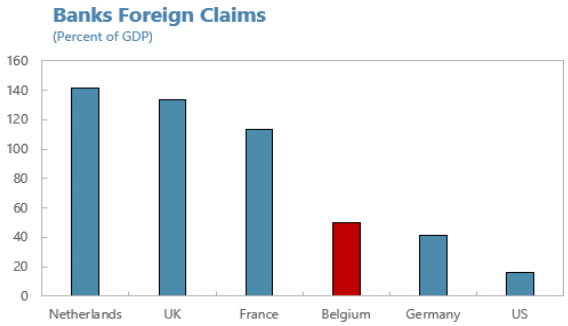
4/ The ratio is defined by interest before FISIM Allocation over augmented gross disposable income

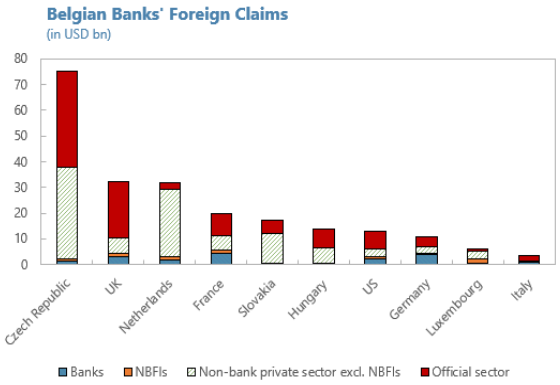
5/ Manufacturing (C), trade (G), real estate activities (L), construction (F), administrative and support services (N), professions (M), transport and storage (H), health and social services (Q), electricity and heating (D), agriculture (A), ICT (J), finance (K), other services (S), hospitality (I), water supply (E), entertainment (R), mining (B), public sector (O), education (P), activities of households as employer (T).

Figure 12. Belgium: Cross-Border and Cross-Sectoral Exposures









Sources: BIS Consolidated Banking Statistics, ECB, NBB, IMF staff estimates.

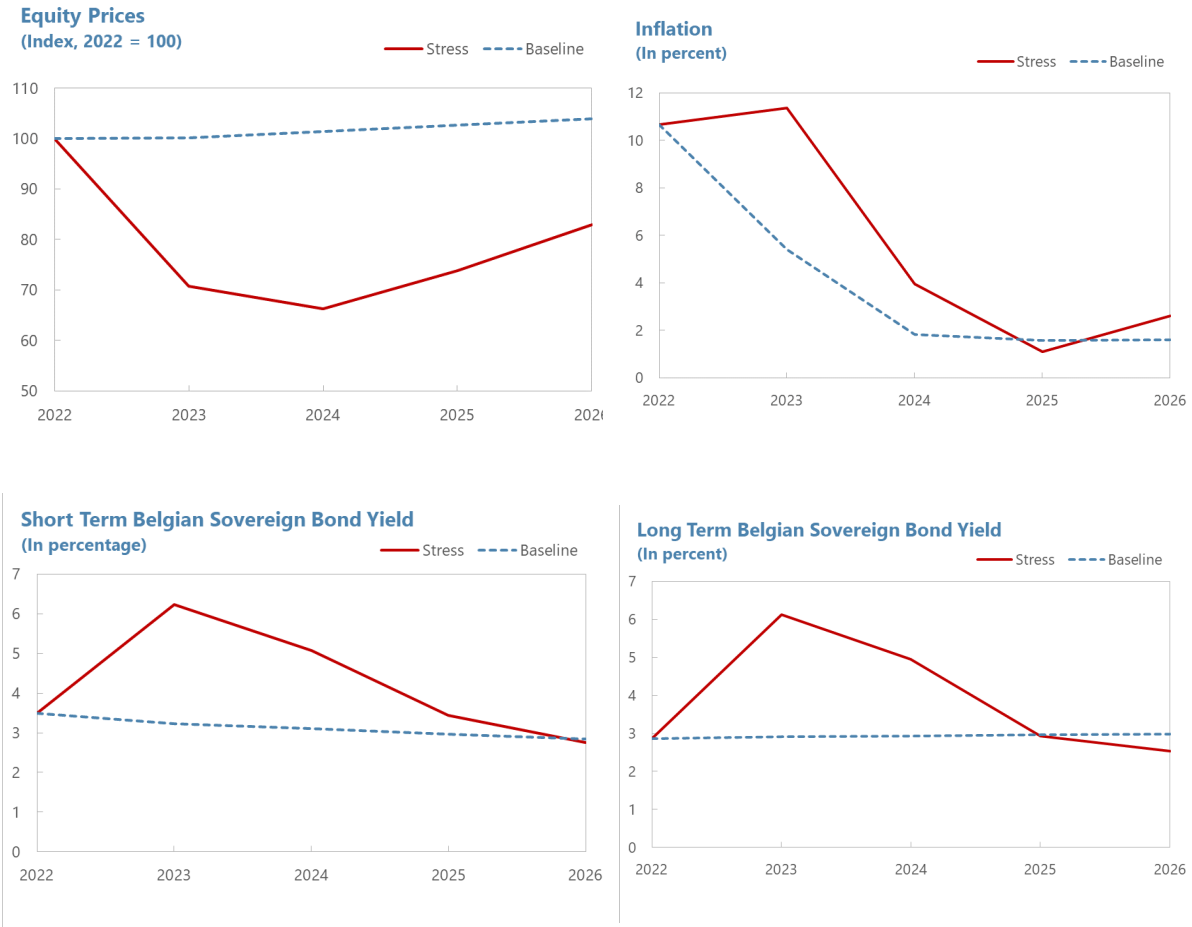
Notes:

The arrow points to the country/ sector that is exposed to; Greater funding flows between two countries/sectors are represented by thicker lines. Node size proportionally represents domestic banks' domestic positions/ intra-sectoral connections.

For cross-border interconnectedness chart, Czech Republic, Luxemburg, Hungary, and Slovakia's domestic positions are not included. The exposures of the Belgian subsidiaries of BNP Paribas and ING banks are accounted for in Belgium's exposure, and these exposures have been excluded from France's and the Netherlands' exposures, respectively.

Figure 13. Belgium: Macroeconomic Scenario

Figure 13. Belgium: Macroeconomic Scenario (concluded)



Source: April 2023 WEO and IMF staff calculations. Please also see Table 6.

Table 2. Belgium: Status of 2018 Belgium FSAP Key Recommendations			
Work Stream	**Recommendation**	**Authorities Assessment of Status[1]**	**Team's Assessment**
Systemic risk analysis	Enhance the risk analytical framework by:		
	(i) incorporating bank stress testing to the toolkit for systemic risk assessment and macroprudential policy;	F	**Continuing progress.** Satisfactory progress is being made on the path to a NII stress test. An operational model provided NII projections under interest-rate risk scenarios. There is also progress made in credit risk. The authorities need to make progress in modelling other risk areas (e.g., market risk) and invest in an engine that will assess firms' overall profitability and capital adequacy according to the risk projections.
	(ii) extending the horizon of insurance stress tests;	P	**Partly implemented.** Good progress is being made on the path to a multi-period stress test. Accounting for reactive management actions provides information of potential second round effects of a shock, the impact thereof can be evaluated in a second step.
	(iii) intensifying monitoring of insurers' mortgage loan portfolios and related underwriting standards;	F	**Implemented.** The response by the NBB was evidenced during the FSAP.
	(iv) in cooperation with the FSMA, further developing the shadow banking monitoring framework;	F	**Implemented.** The response by the NBB was evidenced during the FSAP.
	(v) enhancing the coverage and quality of commercial real estate data. (NBB)	F	**Partly implemented** The NBB has made notable progress to improve data coverage of CRE markets by gathering information about market developments and financial sector exposures, allowing for a more comprehensive yet still not exhaustive assessment of associated risks. To gain a better understanding about transactions, prices and property characteristics, it has tapped market intelligence and private data providers. 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.

Table 2. Belgium: Status of 2018 Belgium FSAP Key Recommendations (continued)			
Work Stream	**Recommendation**	**Authorities Assessment of Status**	**Team's Assessment**
Prudential policy, supervision, and oversight	Approve promptly the new macroprudential measures proposed by the NBB and enhance the NBB's ability to implement cyclical macroprudential tools in a timely manner. (MoF)	F N	**Partly implemented** Since the 2018 FSAP, the MoF has approved all macroprudential measures proposed by the NBB without undue delay. However, the institutional framework has remained unchanged, with the adoption of legally binding borrower-based measures being the domain of the government while capital-based instruments under CRD/CRR are under the control of the NBB but require government consent. To ascertain a smooth approval process, the NBB has strengthened its interaction with the government. It strives to communicate at an early stage its deliberations about systemic risks and its rationale for the consideration, activation or extension of particular macroprudential policy measures with the MoF or, if necessary, the inter-cabinet working group. Such exchanges with the government take place via a variety of channels but follow no formal protocol.
Prudential policy, supervision, and oversight	Continue to strengthen bank supervision by:		
	(i) ensuring the reliability and consistency of internal models and	F	**Directed to the ECB/SSM.**
	(ii) proactively assessing loan classifications to ensure prudent provisioning practices. (NBB/SSM)	P	**Implemented by the NBB.** Since the last FSAP several measures have been taken to improve loans classification practices. EBA issued Guidelines on the management of non-performing and forborne exposures (EBA/GL/2018/06) which the NBB adopted in 2019 with a circular. In addition, EBA issued Guidelines (EBA/GL/2016/07) on the application of the definition of default under Article 178 of Regulation (EU) No.575/2013. The NBB adopted these Guidelines by issuing a circular (Circular NBB_2019_31) in 2019. The current FSAP's review of inspection practices also indicated that the Belgium authorities undertake corrective action in case LSI banks deviate from appropriate classification practices.
Prudential policy, supervision, and oversight	Adjust to insurers' evolving risk profiles by:		
	(i) seeking to address the sector's increasing liquidity risk;	F	**Implemented** The NBB has made good progress in the introduction of liquidity risk management requirements for the broader insurance sector. The power of the NBB to temporarily suspend lapses in a run like scenario, provides the supervisor with more room to identify viable solutions. The latter, however, does not serve as a preventive measure, and could, if used, also have unintended consequences on market perception. The share of policies that can be lapsed at low cost is comparatively high in several institutions.

Table 2. Belgium: Status of 2018 Belgium FSAP Key Recommendations (continued)			
Work Stream	**Recommendation**	**Authorities Assessment of Status**	**Team's Assessment**
	(ii) continuing to analyze the business growth of reinsurance operations; and	F	**Implemented.** Staff complement has increased. The insurance supervision team was restructured. NBB issued various circulars to the insurance industry.
	(iii) engaging with the industry to gradually improve the quality of insurers' capital. (NBB)	F	**Implemented.** At the time of the FSAP there was no insurers left that applied the grandfathering provisions for subordinated debt, there was only 1 insurer left that applied the grandfathering provisions for technical provisions. The insurer met the Solvency II requirements with and without the subordinated debt transition.
Prudential policy, supervision, and oversight	Enhance FC supervision by:		
	(i) setting supervisory expectations for FC governance and risk management; and		**Directed to the ECB/SSM.**
	(ii) enhancing monitoring of intra-group transactions at FC level and the risk of regulatory arbitrage between insurance and banking sectors. (NBB/SSM)		**Directed to the ECB/SSM.** It should be noted however, that the NBB has put in place mechanisms that require Belgian subsidiaries of banks to set up an ad hoc committee of independent directors to issue an opinion on the interest of the on proposed material intra-group transactions. In addition, Article 77 of the Banking Law also allows the SSM/NNB to monitor (and if necessary, intervene) in a broad area of strategic decisions, including intra-group transactions.
Prudential policy, supervision, and oversight	Enhance SWIFT oversight by		
	(i) aiming at complementing the NBB's use of moral suasion in the oversight of SWIFT with additional regulatory and supervisory powers;	P	**Not implemented**. G10 senior level overseers had previously decided to stick with moral suasion, but since June 2022 have decided to review SWIFT oversight arrangements, to strengthen powers beyond moral suasion. Discussions are ongoing, but action is yet to be taken.
	(ii) broadening membership in the SWIFT Oversight Forum; and	F	**Implemented**.

Table 2. Belgium: Status of 2018 Belgium FSAP Key Recommendations (concluded)			
	(iii) improving information sharing on SWIFT oversight and assurance reports. (NBB)	F	**Implemented**.
Financial safety net and crisis management	(i) Ensure the feasibility of resolution strategies for banking groups with systemically important subsidiaries (Single Resolution Mechanism) and (ii) prioritize resolution planning for the two less significant institutions with the highest share of insured deposits (NBB)	(i) P (ii) F	(i) Out of the scope of the national FSAP. (ii) Implemented
Financial safety net and crisis management	Strengthen the DIS by		
	(i) publicly committing to shortening the DIS pay- out period to seven days by 2019;	N	**Not implemented.** The shortening of the pay-out period to seven working days was not advanced faster. As per this recommendation, it should have been achieved by 2019 instead of by January 2024.
	(ii) establishing credit lines with the MoF; and	P	**Partly implemented** There is a credit line from the MoF, but it needs to be operationalized.
	(iii) segregating the Guarantee Fund from government funds. (MoF)	P	**Not implemented.** The Guarantee Fund has not been segregated yet from government funds.
AML/CFT	Ensure adequate transparency of beneficial ownership of legal persons and arrangements. (MoF)	F	**Implemented.** Belgium had made efforts to enhance the transparency of beneficial ownership through the introduction of a national beneficial ownership registry, as per the requirements of the European Union's Fifth Anti-Money Laundering Directives. The Ultimate Beneficial Owner (UBO) register, managed by the Federal Public Service Finance, requires Belgian companies, trusts, foundations and other legal entities to disclose their beneficial owners, and this information is made accessible to competent authorities, financial intelligence units, and obliged entities. This register enhances financial transparency by making it clear who ultimately owns and benefits from each company and legal entity.
[1]"F" stands for fully implemented, "P" for partially implemented and "N" for No Progress.			

Table 3. Belgium: Selected Economic Indicators, 2020–28

				Projections					
	2020	2021	2022	2023	2024	2025	2026	2027	2028
	(Percent change, unless otherwise indicated)								
Real economy									
Real GDP	-5.3	6.9	3.0	1.4	1.0	1.2	1.2	1.2	1.3
Domestic demand	-6.2	6.1	2.9	2.4	1.3	1.5	1.6	1.6	1.7
Private consumption	-8.2	6.3	3.2	1.3	0.9	1.6	1.6	1.6	1.6
Public consumption	-0.3	5.2	4.2	0.4	1.1	1.3	1.3	1.3	1.3
Gross fixed investment	-5.2	5.0	-0.2	5.6	2.2	1.6	2.1	2.0	2.4
Business investment	-5.6	4.7	1.0	7.9	2.6	2.3	2.1	2.0	2.0
Public investment	1.1	4.7	-1.6	8.3	3.4	-2.0	3.3	2.9	6.7
Dwellings	-7.2	6.0	-3.2	-3.8	0.0	1.4	1.4	1.4	1.4
Stockbuilding 1/	-0.6	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0
Foreign balance 1/	1.0	0.8	0.1	-0.9	-0.3	-0.3	-0.4	-0.4	-0.4
Exports, goods and services	-6.3	13.9	4.9	-0.2	1.5	3.5	3.6	3.5	3.3
Imports, goods and services	-7.4	13.0	4.9	0.8	1.9	3.8	4.0	3.9	3.7
Household saving ratio	20.4	17.2	12.9	13.9	14.4	14.7	14.8	15.0	15.2
Potential output growth	1.0	1.9	1.8	1.8	1.5	1.4	1.3	1.3	1.3
Potential output growth per working age person	0.8	1.6	1.1	1.3	1.5	1.1	1.0	1.0	1.0
Output gap (in percent)	-4.7	0.0	1.2	0.8	0.3	0.1	0.1	0.0	0.0
Employment									
Unemployment rate (in percent)	5.6	6.3	5.6	5.6	5.6	5.5	5.5	5.4	5.4
Employment growth	0.0	1.9	2.0	1.0	0.6	0.4	0.6	0.6	0.5
Prices									
Consumer prices	0.4	3.2	10.3	2.5	4.4	2.0	1.8	1.8	2.0
GDP deflator	1.6	3.2	5.9	3.8	3.3	2.0	1.8	1.8	1.9
	(Percent of GDP; unless otherwise indicated)								
Public finance									
Revenue	49.9	49.5	49.6	50.5	51.3	51.1	51.0	51.0	51.2
Expenditure	58.8	54.8	53.2	55.0	55.7	55.8	55.9	56.4	56.6
General government balance	-8.9	-5.4	-3.5	-4.5	-4.4	-4.7	-4.9	-5.3	-5.4
Structural balance	-6.4	-5.2	-4.1	-4.6	-4.4	-4.7	-4.9	-5.3	-5.5
Structural balance (excl. Covid measures)	-2.0	-2.3	-2.9	-4.0	-4.1	-4.7	-4.9	-5.3	-5.5
Structural primary balance	-4.7	-3.5	-2.5	-2.8	-2.3	-2.5	-2.6	-2.7	-2.7
Primary balance	-6.9	-3.7	-2.0	-2.7	-2.4	-2.4	-2.5	-2.7	-2.7
General government debt	111.8	108.0	104.3	105.5	104.7	106.4	108.6	111.1	113.4
External Sector									
Goods and services balance	2.0	1.8	-1.6	-1.4	-0.9	-0.4	-0.2	0.0	0.1
Current account	1.4	1.3	-1.0	-0.9	-0.3	0.2	0.5	0.7	0.9
Exchange rates									
Euro per U.S. dollar, period average	0.9	0.8	0.9	...	...	...	...	...	...
NEER, ULC-styled (2005=100)	97.9	98.0	96.3	...	...	...	...	...	...
REER, ULC-based (2005=100)	96.0	97.3	98.7	...	...	...	...	...	...
Memorandum items									
Nominal GDP (in billions of euros)	460.7	507.9	554.0	583.7	609.1	628.8	648.0	667.7	689.6
Population (in millions)	11.5	11.6	11.6	11.7	11.7	11.8	11.8	11.9	11.9

Sources: Haver Analytics, Belgian authorities, and IMF staff projections.

1/ Contribution to GDP growth.

Table 4. Belgium: Financial Soundness Indicators of the Banking Sector, 2013–23 1/

(In percent unless otherwise indicated)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023H
Earnings and profitability											
Return on assets	0.3	0.5	0.6	0.6	0.6	0.5	0.6	0.4	0.7	0.7	0.8
Return on equity	5.9	7.7	10.1	9.1	8.7	8.0	8.7	5.9	10.2	9.9	11.9
Net interest income to total income	62.6	70.2	67.7	66.0	61.2	63.5	63.3	63.4	65.3	65.8	67.8
Interest margin	1.2	1.6	1.8	1.8	1.6	1.6	1.6	1.5	1.4	1.5	1.5
Average yield on assets	2.6	2.7	2.6	2.4	2.1	2.1	2.1	1.8	1.5	2.0	3.1
Average cost of funding	1.4	1.1	0.8	0.6	0.5	0.5	0.5	0.3	0.1	0.5	1.6
Noninterest income to gross income	37.4	29.8	32.3	34.0	38.8	36.5	36.7	36.6	34.7	34.2	32.2
Of which: Net fee and commission income	27.7	25.8	26.7	25.1	24.3	24.6	24.1	25.0	29.3	28.2	25.5
(Un)realized capital gains booked in P&L	6.0	-0.3	5.3	6.7	3.7	5.4	2.3	0.0	2.5	3.5	2.3
Cost/income ratio	62.4	61.2	58.6	58.4	58.2	61.3	59.5	61.7	60.4	61	63.8
Structure assets											
Total assets (in percent of GDP)	251.0	249.0	236.5	266.1	227.3	215.7	220.0	250.9	227.4	210.0	207.7
Of which (in percent of total assets):											
Loans to credit institutions	12.3	9.1	8.5	7.5	6.8	6.7	7.9	4.3	3.3	2.5	3.6
Debt securities	18.9	19.6	18.0	16.4	14.4	13.3	12.3	12.1	10.9	10.8	11.0
Equity instruments	0.4	0.6	0.7	0.4	0.4	0.4	0.4	0.2	0.2	0.2	0.2
Derivatives	6.8	8.4	6.4	5.8	4.4	3.5	3.8	3.8	2.8	4.4	3.8
Loans to customers	53.9	54.1	56.4	55.4	59.4	62.3	61.9	57.2	59.0	62.9	61.8
Of which: Belgian residents (in percent of loans)	69.4	69.2	69.2	71.0	70.7	71.6	71.2	72.5	72.4	70.6	70.7
Other EMU residents (in percent of loans)	15.7	16.2	16.1	15.1	15.0	15.1	14.9	15.4	15.6	16.4	16.1
Rest of the world (in percent of loans)	14.9	14.5	14.7	13.9	14.2	13.3	13.9	11.9	12.0	13.0	13.2
Mortgage loans (in billions euros) 2/	190.8	202.4	216.1	229.7	227.4	243.3	261.4	274.1	289.0	309.5	313.7
Consumer loans (in billions euros) 2/	26.9	17.2	19.7	24.8	26.2	25.3	28.0	27.8	26.7	25.7	28.5
Term loans (in percent of loans)	40.8	n.a	n.a	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Reverse repo operations (in percent of loans)	3.1	1.7	1.5	1.0	1.1	0.5	0.5	0.3	0.3	0.3	0.2
Funding and liquidity (in percent of total assets)											
Debts to credit institutions	10.7	9.1	8.5	10.3	9.0	8.6	9.0	6.2	6.0	5.9	10.3
Bank bonds and other debt securities 3/	10.1	9.3	9.1	9.3	9.6	8.9	7.7	6.5	5.9	6.2	7.1
Customer deposits	54.7	58.5	61.0	58.4	62.2	63.9	64.6	64.3	65.9	68.4	66.6
Of which: Sight deposits 4/	18.1	24.2	28.4	26.4	30.3	31.1	31.7	33.6	36.3	35.3	31.1
Saving deposits 5/	21.0	19.9	23.0	22.8	23.5	24.7	25.1	24.7	24.9	25.2	24.2
Term deposits 4/	9.6	8.9	8.1	6.2	5.7	5.7	5.1	3.6	3.1	6.0	9.0
Retail deposits 5/	34.8	33.5	35.1	35.6	37.7	39.2	39.6	39.1	40.0	41.3	40.1
Repo's	2.7	2.3	1.7	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.7
Liquid assets 6/	36.8	32.8	32.2	32.5	31.7	29.2	26.8	35.0	35.4	36.4	37.4
Asset quality											
Sectoral distribution of loans (in percent of total assets)											
Credit institutions	12.3	9.1	8.5	6.1	6.8	6.5	7.7	4.2	3.2	2.4	3.5
Corporate (until 2013) /Non financial corporations (as of 2014)	18.5	20.6	22.0	21.4	22.7	24.8	24.2	21.5	23.6	25.6	25.1
Retail (until 2013) / Households (as of 2014)	29.4	25.5	27.4	27.5	29.6	29.9	30.4	29.1	29.3	30.8	30.5
Central governments (until 2013)/ General government (as of 2014)	1.0	4.4	4.3	4.1	4.3	4.4	4.0	3.6	3.5	3.7	3.7
Non-credit institutions (until 2013) / Other financial corporations (as of 2014)	5.0	3.5	2.7	2.4	2.9	2.9	3.1	2.9	2.4	2.6	2.4
Non-performing loans (NPL) as percent of gross loans 6/	3.1	2.7	2.6	2.4	2.1	1.9	1.9	2.1	1.9	1.8	2.1
Provisions and write-offs as percent of NPL 6/	54.1	57.1	54.3	55.7	57.2	61.6	60.4	60.6	62.0	59.6	50.5
Capital adequacy											
Regulatory capital to risk-weighted assets	18.7	17.3	18.7	18.8	19.0	18.8	18.8	20.3	20.5	20.1	20.2
Regulatory Tier 1 capital to risk-weighted assets	16.4	15.1	16.0	16.2	17.0	16.5	16.7	18.2	18.9	18.5	18.4
Capital to assets	6.4	6.6	6.5	7.1	7.1	7.2	7.0	7.0	6.7	6.5	6.4
NPL net of provisions as percent of Tier 1 capital 6/	12.3	12.0	12.9	10.7	7.9	6.5	6.3	6.3	5.7	6.3	9.2
Net open position in foreign exchange to capital	2.1	3.4	2.6	2.1	1.6	1.9	2.1	2.0	1.7	2.4	2.5

Sources: National Bank of Belgium.

1/ Consolidated data. Data are based on the IAS/IFRS reporting scheme.

2/ Only loans to households as of 2014

3/ Excluding saving certificates as of 2014

4/ Deposits booked at amortized cost only.

5/ Only household deposits as of 2014

6/ Unconsolidated data.

Table 5. Belgium: Structure of the Financial System 2009-22

(In percent unless otherwise indicated)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Banking sector														
Number of credit institutions	104	107	108	104	104	103	99	92	88	87	85	83	83	80
Domestic	48	48	47	42	39	37	37	34	34	32	31	31	30	30
Branches of foreign banks	56	59	61	62	65	66	62	58	54	55	54	52	53	50
Total assets (in billions of euros)[1]	1,191	1,151	1,147	1,049	961	996	970	1,022	994	993	1,048	1,132	1,151	1,159
of which Four largest banks	1,092	1,003	968	857	775	816	803	850	840	847	888	959	976	984
of which claims on Belgian residents	483	478	500	527	488	476	475	508	517	530	540	640	680	672
Insurance sector														
Number of insurance companies	147	145	142	134	130	128	119	118	114	115	113	103	98	99
Life	29	28	26	24	23	23	21	22	20	16	16	14	12	11
Mixed	23	24	25	25	24	24	24	24	25	24	24	23	21	22
Non-life	94	91	89	83	81	79	72	70	67	72	71	64	62	64
Reinsurance	1	2	2	2	2	2	2	2	2	3	2	2	3	2
Total assets (in billions of euros)[2]	234	249	257	265	271	281	286	326	321	323	360	377	379	326
Net premiums written (in billions of euros)														
Life	18	19	18	21	16	16	15	15	15	16	16	15	16	14
Non-life	9	10	10	11	11	12	13	13	13	13	15	16	17	18
Other financial intermediaries														
Stockbroking firms														
Number	23	23	22	21	20	20	20	20	19	17	17	14	14	12
Income (in billions of euros)	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1
Total assets (in billions of euros)	2.3	2.4	2.0	2.2	2.3	3.2	2.1	2.4	3.0	1.3	1.1	1.1	0.9	1.1
Portfolio management companies														
Number	24	24	20	21	19	19	19	19	17	17	16	17	17	19
Income (in billions of euros)	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Assets under management (in billions of euros)	49	62	3	4	3	4	5	6	7	7	8	8	12	12
Management companies of undertakings for collective investment														
Number	7	7	7	7	7	7	7	7	9	13	14	15	16	18
Income (in billions of euros)	0.5	0.9	0.8	0.8	1.0	1.1	1.3	1.2	1.7	1.8	1.7	1.8	2.2	2.7
Assets under management (in billions of euros)	189	194	178	178	175	201	218	248	292	266	246	268	258	150
Undertakings for collective investment distributed in Belgium														
Number of investment companies	421	460	484	509	521	578	638	661	659	669	661	655	667	663
Belgian law	149	148	142	144	130	128	130	128	126	117	116	108	105	102
Foreign law	272	312	342	365	391	450	508	533	533	552	545	545	562	561
Assets under management	135	139	115	118	132	164	204	211	237	227	257	260	332	n.a
Pension funds														
Number	263	251	245	237	201	196	198	199	196	193	183	169	160	153
Total assets (in billions of euros)	14	16	16	19	20	23	25	30	35	34	40	43	47	40

Sources: National Bank of Belgium and Financial Services and Markets Authority.

[1] On a consolidated basis.

[2] Figures since 2016 are expressed at market value (Solvency II).

Table 6. Belgium: Macroeconomic Scenarios

		2022	2023	2024	2025	2026	2027
Real GDP growth (percentage)	Baseline	3.1	0.7	1.1	1.2	1.2	1.2
	Stress	3.1	-3.8	-2.2	1.1	4.4	1.9
Unemployment (percentage)	Baseline	5.5	6.0	6.0	5.6	5.5	5.5
	Stress	5.5	6.4	9.1	9.3	7.1	5.0
Inflation (percentage)	Baseline	10.3	4.7	2.1	1.7	1.8	1.9
	Stress	10.3	11.4	3.9	1.1	2.6	-0.2
Short Term Rate (percentage, year average)	Baseline	2.8	3.2	2.9	2.8	2.8	2.9
	Stress	2.8	6.2	4.9	3.2	2.7	2.9
House Price Index (2022=100)	Baseline	100.0	101.6	101.4	99.9	98.3	97.1
	Stress	100.0	75.6	71.0	75.8	81.7	84.6
CRE Price Index (2022=100)	Baseline	100.0	101.6	101.4	99.9	98.3	97.1
	Stress	100.0	70.9	66.3	78.2	85.6	90.9
Equity prices (Index, 2022=100)	Baseline	100.0	100.7	101.8	103.0	104.3	105.5
	Stress	100.0	71.2	66.4	74.1	83.2	90.1
10 year German Sovereign Bond Yield (percentage)	Baseline	2.1	2.2	2.2	2.2	2.2	2.3
	Stress	2.1	5.4	4.2	2.2	1.8	1.9
Long Term Belgian Sovereign Bond Yield (percentage)	Baseline	2.9	2.9	2.9	3.0	3.0	3.2
	Stress	2.9	6.1	5.0	2.9	2.5	2.9
Short Term Belgian Sovereign Bond Yield (percentage)	Baseline	3.5	3.2	3.1	3.0	2.8	2.9
	Stress	3.5	6.2	5.1	3.4	2.8	2.9

Source: IMF staff calculations

Note: The WEO figures corresponded to April 2023 WEO projections and differ from the latest updates presented in Table 3.

Table 7. Belgium: Risk Assessment Matrix[1/]		
Source of Risks	**Likelihood of Realization of Threat in the Next 1–3 years**	**Expected Impact on Financial Stability if Threat is Realized (High, Medium, or Low)**
Global Conjunctural and Structural Risks		
Intensification of regional conflict(s). Escalation of Russia's war in Ukraine or other regional conflicts and resulting economic sanctions disrupt trade (e.g., energy, food, tourism, and/or critical supply chain components), remittances, FDI and financial flows, and payment systems, and lead to refugee flows.	**High**	**High** Direct energy, trade and financial links with Russia and Ukraine are limited. An escalation of the war would affect the economy mainly via indirect growth spillovers and rekindled inflation from higher commodity prices. Frozen assets of Russian entities held by Euroclear Bank raise litigation and reputational risks with potentially adverse consequences for financial stability.
Abrupt global slowdown or recession. Global and idiosyncratic risk factors combine to cause a synchronized sharp growth downturn, with recessions in some countries, adverse spillovers through trade and financial channels, and market fragmentation causing sudden stops in EMDEs. **Europe:** Intensifying fallout from the war in Ukraine, recurrent energy crisis and supply disruptions, and monetary tightening exacerbate economic downturns, and housing and commercial real estate market corrections.	**Medium** **Medium**	**High** As a highly open economy, spillovers from a sharp downturn in key trading partners (France, Germany, The Netherlands) would dampen economic growth. With elevated financial sector exposures to real estate markets, steep price corrections would weaken macro-financial stability.
Monetary policy miscalibration. Amid high economic uncertainty and volatility, major central banks pause monetary policy tightening or pivot to loosen monetary policy stance prematurely, de-anchoring inflation expectations, triggering a wage-price spiral and spillovers to financial markets	**Medium**	**High** Near-universal automatic wage and benefit indexation may quickly translate de-anchored inflation expectations into wages and prices. International competitiveness would suffer, weakening the external balance and potential output

Table 7. Belgium: Risk Assessment Matrix (concluded)

Source of Risks	Likelihood of Realization of Threat in the Next 1-3 years	Expected Impact on Financial Stability if Threat is Realized (High, Medium, or Low)
Sovereign debt distress. Domino effects of higher global interest rates, a growth slowdown in AEs, and/or disorderly debt events in some EMDEs spillover to other highly indebted countries, resulting in capital outflows, an increase in risk premia, and loss of market access.	**Medium**	**Medium** Elevated financing costs for a prolonged period would undermine fiscal sustainability, given elevated debt and deficit levels. A favorable sovereign debt maturity profile provides support. The impact on banks is curbed by their relatively modest exposure to sovereign debt.
Deepening geoeconomic fragmentation. Broader and deeper conflict(s) and weakened international cooperation result in a more rapid reconfiguration of trade and FDI, supply disruptions, protectionism, technological and payments systems fragmentation, rising input costs, financial instability, a fracturing of international monetary and financial systems, and lower potential growth.	**High**	**Medium** Belgium is vulnerable to deglobalization due to strong cross-border real and financial linkages and the presence of multi-national corporations and large financial/payment services providers, heightening risks to economic dynamism and financial stability. Financial sector resilience and EU/euro area membership provide support.
Disorderly energy transition. Disorderly shift to net-zero emissions (e.g., owing to shortages in critical materials) and climate policy uncertainty cause supply disruptions, stranded assets, market volatility, and subdued investment and growth.	**Medium**	**Medium** Despite a rather diversified energy supply, slow progress with reaching ambitious climate targets may require accelerated efforts in later years, triggering a disorderly transition with negative consequences for an energy intensive, highly industrialized economy.
Belgium-Specific Risks		
Political uncertainty and fragmentation may intensify ahead of general elections in 2024 and lead to a protracted government formation process, delaying fiscal consolidation and structural reforms in support of higher potential growth, energy security, climate transition and digital transformation	**High**	**High** Fiscal sustainability concerns may result in a substantial increase in borrowing costs and a need for a sharper fiscal adjustment, with negative consequences for growth and financial stability. Prolonged inaction in policy areas demanding urgent attention may dampen economic output, weaken competitiveness, and aggravate social frictions.

[1/] The Risk Assessment Matrix (RAM) shows events that could materially alter the baseline path. The relative likelihood is the staff's subjective assessment of the risks surrounding the baseline ("low" is meant to indicate a probability below 10 percent, "medium" a probability between 10 and 30 percent, and "high" a probability between 30 and 50 percent). The RAM reflects staff views on the source of risks and overall level of concern as of the time of discussions with the authorities. Non-mutually exclusive risks may interact and materialize jointly.

Table 8. Belgium: Banking Sector Stress Testing Matrix		
Banking Sector: Solvency Stress Test		
Top-down by IMF		
1. Institutional Perimeter	Exercise	○ Top-Down by FSAP team.
	Institutions included	○ Seven banks subcategorized as SIs. ○ Among the SIs, five are domestic and two are subsidiaries of foreign institutions. ○ All banks are domestically focused, but they have large cross-border exposures.
	Market share	○ Total coverage is about 89.4 percent of the banking sector.
	Data and baseline date	○ December 2022 ○ Supervisory data: Bank balance sheet and supervisory statistics (including FINREP and COREP), information on interest rate risk in the banking book (IRRBB), liquidity risk and market risk sensitivities (including STE templates) provided by the authorities and the ECB. Expected Default Frequency sourced from Moody's. Further supervisory information was provided, including the probability of defaults by credit portfolios, and a bank-specific stage transition matrix by portfolio from FINREP. ○ Market and publicly available data, such as information from ECB statistical data warehouse on funding and lending rates by type of asset and funding portfolios. ○ Scope of consolidation: banking activities of the consolidated banking group for banks having their headquarters in Belgium. Foreign subsidiaries are assessed on the unconsolidated level covering domestic activities only. ○ Coverage of sovereign and non-sovereign securities exposures: debt securities measured through fair value (FVPL and FVOCI) and amortized cost (AC) account. ○ Coverage of lending exposure: credit institutions, nonbank financial institutions, household, and corporate.
2. Channels of Risk Propagation	Methodology	○ FSAP team satellite models and methodologies. ○ Balance-sheet regulatory approach. ○ Market risk is treated as an add-on component, with a separate calibration. The market risk stress scenario has an impact on both capital resources (either via profit and loss or via Other Comprehensive Income (OCI)) and capital requirements (RWA). The impact on capital resources comprises of positions in the trading book as well as other fair valued items in the banking book. The impact on RWA for market risk evolve with balance sheet assumptions.

Table 8. Belgium: Banking Sector Stress Testing Matrix (continued)

		○ Traded risk impact from the revaluation of trading assets (FVPL) and securities classified as fair value through other comprehensive income (FVOCI) securities by counterparty: central government (by country issuers), credit institutions, other financial institutions, and nonfinancial corporates. Credit spreads on sovereign, credit institutions and corporate securities interpolated using bank-specific residual maturity at the book and issuer level (i.e., sovereign issuers by country and individual corporate issuers by ISIN codes). Credit spreads on other securities estimated on a hypothetical portfolio using a duration proxy. Valuation effects assessed using a modified duration approach. Hedges are considered as ineffective under stress. ○ The losses for securities portfolios are based on duration approach. Losses on equities (both long and short position) were based on stock market price movement specified by the scenario. ○ For internally modelled exposures (IRB), projection of PiT and TTC PDs, LGD, EAD and RWA. For STA exposures, projection of new flows of defaulted exposures, coverage ratio for defaulted loans, and risk weight downgrade for performing exposures. Credit risk projections for IRB and STA exposures cover credit institutions, nonbank financial corporates, and households. Corporate PDs for largest exposures are proxied by Moody's EDFs. The resulting impact is translated into credit loss impairment charges and shifts to RWAs due to capital charges for defaulted assets. ○ Provisioning for IRB and STA are modeled using IFRS9 transition matrix approach. Transition matrices, PiT PDs, PiT LGDs for loan and securities classified under financial asset measured through amortized cost (AC), and other comprehensive income (FVOCI) are modeled using COREP data. ○ Net interest income projection incorporates the maturity profile of assets and liabilities. Effective interest rates are projected through econometric satellite model, where the exogenous variables reflect the interest rate environment. Sensitivity analyses will be used to examine changes in depositor behavior. ○ Funding costs projected at the portfolio level using funding structure by product (retail and wholesale deposits, secured and unsecured debt securities, repo, etc.) and maturity bucket (overnight vs. term). Funding projections capture systemic risk (linked to the scenario) and idiosyncratic risk (for spreads on debt instruments issued over benchmark). Funding cost projections utilize bank level data on from COREP templates. Lending rates are projected at the system level and attached to bank-specific interest rates and outstanding amount at cut-off date (interest rate on corporate and household loans and debt securities). ○ Change in risk weighted assets (RWAs) are estimated on banking book exposures (credit risk charges – CRC) and market risk exposures (market risk charges – MRC) according to Basel III rules. Additional

Table 8. Belgium: Banking Sector Stress Testing Matrix (continued)		
		regulatory risk charges (operational risk charges – ORC and counterparty credit risk charges – CCRC) will change according to the overall balance-sheet growth assumptions. The balance sheet will follow nominal GDP growth, when positive, or it will remain stable, when the latter is negative.
	Stress test horizon	○ 2023 Q1–2026 Q4 (4 years)
3. Tail Shocks	Scenario	○ Two Scenarios: ○ A baseline scenario based on the April 2023 WEO macroeconomic projections. ○ An adverse scenario that captures the key risks in the RAM. This scenario relies on GFM, a structural macroeconometric model of the world economy, disaggregated into forty national economies, documented in Vitek (2018). Scenarios for foreign countries where Belgium has significant exposure is extracted from GFM and is internally consistent with country scenarios of other ongoing FSAPs.
4. Risks and Buffers	Risk covered	○ Risks covered include credit (on loans and debt securities), market (valuation impact of debt instruments through repricing and credit spread risk as well as the P&L impact of net open positions in market risk factors such as foreign exchange risks) and interest rate risk (IRRBB) on the banking book. ○ Concentration risk by sensitivity analysis. ○ Solvency and liquidity risk interactions, mainly through asset haircut.
	Behavioral Adjustment	○ For the growth of the banks' balance sheet over the stress-test horizon, a quasi-static approach is used. Asset allocation and the composition of funding remain the same, whereas the balance sheet grows in line with the nominal GDP paths of major geographical exposures and subject to reduced credit demand in material jurisdictions and FX shock from revaluation effects on foreign currency loans specified in the stress test scenario. However, to prevent the banks from deleveraging, the rate of change of balance sheets is set at a floor of zero percent. This constraint is binding in the adverse scenario. ○ In projecting RWAs, standardized and IRB portfolios are differentiated. For the standardized portfolios, RWAs changed due to the balance sheet growth, new inflows of non-performing loans, new provisions for credit losses, exchange rate movements, and the conversion of a portion of off-balance sheet items (undisbursed credit lines and guarantees) to on-balance sheet items. For the IRB portfolios, through-the-cycle-PDs, downturn LGDs and EAD for each asset class/industry are used to project risk weights. ○ Interest income from non-performing loan is not accrued. ○ We assume that banks do not issue new shares or make repurchases during the stress test horizon. Dividends are assumed to be paid out at 30 percent of current period net income after taxes (i.e., only if net income is positive) by banks that follow supervisory capital requirements.

Table 8. Belgium: Banking Sector Stress Testing Matrix (continued)		
5. Regulatory and Market-Based Standards and Parameters		○ National regulatory framework Basel III regulatory minima on CET1 (4.5 percent) and include any requirements due to systemic buffers for three other systemically important institution (O-SII). In addition to the CET1, the team evaluates total banking capital adequacy ratio against the 8 percent level, their Tier 1 capital ratio against the 6 percent benchmark and the leverage ratio during the stress test horizon against the 3 percent Basel III minimum requirement. The same hurdle rate is used for baseline and adverse scenario. The hurdle rate for CET1, T1 and total capital adequacy do not include capital conservation and capital countercyclical buffers as well as pillar 2 requirement. Banks that end the stress test horizon with a capital level or a leverage ratio below the relevant hurdle rates, are considered to have failed the test.
6. Reporting Form for Results	Output presentation	○ The results of the stress tests are reported using a variety of charts and tables. These potentially include the evolution of capital ratios for the system as a whole and as groups of retail banks and large international banks. Outputs also include information on impact of different result drivers, including profit components, losses due to realization of different risk factors; capital shortfall as sum of individual shortfalls; in euros and in percent of nominal annual GDP; number of banks and corresponding percentage of assets below the regulatory minimum (or below the minimum leverage ratio).
Banking Sector: Liquidity Stress Test		
Top-down by IMF		
1. Institutional Perimeter	Exercise	○ Top-Down by FSAP team.
	Institutions included	○ Seven banks subcategorized as SIs (same sample as in solvency stress test).
	Market share	○ Total coverage is about 89.4 percent of the banking sector
	Data and baseline date	○ Latest data: April 2023. ○ Source: supervisory data (LCR, NSFR, and ALMM Maturity Ladder template). ○ Scope of consolidation: banking activities of the consolidated banking group for banks having their headquarters in Belgium. Foreign subsidiaries are assessed on the unconsolidated level covering domestic activities only.
2. Channels of Risk Propagation	Methodology	○ Basel III LCR and cash-flow based liquidity stress test using maturity buckets by banks, incorporating both contractual and behavioral (where available) with assumption about combined interaction of funding and market liquidity and different level of central bank support. ○ Liquidity test in EUR and foreign currencies (USD, pound sterling, Czech koruna).
3. Risks and Buffers	Risks	○ Funding liquidity. ○ Market liquidity.
	Buffers	○ The counterbalancing capacity, including liquidity obtained from markets and/or the central bank's facilities. Expected cash inflows are also included in the cash-flow based and LCR-based analysis.

Table 8. Belgium: Banking Sector Stress Testing Matrix (continued)		
4. Tail shocks	Size of the shock	○ The run-off rates are calibrated to reflect scenarios of system-wide deposit runs and dry-up of unsecured wholesale and retail funding, with additional run-off for non-resident deposits on top of the retail and wholesale run-off, which is calibrated following historical events, recent international experience in liquidity crisis and IMF expert judgment. ○ The liquidity shocks will be simulated for 1–month for both LCR, and 5-days, 1-month, 3-months, and 1-year for the cash-flow based approach. ○ The haircuts of high-quality liquid assets (HQLA) are calibrated against ECB haircuts, past Euro Area FSAPs, and market shock for investment securities and money market instruments in the solvency stress test. ○ Six cashflow analysis scenarios: The first three capture stress in the retail and wholesale segments, which translate in deposit outflows, and lower inflows through losses from loans in the respective segments. The shock is also assumed to affect (modestly) the value of assets—hence affecting inflows and outflows through collateralized operations as well as the value of liquid assets. The fourth scenario features stress on wholesale market funding, translating into a more aggressive haircut on assets. The fifth scenario combines the previous one with a stress on wholesale deposits and loans. Finally, the sixth scenario is a combination of all the previous five. ○ Since retail deposits is the main source of funding for the financial system the system will implement a sensitivity analysis of the outflow rates on uninsured deposits to identify the liquidity breaking point of the banking sector. ○ Three cashflow stress scenarios: Scenario A is a deposits funding stress. Household and corporates face strong liquidity strain and banks experience net outflows of deposits as enterprises and households run down their liquid savings, while counterbalancing haircuts increase mildly. Scenario B is a market liquidity stress. Banks experience outflow of funds from wholesale borrowers and the market price of the assets on which banks rely collapse. Subsequently, CBC haircuts increase significantly. Scenario C is a combined stress and is in line with the recent market turmoil / GFC.
5. Regulatory and Market-Based Standards and Parameters	Regulatory standards	○ Consistent with Basel III regulatory framework (LCR). ○ Liquidity shortfall by bank.
6. Reporting Format for Results	Output presentation	○ Liquidity ratio or shortfall by groups of banks and aggregated (system wide). ○ Number of banks that still can meet or fail their obligations.

Table 8. Belgium: Banking Sector Stress Testing Matrix (concluded)		
Banking Sector: Solvency and Liquidity Interaction		
Top-down by IMF		
7. Institutional Perimeter	Exercise	○ Top-Down by FSAP team.
	Institutions included	○ Seven banks subcategorized as SIs (same sample as in solvency stress test).
	Market share	○ Total coverage is about 89.4 percent of the banking sector
	Data and baseline date	○ Latest data: April 2023. ○ Source: Top-down solvency and cashflow analysis output. ○ Scope of consolidation: banking activities of the consolidated banking group for banks having their headquarters in Belgium. Foreign subsidiaries are assessed on the unconsolidated level covering domestic activities only.
8. Channels of Risk Propagation	Methodology	○ Estimate the proportion of the HTM debt portfolio that will be sold to cover net outflows under the three cash-flow analysis scenarios. ○ Estimate the unrealized losses due to revaluation of the price of these securities over the course of the scenario. ○ Assign an additional fire-sales haircut and implementation of the total fire-sales losses to the total profitability and capital depreciation over the course of the scenario.
9. Risks and Buffers	Risks	○ Funding liquidity. ○ Market risk.
10. Tail shocks	Size of the shock	○ Total liquidity shocks over a period of 1-year for the cash-flow based approach. ○ The haircuts of high-quality liquid assets (HQLA) are calibrated against ECB haircuts, past Euro Area FSAPs, and market shock for investment securities and money market instruments in the solvency stress test. ○ HTM unrealized losses are estimated using the historical increase of the risk rate in 2022 and the risk-free rate path of the macroeconomic scenarios
11. Reporting Format for Results	Output presentation	○ Losses from HTM fire-sales (system wide). ○ New profitability and capital adequacy ratios.

Table 9. Belgium: Insurance Sector Stress Testing Matrix			
Insurance Sector: Solvency Analysis			
Top-down by IMF / Bottom-up by insurance undertakings			
1.	Institutional Perimeter	Exercise	○ Top-Down by FSAP team, Bottom-Up by insurance undertakings.
		Institutions included	○ 8 composite insurers (76% of total balance sheet assets). ○ 6 composite insurers (63% of total balance sheets assets) for BU exercise.
		Data and baseline date	○ Regulatory reporting December 31, 2022.
2.	Channels of Risk Propagation	Methodology	○ Investment assets: market value changes after price shocks affecting the solvency position. ○ Insurance liabilities: impact on the value of the best estimate by changing the discount rate of future cash flows. ○ Sensitivity analysis: corporate bond rating migration and sovereign downgrade, effect on available capital and solvency position.
3.	Tail shocks	Size of the shock	○ Instantaneous shock. For example, market shocks on equity and property prices have been front-loaded so that the maximum drawdown during the project horizon of the macrofinancial scenario is realized immediately after the reference date (end 2022). Furthermore, the risk-free rate term structure is adjusted to account for the significant downward reversal of risk-free rates after 2023. The inflation shock extends the path for the CPI and wage inflation to a gradual return to a two-percent inflation after the five-year model period. Furthermore, a 30 percent lapse shock for non-mandatory insurance (term insurance, endowments, unit linked products, and disability) on insurers' in-force life portfolio is assumed. ○ Risk-free interest rates (without volatility adjustment) 447 bps (1y EUR), 455 bps (10y EUR). ○ Sovereign bond spreads 90 bps domestic, 55 bps low spread EA countries, 120 bps high spread EA countries, 70 bps other advanced economies, 120 bps emerging and developing countries. ○ Stock prices -33.6 percent European Union, 33 percent other advanced economies, 32 percent emerging and developing economies. ○ Property prices 25 percent (commercial), 20 percent (residential). ○ Corporate bond spreads between 60 bps (AAA financials) and 355 bps (B and lower financials), and between 50 bps (AAA non-financials) and 325 bps (B and lower non-financials). ○ Mortgage default increase two percent domestic, three percent non-domestic.
4.	Reporting Format for Results	Output presentation	○ Impact on solvency ratios. ○ Contribution of individual shocks to changes of eligible own funds. ○ Impact of reactive management actions (bottom-up only). ○ Dispersion measures of solvency ratios.

Table 9. Belgium: Insurance Sector Stress Testing Matrix (concluded)		
Insurance Sector: Liquidity Analysis		
Top-down by IMF		
5. Institutional Perimeter	Exercise	○ Top-down by FSAP team.
	Institutions included	○ 8 composite insurers, 2 life insurers with significant IRS exposure (84% of total balance sheet assets).
	Data and baseline date	○ Regulatory reporting, December 31, 2022.
6. Channels of Risk Propagation	Methodology	○ Revaluation of derivative position after interest rate shock (top-down). ○ Mass lapse shock and shock to liquid assets.
7. Tail shocks	Sensitivity analysis	○ Parallel shift of the interest rate term structure.
8. Reporting Format for Results	Output presentation	○ Variation margin as percent of cash holdings. ○ Variation margin as percent of cash holdings plus high-quality liquid assets. ○ Stressed liquidity ratios.

Table 10. Belgium: Investment Fund Sector Stress Testing Matrix		
Investment Fund Sector: Liquidity Risk		
Top-down by IMF		
1. Institutional Perimeter	Exercise	○ Top-Down by FSAP team.
	Institutions included	○ Bond and mixed Investment funds.
	Market share	○ Varies by type of fund.
	Data and baseline date	○ Lipper. ○ NBB and FSMA supervisory data. ○ Portfolio reporting date: End of year 2022.
2. Channels of Risk Propagation	Methodology	○ Various levels of redemptions shock compared level of highly liquid assets at fund category level. ○ Redemption shocks calculated based on historical data on redemptions using VaR and Expected Shortfall. ○ Methodologies with multiple thresholds. ○ Historical time series with monthly frequency. ○ Liquidation strategy: vertical vs. horizontal slicing
	Assumptions	○ A first set of redemption shocks will be calibrated based on funds' historical flows. Another set of shocks to the value of funds' asset holdings could be calibrated in line with the adverse scenario, assuming funds' returns can be estimated. Based on funds' liquidation strategies, the price impact of asset sales could be assessed.
	Time horizon	○ Instantaneous shock.
3. Risks and Buffers	Risks	○ Liquidity risk: severe but plausible redemption shock.
	Buffers	○ Level of highly liquid assets.
4. Tail shocks	Scenario analysis	○ Pure redemption shock: severe outflows based on historical distribution.
5. Reporting Format for Results	Output presentation	○ Number of funds with a redemption coverage ratio (ratio of highly liquid assets to redemptions) below one. ○ Liquidity shortfall amount for individual funds after redemptions.

Table 11. Belgium: Stress Test Matrix—Interconnectedness		
System-wide: Interconnectedness Analysis		
Top-down by IMF		
Institutional Perimeter	Exercise	○ Top-Down by FSAP team.
	Institutions included	○ Seven banks subcategorized as SIs (same sample as in solvency stress test, institution specific analysis). (Exercise A) ○ Cross-border contagion: country-pair bilateral exposure across the world. (Exercise B) ○ Aggregate domestic banking sector, insurance sector, and investment funds sector (sector-wide analysis). (Exercise C)
	Data	○ Supervisory data: Bank balance sheet and supervisory statistics (COREP – Large exposures). (Exercise A) ○ BIS consolidated banking statistics. (Exercise B) ○ ECB data warehouse cross-sectoral exposures. (Exercise C)
Channels of Risk Propagation	Methodology	○ Balance-sheet model: Network model by Espinosa-Vega and Solé (2010). (Exercises A and B) ○ Satellite models on yields and share prices projections. (Exercise C)
Tail shocks	Size of the shock	○ Default threshold: banks would default if their capital fall below regulatory minimum. (Exercise A) ○ Pure contagion: financial distress in foreign countries. (Exercise B) ○ Market contagion through devaluation of assets. (Exercise C)