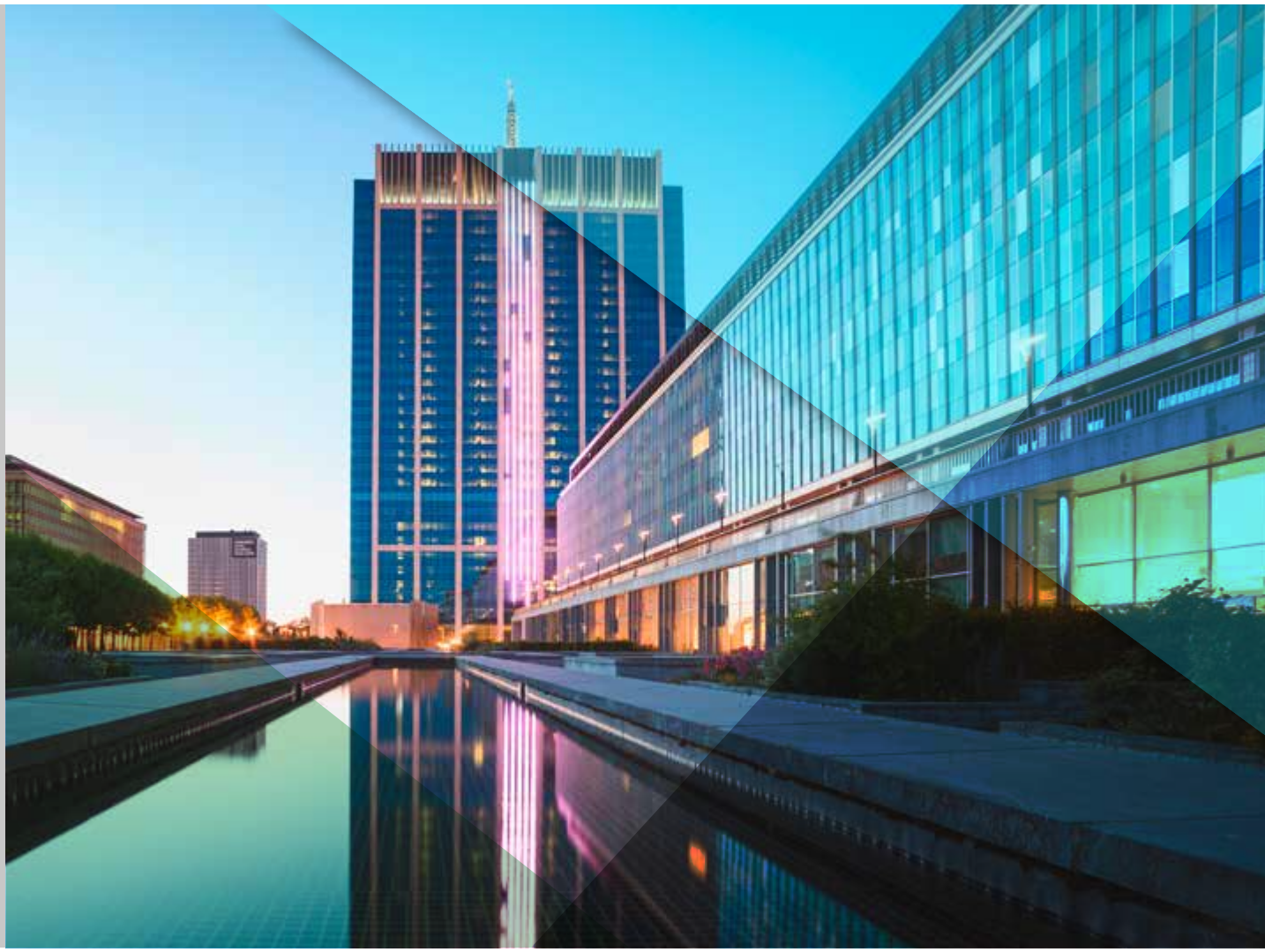
Financial Stability Report 2024



National Bank OF BELGIUM
Eurosystem

Financial Stability Report 2024

National Bank OF BELGIUM
Eurosystem

Contents

Macroprudential Report

Introduction

The Act of 25 April 2014 officially designated the Bank as the macroprudential authority for Belgium. Under this remit, the Bank closely monitors developments in the financial sector and focuses in particular on detecting potential risks that could undermine the stability of the financial system. When such systemic risks arise, the Bank is mandated to adopt the necessary macroprudential measures to prevent them from developing further and to reduce the financial sector's vulnerabilities and exposure to these risks. These measures include not only the use of instruments, in the direct exercise of its authority, but also the publication of recommendations to other authorities empowered to implement specific provisions. The Bank publishes annually a Macroprudential Report, part of its Financial Stability Report (FSR), explaining how it has worked to guarantee the stability of the financial system.

This Macroprudential Report provides an overview of the Bank's macroprudential policy and places it in the current macroeconomic and macrofinancial context. Developments specific to the Belgian financial sector and the credit cycle are examined in detail in the Financial Stability Overview of the FSR. In addition, four themed articles in this report cover recent developments in the residential and commercial real estate markets and the financial sector's exposure to these markets, the fintech sector in Belgium, and the use of derivatives by Belgian financial institutions.

The first chapter of this report examines the resilience shown by the economy and the financial sector over the recent period. The second chapter is devoted to specific developments, including in the residential and commercial property markets, and their impact on macroprudential policy in Belgium. The last chapter sets out the conclusion of this report and includes a number of macroprudential recommendations.

1. Resilience of the economy and the financial sector

1.1 The Belgian economy has proved resilient in the face of crises in recent years

In recent years, the Belgian economy has shown great resilience, and fears of a recession have given way to the greater likelihood of a soft landing in which inflation returns to the level targeted by monetary policy without any major impact on, for example, the bankruptcy or unemployment rate.

In 2022, Russia's invasion of Ukraine exacerbated pre-existing tensions on the energy markets. Rising energy prices were the main driver of the rapid rise in inflation in Europe. The persistence of inflation forced many central banks to tighten their monetary policy. The ECB has gradually raised its key rates by 450 basis points since July 2022, bringing the deposit rate to 4 % in September 2023. Market rates have also risen significantly in the long-term segment of the yield curve, albeit less sharply, contributing to a flattening and even inversion of the curve.

In the meantime, inflation in Belgium fell sharply, from an average of 10.3 % in 2022 to 2.3 % on average in 2023. Core inflation, which does not take into account more volatile energy and food prices, continued to rise in the first half of 2023 but is also down substantially, standing at 3.8 % at the end of March 2024.

While there had been fears that the high level of inflation and the resulting sharp rise in interest rates would lead to a recession in the euro area, economic growth turned out to be more resilient than initially thought. The economy indeed began to slow in the summer of 2022, after rebounding from the pandemic, but this slowdown did not lead to a recession. In fact, a gradual acceleration in economic growth, to an average of 0.5 % in 2023 in the euro area and 1.5 % in Belgium, was observed. According to economic projections, the growth rate should be 0.6 % for the euro area and 1.3 % for Belgium in 2024.

Economic growth was also unaffected by the turbulence generated by problems in certain parts of the US and Swiss banking sectors, which did not spread to banks in the euro area. The Belgian financial sector proved extremely resilient in the face of these events, having regard to its considerable differences with institutions such as Silicon Valley Bank or Credit Suisse (see the Macroprudential Report 2023).

1.2 A sound financial sector

The Belgian financial sector is one of the strongest in Europe, with substantial capital and liquidity reserves. It is therefore capable of absorbing potentially major shocks.

The CET1 ratio of Belgian banks, a key indicator of solvency, stood at 16.7 % on average at the end of 2023, well above the minimum required level, excluding Pillar 2 guidance. As a result, Belgian banks have ample available capital buffers, which totalled €20 billion at the end of 2023.

This sound solvency position was underpinned by the high level of profitability reported by Belgian banks in 2023. The Belgian banking sector posted a net profit of €9.3 billion, equating to a return on equity of 12 %. This good performance was supported in particular by higher interest income and the maintenance of low provisions for credit losses.

Belgian banks also have substantial liquidity buffers which can be mobilised in the event of intense liquidity pressures. The liquidity coverage ratio for Belgian banks, which indicates whether they hold a volume of high-quality liquid assets sufficient to cover "stressed" outflows of funds for a period of 30 days in times of crisis, was more than 150 % on average at the end of 2023, well above the required level of 100 %. Belgian banks thus maintained a comfortable liquidity position, even after the issuance of the one-year State note in September 2023.

Table 1

Key ratios for Belgian banks

(in %, unless otherwise stated)

	2019	2020	2021	2022	2023
Balance sheet total (in € billion)	1 047,6	1 132,0	1 150,9	1 158,7	1 156,3
Solvency (CET1 ratio [1])	15,6	17,2	17,7	17,3	16,7
Profitability (return on equity)	8,7	5,9	10,2	9,9	12,1
Liquidity (liquidity coverage ratio)	140,5	181,6	184,3	157,7	153,3

Source : NBB.
1 Common Equity Tier 1.

Table 2

Key ratios for Belgian insurance companies

(in € billion, unless otherwise stated)

	2019	2020	2021	2022	2023
Balance sheet total	360.3	377.2	378.7	325.8	338.7
Solvency (SCR[1], in %)	202.0	202.0	207.0	209.0	216.0
Profitability (return on equity, in %)	10.3	11.4	11.3	16.0	-[2]
Net life insurance premiums written	17.5	16.6	17.4	16.8	17.8
Net non-life insurance premiums written	14.7	14.7	15.7	16.9	18.1

Source: NBB.

1 Solvency capital requirement.

2 At the time of closing this report, the return on equity for 2023 was not yet known.

For the insurance sector, the solvency capital ratio (SCR) stood at 216 % at the end of 2023, more than twice the required level. In recent years, the Belgian insurance sector posted good earnings, with a return on equity of more than 10 %. In 2023, the premiums collected in both the life and non-life segments continued to increase strongly (+6 % and 7 % respectively compared to 2022). Furthermore, the sector's liquid assets represented on average 40 % of its investment portfolio at the end of 2023, thus ensuring a comfortable margin in the event of an increase in liquidity risk.

2. Points of attention for macroprudential policy

The financial sector is therefore on sound footing and capable of coping with the materialisation of risks which, despite the good performance of the economy in Belgium and abroad, cannot be ruled out. Against this backdrop, the Bank partially reviewed its macroprudential policy in 2023.

2.1 The property market and mortgages

A pronounced but orderly adjustment in the housing market and a possible recovery in 2024

The rise in mortgage rates observed from mid-2022 led to a turnaround in the credit and property cycles. In the early months of 2023, annual growth in lending to Belgian households began to fall. By the end of February 2024, it had dropped to 1.6 %, a level admittedly below the 5.7 % seen at the end of 2022 but well above the average growth rate in the euro area (0.3 % at the end of February 2024).

This continued positive growth in mortgage lending helped prevent an excessive fall in demand that could have caused a disorderly adjustment in the Belgian housing market. Although the volume of new transactions on the secondary market fell in 2023 (–18 % compared with 2022), residential property prices continued to rise – in nominal terms – by 2.7 % on an annual basis in the first three quarters of 2023.

New mortgage lending amounted to €33 billion in 2023, around 25 % lower than the average for the previous five years. In the first quarter of 2024, however, there was a slight uptick in lending, following the reduction in mortgage rates seen at the start of the year. This trend, which could signal renewed dynamism in the residential property market, remains to be confirmed in the months ahead.

Macroprudential policy

Mortgage lending was sustained by automatic wage indexation and the moderate lengthening of maturities for new mortgage loans which began in 2022 – mainly for young borrowers – as these measures helped preserve household borrowing capacity when mortgage rates rose. The Bank welcomed this moderate extension of maturities. In the past, when mortgage rates were low, the Bank encouraged lenders to wait to lengthen maturities until interest rates rose again, which started to occur in mid-2022.

The Bank also maintained its prudential expectations for new mortgages; these were introduced in 2020 to improve the average credit quality of new mortgage loans, in particular by reducing the proportion of such loans with a high loan-to-value ratio, so as to ensure that risks in the stock of loans remain under control. The Bank has found that loan-to-value limits do not curb access to mortgages for creditworthy borrowers, as the leeway left to lenders to grant loans with a higher loan-to-value ratio is not being fully utilised. The lengthening of maturities and the Bank's sufficiently flexible prudential expectations helped maintain the percentage of young homeowners in recently originated mortgages.

In view in particular of good compliance with its prudential expectations, the Bank found in August 2023 that the sectoral systemic risk buffer for Belgian mortgage loan could be reduced. The improvement in the quality of new loans granted since 2020 was such that it had gradually led to a reduction of risk in the loan portfolios. As a result, the default rate held steady at a record low level. Since 2013, the Bank has required the Belgian banking sector to maintain a macroprudential capital buffer for risks on the residential property market, due to its high exposure to this market in the form of mortgage loans. Following its decision in August 2023, the rate of the sectoral systemic risk buffer for Belgian mortgage loans was reduced, effective 1 April 2024, to 6 % of the risk-weighted assets concerned, down from the previous level of 9 %. In practice, the total amount of the buffer has been reduced from around €2 billion to around €1.3 billion. As it has indicated in the past, the Bank stands ready to release this macroprudential buffer in the event, for example, of a substantial worsening of payment difficulties for mortgage borrowers.

The Bank also continues to closely monitor the energy efficiency of real estate exposures in the Belgian financial sector. At the end of 2020, based on financial stability considerations, the Bank published a macroprudential circular detailing its expectations and the requested data with regard to the inclusion of information on the energy efficiency of property exposures in the management of climate-related risks by the financial sector. In its follow-up of these expectations, the Bank noted that the financial sector had made significant progress in this area, for example in terms of the quality of the information collected and data coverage. The themed article entitled "Orderly downturn of the Belgian residential real estate market reduced financial stability risks" takes a closer look at recent developments in the housing market, including the widening price differential between energy-efficient and less energy-efficient properties and the challenges associated with renovation of the housing stock.

2.2 Business loans and the commercial property market

Belgian firms are resilient overall

Belgian firms, too, have demonstrated resilience in recent years against a backdrop of successive and varied crises. They entered 2023 with a very healthy financial position overall, having been able to build up reserves and reduce their debt levels in previous years. As was the case for households, this soundness was reflected in a stable loan default rate, despite greater sensitivity to rising interest rates than households and an increase in operating expenses.

Unsurprisingly, the rise in interest rates weighed on annual growth in business lending, which fell from 5.9 % at the end of 2022 to 3.9 % in February 2024. However, this rate is still well above the average for the euro

area (which was close to 0 % at the start of 2024). Furthermore, the decline in the growth of business loans did not prevent firms from stepping up their investments, although it suggests that the substantial investments made by businesses in 2023 were financed more by cash reserves and to a lesser extent by bank loans than in the past, once again reflecting their sound financial position.

However, the corporate sector is highly heterogeneous, and the materialisation in specific subsegments of certain vulnerabilities that accrued when interest rates were low cannot be ruled out as the now higher rates are transmitted to the real economy. In this regard, the financial sector's exposure to the commercial property market was a focus area for (macro-) prudential authorities in Belgium and elsewhere. The themed article entitled "Trying times for Belgian real estate firms and the Belgian CRE market" covers in detail the latest developments in this market and the commercial real estate (CRE) exposure of the Belgian financial sector. CRE exposure, while smaller than residential real estate exposure, is significant. For banks, this exposure amounted, on a consolidated basis, to between €73 billion and €101 billion at the end of 2023 (depending on the definition used), or between 24 % and 34 % of loans to non-financial companies granted by Belgian banks. Approximately one-fifth of the CRE exposure relates to loans to foreign companies. For insurance companies, CRE exposure was around €25 billion or 10 % of their total assets. Despite the significant drop in transactions observed in 2023, the fundamentals of the Belgian commercial property market remained favourable, meaning the investment strategies of long-term players, such as regulated property companies and insurance companies, did not need to be revisited. That being said, the slowdown in activity in the residential and commercial segments of the real estate market could weigh on the financial health of some companies going forward, even though bank loan default rates across all sectors are not currently showing signs of deterioration. For borrowers facing temporary financial difficulties, banks should define adequate credit strategies, including – where appropriate – potential forbearance measures, having regard to the borrower's specific situation. In addition, the financial sector (specifically insurance companies) should conservatively value commercial real estate held or received as collateral (see the "Conclusion and recommendations" below).

Macroprudential policy

Although the quality of their loan portfolios has remained very good, banks could potentially be exposed to higher-than-expected losses in the future, particularly in their corporate loan portfolios which are not covered by the sectoral capital buffer for mortgage loans. The Bank therefore announced the reactivation of the countercyclical capital buffer at the end of August 2023 in order to increase the resilience of the financial sector, taking into account the fact that banks' provisions for credit losses had fallen back to levels comparable to those seen prior to the pandemic.

As there is less uncertainty regarding the short-term impact of higher interest rates on the economy and given the orderly slowdown in the credit and housing cycles, the Bank considered, in taking this decision, that the risk of acting pro-cyclically – which had previously been significant – had been markedly reduced and was now outweighed by the benefits of increasing the resilience of the banking sector. This enhanced resilience remains necessary, as the fact that short-term uncertainty has substantially diminished does not mean that credit losses cannot increase in the future.

In concrete terms, the Bank's decision led to the creation of an additional buffer of around €1.1 billion as of 1 April 2024, corresponding to a countercyclical buffer rate of 0.5 % (applicable to the risk-weighted assets concerned). The buffer will be raised to approximately €2.3 billion on 1 October 2024, corresponding to a rate of 1 %. As is the case for the buffer for risks on the residential property market, the Bank may, if it deems necessary, release the countercyclical buffer in order to provide the financial sector with additional liquidity to support the Belgian economy.

2.3 Other developments relevant to macroprudential policy

Future trends in the profitability of the financial sector

Various factors could weigh on the – historically high – profitability of the financial sector in the years ahead. The net interest income of banks most likely peaked in the second half of 2023. The high degree of competition in the credit market is squeezing their margins, while new lending volumes remain well below those seen up to mid-2022. At the same time, the financing cost of credit institutions is gradually being adapted to new market conditions. In particular, Belgian savers have transferred large volumes of savings to term accounts which offer higher interest rates. This phenomenon, which was already underway in the second half of 2022, was accelerated by the issuance of the September 2023 State note, while the average savings rate was gradually raised over the course of the year.

However, the financial markets are expecting the first key rate cuts in 2024. This could stimulate demand for credit and flatten the yield curve, which at the end of March 2024 was still inverted, two factors that should, in theory, support the profitability of the banking sector in the future.

Insurance companies, for their part, remain subject to the risk of surrender (or lapse) of insurance policies, as some policyholders may wish to reinvest their capital in assets offering a better return. In addition to putting pressure on their bottom line, the large-scale surrender of life insurance policies could give rise to liquidity risk. Insurers need to have sufficient liquid assets that can be realised to meet surrender demand. At the time of writing, however, the surrender level was not significantly higher than in the past. In addition, the profitability of recent insurance contracts with a high guaranteed interest rate could be affected in the event of a further fall in the return on related investments.

While the good level of profitability observed in the financial sector in 2023 is unlikely to recur in the near future, the sector can be expected to maintain sufficient profitability so as to be able to support the economy.

The overall increase in macroprudential buffers (see above) in a context of favourable profitability makes it possible to reserve a certain amount of capital for financial stability purposes, without running the risk of operating in a pro-cyclical manner.

Climate-related risks – statutory and regulatory framework and prudential expectations

For purposes of financial stability, it is important for financial institutions to take due account of the risks associated with climate change in their risk management processes. Numerous regulatory and microprudential initiatives have been launched in recent years or are currently under consideration.

Since 2023, large credit institutions that issue listed securities have been required to disclose quantitative and qualitative data under Pillar 3 in relation to environmental, social and governance (ESG) risks. In the future, all banks, including those that do not issue listed securities, will be required to make such disclosures.

Under Pillar 2 (bank-specific risk assessment), the ECB and the Bank have formulated prudential expectations for the management of climate-related and environmental risks since 2020. In particular, banks must correctly identify the climate-related and environmental risks to which they are exposed, for example through the businesses to which they lend, and fully integrate these risks into their governance, strategy and risk management. All Belgian credit institutions are expected to meet these expectations by the end of 2025, in accordance with a progressive timetable. Banks that fail to meet these prudential expectations can be fined by the ECB, which is also examining the possibility of introducing, from 2024, a capital surcharge under Pillar 2 in the event of heightened exposure to climate-related and environmental risks.

In addition, the new CRD6 requires credit institutions to prepare prudential plans setting out how they will deal with ESG risks in the short, medium and long term. These prudential plans will also be examined under Pillar 2.

To date, there are no Pillar 1 capital requirements that specifically address climate-related and environmental risks. The new CRR3 requires the European Banking Authority (EBA) to examine the need for structural changes to Pillar 1 capital requirements. In the meantime, the EBA has already issued recommendations to banks and supervisors to ensure that climate-related and environmental risks are optimally taken into account under the current capital requirements.

Insurance companies are also subject to Pillar 2 requirements. The Bank recently verified that the risk parameters used to calculate capital requirements take proper account of all risks to which insurance companies are exposed, including those linked to the effects of climate change. The Bank is moreover contributing to work at EU level to recalibrate the natural disaster risk parameters used in the calculation of capital requirements, so as to incorporate the effects of climate change.

Aside from the expectations relating to consideration by the Belgian financial sector of the energy efficiency of its real estate exposures and in view of the numerous initiatives taken at the regulatory and microprudential levels, it has not been deemed necessary thus far to consider other macroprudential policy measures in Belgium.

That being said, the Bank continues, under its macroprudential remit, to recommend the rapid development of a clear statutory framework governing allocation of the costs of damage caused by natural disasters (see the "Conclusion and recommendations" below).

3. Conclusion and recommendations

3.1 Conclusion

Over the last few years, macroprudential policy decisions have been taken in an uncertain environment, characterised by a succession of varied crises. The latest decisions, adopted against the backdrop of a tightening of monetary policy, have contributed to an orderly slowdown in the credit and residential property cycles, while continuing to encourage the maintenance of sound lending policies, and aim to increase the resilience of the Belgian financial sector to future shocks through a realignment and overall increase in macroprudential capital buffers.

In addition to the measures discussed above, the Bank maintained and, in one case, raised the buffer applicable to domestic systemically important banks. As the systemic nature of Euroclear increased significantly following the imposition of sanctions on Russia, the Bank increased the capital surcharge applicable to this institution. These requirements are substantial: at the end of 2023, they totalled more than €5 billion. Figure 1 provides an overview of the macroprudential policy actions taken by the Bank.

3.2 Recommendations

Although recently diminished in intensity, economic uncertainty persists, be it due to the economy's ongoing adjustment to higher interest rates or to exogenous factors, particularly geopolitical ones. Financial institutions should therefore continue to exercise caution when deciding on dividends and other types of profit distributions, so that they can continue to proactively support the real economy. Banks will have to take this fact into account in their credit policies, having regard to the specific characteristics of each borrower, for example in the commercial property segment, in order to avoid the creation of a negative spiral of forced asset sales. Where necessary, appropriate provisions for credit losses should be recorded.

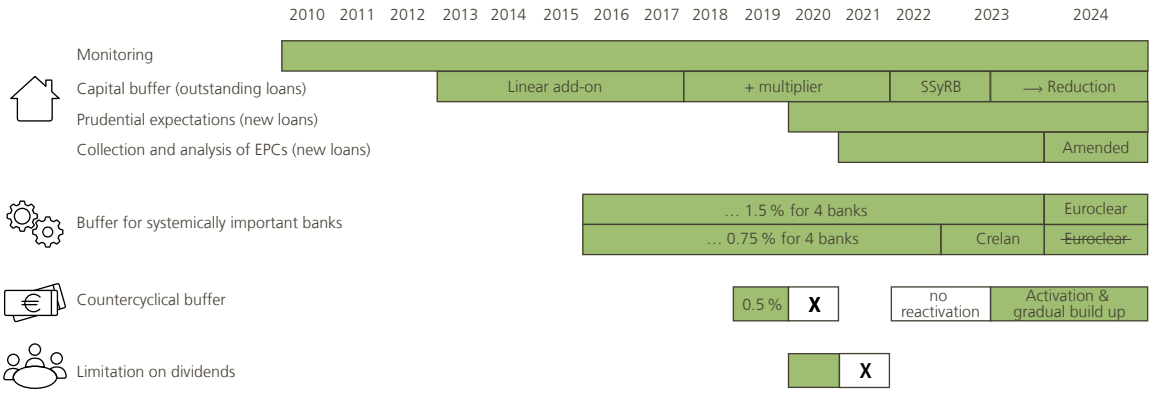
Against the backdrop of a significant fall in transactions on the commercial property market, the Bank also recommends that insurance companies and banks value commercial property prudently and conservatively. For insurance companies, this means recording direct commercial property investments on their balance sheet (at market value) in a prudent manner. For banks, this mainly concerns loans backed by collateral in the form of commercial property.

With regard specifically to the insurance sector, the Bank again recommends the rapid establishment of a stable statutory framework that unambiguously determines how the costs of damage associated with natural disasters should be allocated. If the current situation persists, there is a risk of reinsurers scaling back their activities in Belgium. This could cause insurance companies to stop offering this type of cover, meaning Belgian households would no longer be able to insure themselves against fire and natural disasters or would be able to do so only at a much higher premium.

In addition, as part of its five-year assessment of the Belgian financial sector, the International Monetary Fund (IMF) made a number of recommendations to the authorities aimed at further strengthening the regulatory and supervisory framework, some of which directly concern macroprudential policy. In particular, the IMF believes that the decision-making process for macroprudential policy should be better aligned with the Bank's remit in this area. It therefore calls for a strengthening of the Bank's capacity to activate macroprudential tools quickly and, in particular, for the use of some of these tools to no longer be formally subject to government approval. The IMF also recommends strengthening the macroprudential analysis framework, specifically by deepening cooperation between the Bank and the FSMA.

Figure 1

The Bank's macroprudential policy



Source: NBB.

Financial Stability Overview

Financial stability can be defined as a state in which the financial system can withstand shocks without major disruption to financial intermediation activities and to the effective allocation of savings to productive investment. While the Bank's Annual Report covers other stability-related aspects in detail (e.g. sustainable growth and fiscal policy), this article focuses on the stability of the Belgian financial system. It reviews developments in the banking and insurance sector with analyses covering profitability, solvency and risk exposure. A section on non-bank financial intermediation supplements this analysis of the main intermediaries in the Belgian financial system. Crypto markets – which are not part of the regular financial system – are also discussed, predominantly to remind investors of their highly speculative nature and of the substantial risks of incurring losses due to the (insufficient) way in which these markets are organised.

The financial performance and resilience of financial institutions are affected by developments in financial, credit and real estate markets, and by overall economic conditions. The residential and commercial real estate (CRE) markets are considered in detail in two themed articles: "Orderly downturn of the Belgian residential real estate market reduced financial stability risks" and "Trying times for Belgian real estate firms and the Belgian CRE market". This article serves as an accompanying review of the significant monetary policy tightening that has taken place since mid-2022 and the way in which higher interest rates have been passed through to bank lending conditions and debt financing costs, against the backdrop of the further decline in the aggregate indebtedness of Belgian households and non-financial corporations.

All in all, developments in the operating environment since June last year can be characterised as the continuation of an orderly downturn in the financial, credit and residential real estate cycles and a further reduction of the risks to financial stability. The outlook for financial stability is therefore much better than in the third quarter of 2022, when high inflation and record high energy prices had the potential to create a very adverse macro-financial context – one with a high probability of unexpected losses on risks that remained below-the-radar when interest rates were low, credit and liquidity conditions ample, and asset prices high.

Yet, as discussed in more detail in the related themed article, developments on the CRE market warrant continued surveillance given that the transmission of higher interest rates to the financing costs for real estate firms still has some way to go. In addition, the number of transactions on the CRE market is likely to remain subdued for the foreseeable future.

Against this backdrop, the article identifies two points of concern for financial stability going forward.

The first pertains to the need for financial institutions to ensure that their non-traded CRE-related exposures are (re)valued in line with market developments and in a sufficiently conservative way, especially in cases where the book value of these assets is assumed to reflect their so-called fair, or market, value.

A second point of attention for financial stability is the potential development of a negative spiral, whereby cash-strapped real estate companies are forced to liquidate large volumes of CRE assets in thin market condition, resulting in fire sale prices that become the benchmark for valuing similar assets on the

books of market participants. Banks should closely monitor credit risk related to their CRE loan exposures and have a pro-active approach as soon as borrowers become vulnerable. For those facing financial difficulties due to the current challenging context on the CRE market, they should define adequate credit strategies considering the specific situations of the borrowers, including potential forbearance actions when appropriate. At the same time, they should set aside sufficient capital in order to deal with a potential increase in credit losses on some of these loans as the pass-through of higher interest rates to the borrowers of these loans continues.

During the period under review, Belgian banks and insurance companies benefited from the higher interest rate environment. Their healthy profitability and ample capital and liquidity buffers should ensure that they can continue to fulfil their key functions in the Belgian economy, even in an adverse macro-financial environment. The resilience of the Belgian financial system to shocks has also been fostered by the macroprudential measures the Bank has implemented to mitigate systemic financial stability risks. These policies include the countercyclical capital buffer, supervisory expectations for Belgian mortgage loans, and the sectoral systemic risk buffer for banks that use internal models to calculate the minimum capital requirements for mortgage loans. More details on these macroprudential policies are provided in the accompanying Macroprudential Report, which also includes a number of recommendations.

1. Operating environment

Over the last two years, Belgian banks and insurance companies have been operating in an environment characterised by fast and extensive monetary policy tightening in almost all major currency areas. The increase in the ECB's deposit facility from –0.5 % in June 2022 to 4 % in September 2023 also contributed to a significant inversion of the yield curve in the euro area (Figure 1). The yield curve is set to remain at a level considerably higher than at the end of 2021, even if the reversal of monetary policy tightening begins in the coming months. The gradual transmission of higher interest rates to the financing costs of non-financial corporations is thus likely to continue over the coming quarters, as fixed-rate debt and interest rate hedging contracts originated during the low interest rate period reach maturity and are replaced with new, similar instruments carrying a higher interest rate.

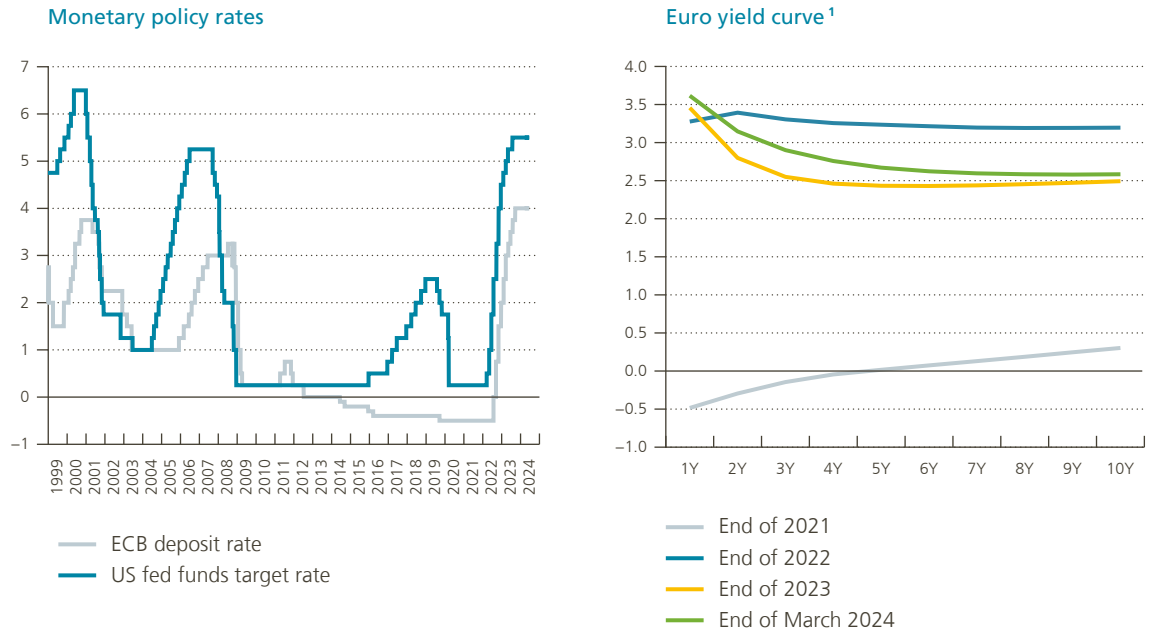
For the Belgian household sector, the pass-through of higher interest rates to the average cost of financing debt has remained quite limited. This is likely to remain the case given that this debt is mainly composed of fixed-rate mortgages for which the rate was fixed for the entire term of the loan during the low-rate period. In addition to generating a large volume of new fixed-rate mortgage loans, that period was also characterised by a very large number of mortgage refinancing operations (see the themed article on residential real estate for more information). Such refinancing operations are relatively cheap in Belgium as refinancing fees are legally capped at three months' worth of interest on outstanding capital. Many Belgian households thus locked in historically low debt financing costs before interest rates started to rise. This explains why the average interest rate on outstanding loans to households is very low in Belgium and has seen only a moderate rise since monetary policy tightening began. The average interest rate on loans by Belgian banks to Belgian households increased from 1.8 % in June 2022 to 2.3 % in February 2024. This increase concerned mainly loans granted from mid-2022 onwards and the relatively small volume of outstanding variable-rate loans.

The average interest rate paid by Belgian non-financial corporations on outstanding loans increased more significantly, rising from 1.6 % in June 2022 to 3.7 % in February 2024. This relatively strong pass-through was due to the fact that a large proportion of such lending is provided in the form of revolving credit agreements or other types of variable-rate credit lines. However, some of this variable-rate debt is hedged with interest rate derivatives originated during the low-rate period, offsetting the impact of higher rates on variable-rate debt for as long as the interest rate hedge contracts last. The pass-through of higher interest rates to the cost of

Figure 1

Monetary policy and the euro yield curve

(in %)



Source: LSEG Refinitiv.

1 Yield curve based on swap rates.

servicing the financial debt held by Belgian firms will therefore only be complete when all fixed-rate debt and all interest rate hedge contracts from the low-rate period reach maturity and are replaced with similar contracts reflecting current market conditions.

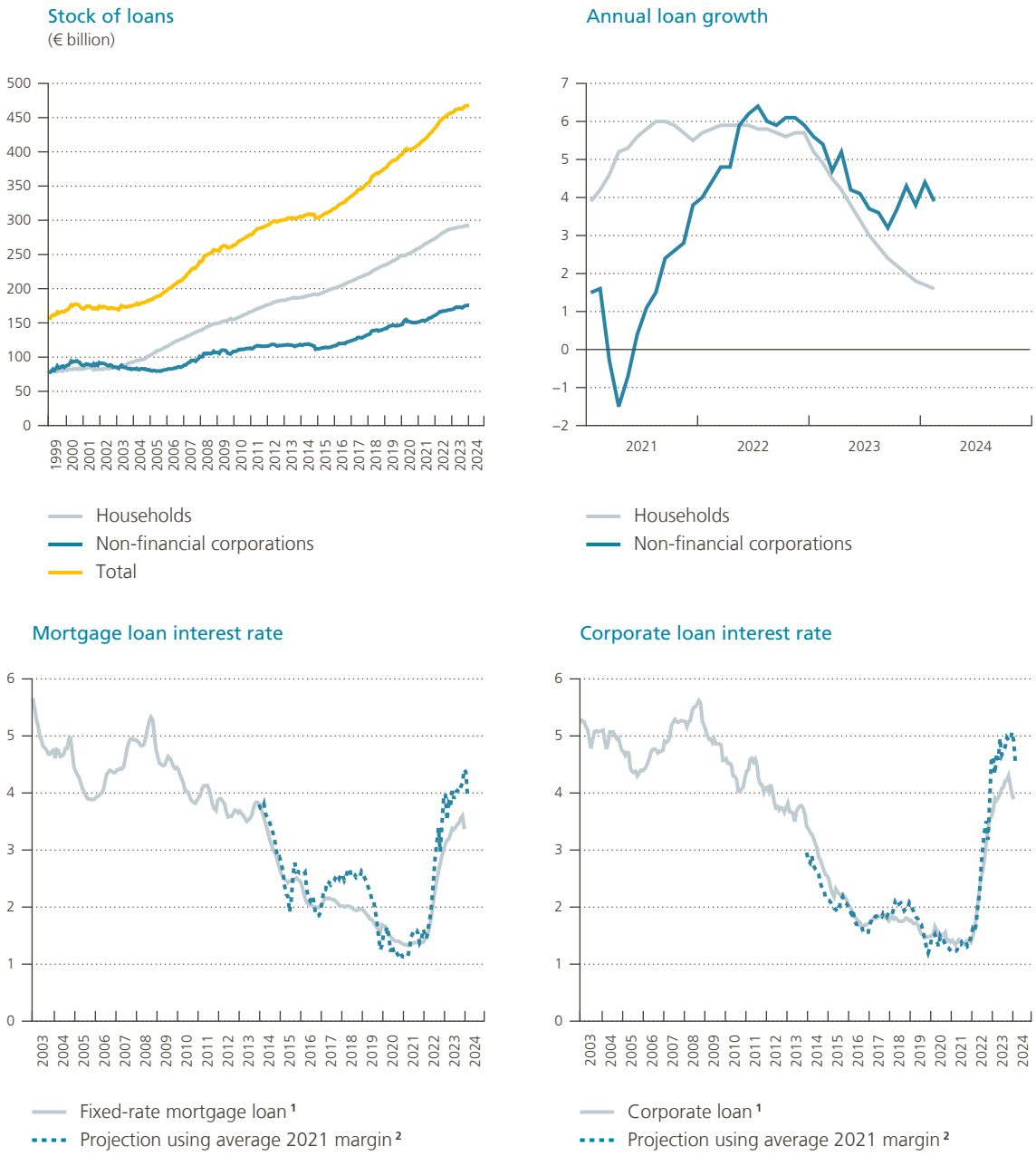
Interest rates on new loans do of course fully reflect the new interest rate environment and are significantly higher than during the low-rate period for both households and firms. Yet this quite abrupt transition to higher borrowing costs has not proved disruptive to the volume of bank lending, as shown by the very orderly and smooth downturn of the credit cycle. Credit growth slowed, but only gradually and following several years of very dynamic bank lending to domestic households and non-financial corporations, due to the low cost of borrowing (Figure 2). A certain slowdown in bank lending growth was to be expected (and was, indeed, intended), given the significant increase in borrowing costs seen from mid-2022. But the slowdown remained contained overall, with a decline in the annual loan growth rate from approximately 6 % in mid-2022 to around 2 % and 4 % at the end of 2023 for loans to households and non-financial corporations, respectively. This suggests that Belgian banks did not really tighten credit conditions during the monetary policy tightening cycle beyond the interest rate increase on new loans. This conclusion is corroborated by the fact that interest rates on new bank loans did not increase as much as could be expected based on developments in swap rates, and on the average margins that Belgian banks applied to commercial loans in 2021. It suggests that competition in the lending market has remained very intense over the past two years and supports the view that the observed slowdown in annual credit growth primarily reflected significantly lower demand for credit, as opposed to tighter bank credit standards.

As discussed in the themed article on developments in the residential real estate market, the slowdown in mortgage lending to households over the last two years came as higher interest rates made property purchases less affordable, all other things being equal. Housing affordability for would-be buyers was nevertheless supported by an increased offer of new mortgage loans with long maturities; this helped to

Figure 2

Bank lending to Belgian households and non-financial corporations

(in %, unless otherwise stated)



Source: NBB, LSEG Refinitiv.

1 As recorded in the MIR interest rate survey (a mortgage loan with a rate fixed for at least 10 years and a corporate loan with a rate fixed for at least five years).

2 Projection based on swap rates with a similar maturity and the average commercial margin applied to this category of loan in 2021.

offset, to a certain extent, the impact of higher interest rates on household borrowing capacity. To reduce the annual repayment burden for new mortgage loans, Belgian mortgage lenders indeed responded to the sharp increase in mortgage loan rates by allowing repayments to be spread over a longer period of time. The share of new mortgages granted to first-time buyers with a maturity of more than 20 years was 72 % in 2023, compared with 59 % in 2021. Nevertheless, the proportion of mortgages for which the repayment burden exceeds 40 % of the first-time borrower's income has gradually risen, from 27 % in 2021 to 33 % in 2023, indicating that longer maturities have not fully offset the impact of higher mortgage rates on the average cost of servicing a new loan.

The conditions for household mortgage lending also continued to be shaped by the prudential expectations formulated by the Bank in order to limit the origination of high-risk loans (see also the Macroprudential Report in this regard). In force since 1 January 2020, these expectations urge lenders to restrict, among other things, the proportion of loans granted with a high loan-to-value ratio, i.e. those for which the amount of the loan exceeds 90 % of the value of the property – if intended for owner-occupation – or 80 % for buy-to-let properties. Tolerance limits allow the loan-to-value threshold to be exceeded in certain cases, and these are wider for loans granted to first-time buyers. However, they are narrower for credit agreements which combine a loan-to-value ratio of more than 90 % with a monthly repayment burden equivalent to more than 50 % of the borrower's income or where the loan represents a debt greater than nine times the borrower's annual income. The effects of this measure have been clear since its introduction : while loans with a loan-to-value ratio of more than 90 % accounted for 33 % of new mortgages originated by Belgian banks in 2019, this share fell to 19 % in 2020 and 14 % in 2021. It remained close to these levels in 2023. This implies that, once again, lenders did not exceed the tolerance limits provided for by the prudential expectations, for both first-time buyers and for other loans for owner-occupied properties. In 2023, only 22 % of new loans granted to first-time buyers had a loan-to-value ratio of more than 90 %, whereas the tolerance limit set by the Bank is 35 %. In the case of loans to non-first-time buyers for owner-occupied properties, 8 % of new mortgages exceeded the 90 % loan-to-value ratio, whereas the tolerance limit for this type of loan is 20 %.

Figure 3 confirms that the slower growth of bank credit and high nominal GDP growth contributed to a further decline in the aggregate debt ratios of Belgian households and non-financial corporations.

After peaking at more than 66 % of GDP at the start of 2021, the debt ratio of Belgian households gradually fell back to 58.6 % of GDP in the last quarter of 2023 – the lowest level since the end of 2016. Belgium's debt ratio is thus following the trend observed in the euro area as a whole, where the debt-to-GDP ratio currently stands at around 54 %. From a historical standpoint however, Belgian household debt remains high, having increased significantly over the last two decades, with mortgage loans as the main driver. Belgian household debt also remains higher than the euro area average, while previously having been significantly lower. Nonetheless, it should not be forgotten that Belgian households hold large amounts of financial assets and that the majority of mortgage loans have a fixed interest rate, insulating debt service costs from shifts in market interest rates. Moreover, the debt-service burden of fixed-rate debts contracted before the resurgence of inflation in 2022 has also been alleviated by the sharp rise in nominal personal income as a result of, among other things, automatic wage indexation.

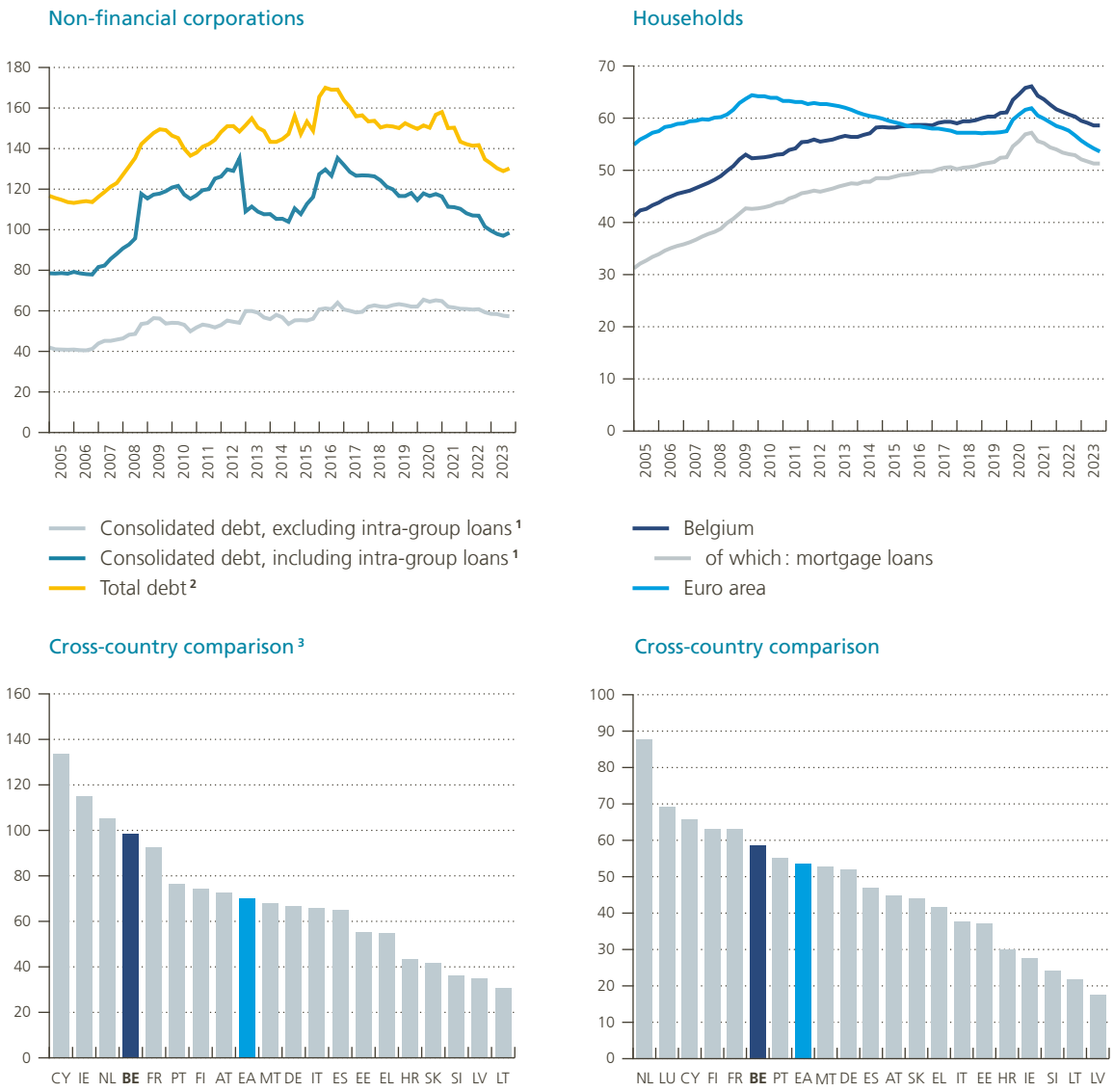
At the margin, the very successful macroprudential supervisory expectations (concerning the flow of new loans since 2020) and the low interest rate environment followed by a period of high inflation (with respect to the large stock of mortgages with a very low long-term fixed rate) have led to a tangible improvement in the risk profile of the Belgian mortgage loan stock. However, vulnerabilities still remain given the very sharp run-up in household debt in recent decades.

The debt ratio of Belgian non-financial corporations also dropped to levels not seen for many years. The most useful metric looks at consolidated debt excluding intragroup loans and currently stands at 57.3 % of GDP. The other measures featured in Figure 3 show higher debt levels (due to the inclusion of intra-sector and intra-group loans), but also a much more pronounced decline, to levels not seen in almost twenty years.

Figure 3

Debt of Belgian households and non-financial corporations

(% of GDP)



Sources : ECB, NBB.

1 Loans granted by the non-banking foreign sector and by captive financial institutions.

2 Including loans provided by resident non-financial corporations to other resident non-financial corporations.

3 Luxembourg is excluded from the chart due to the high volatility of its quarterly debt ratio series.

This shift in Belgian firms' debt ratios fits with a more general improvement in their financial position in recent years (see the Annual Report 2023 for more on this topic). Generally speaking, firms came out of the Covid-19 crisis in better financial health overall and consolidated this position in 2022 as a result of higher profitability. Corporate profit margins have increased significantly since 2014 due, in particular, to a structure of economic activity oriented towards more profitable sectors, lower consumption of fixed capital, and labour productivity trending above wage costs. In addition, against the backdrop of particularly accommodative

monetary policy up to 2022, business profitability was boosted by the low cost of bank loans for investments and working capital. These rising profits enabled firms to strengthen their equity and cash reserves. As a result, the median debt-to-equity ratio for the entire population of non-financial corporations was only 55 % in 2022, compared with 65 % ten years earlier, while their liquidity buffers corresponded in most cases to at least 130 % of their debts with a maturity of one year or less. Combined with the fall in financing costs, this growing profitability rendered corporate debt burdens more sustainable. In 2022, the revenue of firms, again in median terms, was eight times their financing costs.

The good financial health of the corporate sector also explains why the increase in business bankruptcies remained moderate, despite the expectation of a rise after the removal of the support measures and various moratoria on bank, tax and social security debts put in place during the Covid-19 crisis. At the end of 2023, the number of bankruptcies was still lower than at the end of 2019, i.e. prior to the start of the pandemic.

As the pass-through of tighter financial conditions to the real economy is a gradual and still ongoing process, creditors of Belgian non-financial corporations should remain vigilant to potential pockets of risk in corporate loan portfolios – particularly with respect to firms active in the real estate sector. As discussed in the themed article "Trying times for Belgian real estate companies and the Belgian CRE market", the operating environment for Belgian real estate firms and CRE market participants is likely to remain challenging in the foreseeable future.

Against that backdrop, in the third quarter of 2023, the Bank decided to re-activate the countercyclical capital buffer (CCyB) based on an analysis that weighed the costs of procyclicality against the benefits of the heightened resilience of the Belgian banking system to potential losses (see the Macroprudential Report for more information). This re-activation of the CCyB did not lead to a procyclical tightening of credit conditions by banks, an aspect to which the Bank was very attentive in the quarters preceding the decision to re-activate the CCyB. In 2022 and the first half of 2023, amidst high uncertainty caused by a potential energy crisis, shifting credit and real estate cycles, and turbulence in the US and Swiss banking sectors, the Bank decided to maintain the CCyB at 0 %. This was done to ensure that Belgian banks had full flexibility to use the ample capital at their disposal to raise credit provisions in a pro-active way and to support the real economy. By the third quarter of 2023, this uncertainty had dissipated to a significant extent, while the downturn in the credit and residential real estate cycles had proceeded in a very orderly way. At the same time, Belgian banks' provisions for (expected) credit losses had dropped back to pre-pandemic levels, providing less assurance against potential losses in corporate loan portfolios. By reactivating the CCyB, the banking sector's resilience to potentially higher-than-expected losses has been raised, as a buffer of around €1.1 billion was effectively created as of 1 April 2024 (CCyB rate of 0.5 %), which will rise to approximately €2.3 billion as of 1 October 2024 (CCyB rate of 1 %).

At the same time, given the generally high level of compliance with supervisory expectations for Belgian mortgage loans, the Bank judged that the sectoral systemic risk buffer for such loans could be lowered from 9 % to 6 % (see the Macroprudential Report for more information). Since their introduction in 2020, these supervisory expectations have contributed to a significant reduction in the share of high-risk mortgage loans and an increase in the resilience of borrowers to potential shocks in the market. This is also reflected in the fact that mortgage defaults stabilised at record-low levels in recent quarters. It was therefore deemed safe to reduce the macroprudential capital buffer held by Belgian banks to cover potential unexpected losses on this loan portfolio. As a result of the recalibration from 9 % to 6 % on 1 April 2024, the total amount of the sectoral systemic risk buffer has declined from around €2 billion to approximately €1.3 billion.

The combined total of these two macroprudential capital buffers rose from €2 billion before April 2024 to €2.5 billion as of 1 April 2024 and will increase to €3.6 billion as of 1 October 2024.

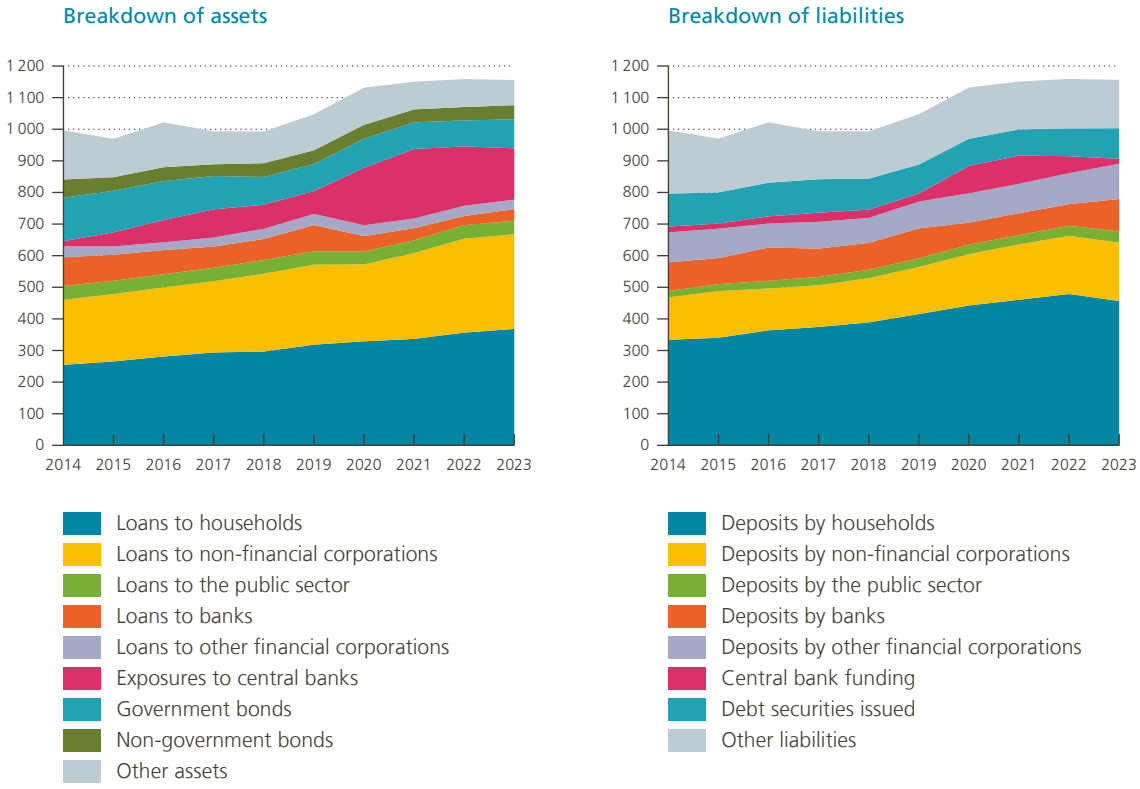
2. Banking sector

Financial intermediation in Belgium is dominated by banks and mainly takes the form of a transformation of deposits into loans. As illustrated in Figure 4, deposit and loan transactions with households and non-financial corporations therefore traditionally account for a major share of the Belgian banking sector's total balance sheet (which amounted to €1 156 billion at the end of 2023). Other balance sheet items tend to be more volatile and can also be influenced by the monetary policy stance, for which the banking sector is a key transmission channel. During the period of low inflation, the ECB injected large amounts of liquidity into the system through so-called targeted lending operations (TLTROs) – offering banks long-term funding at attractive conditions to stimulate bank lending to the real economy – and through its purchases of debt instruments. On the liabilities side of the Eurosystem's balance sheet, the counterpart to these additional loans to banks and growing bond portfolios is the reserves held by commercial banks with central banks (i.e. commercial bank deposits at Eurosystem central banks), the amount of which is thus determined by the conduct of ECB monetary policy. While the bulk of TLTROs has reached maturity, bond purchases by the central bank have a longer-lasting impact on liquidity in the euro area banking sector, given that the bonds purchased have a remaining term to maturity of several years.

Figure 4

Balance sheet structure of the Belgian banking sector[1]

(consolidated end-of-period data, in € billion)



Source: NBB.

1 Infrastructure banks are excluded because of their very specific business model.

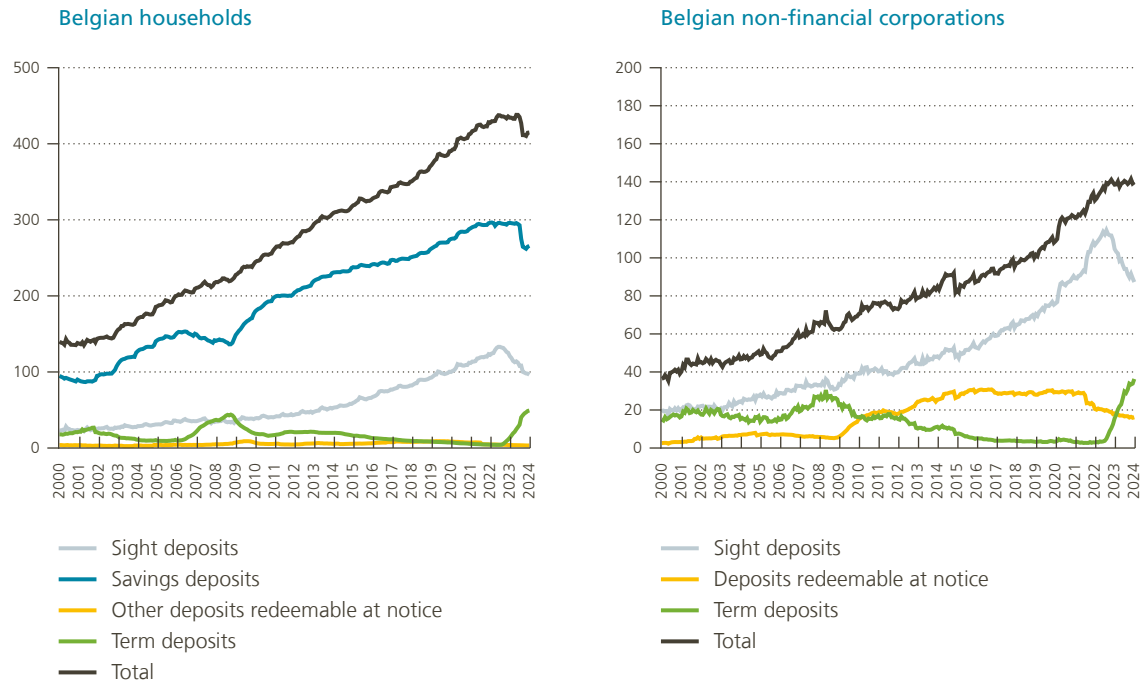
Through these TLTROs, Belgian banks borrowed large sums from the central bank at attractive terms and for long periods in 2020 (Figure B19 in the annex). The repayment of TLTRO funding in 2023 therefore had a significant impact on the balance sheet composition of the Belgian banking sector, as it reduced both central bank reserves (on the assets side) and central bank funding (on the liabilities side). The decline in central bank funding for Belgian banks further to the repayment of TLTRO loans over the course of 2023 was compensated, however, by an increase in funding from other financial institutions and banks. The deposit funding provided by these institutions to Belgian banks is higher than their asset-side exposure to them, which implies that the Belgian banking sector is a net borrower from other financial institutions and banks. The cost of this funding is based on the interbank interest rate and is therefore very similar to the ECB interest rate.

Another notable change on the liabilities side of the Belgian banking sector's balance sheet was the sharp decline in household deposits, largely driven by the issuance of a one-year State note targeted at retail savers in the third quarter of 2023. By issuing a risk-free investment product with a short maturity, similar to a regulated savings account, the Belgian finance minister and the Federal Debt Agency had three objectives: to stimulate competition for savings and thus push up bank deposit rates; to send a positive signal to the financial markets about Belgians' ability to save; and, finally, to offer households a safe and attractive short-term investment option. The State note indeed offered an attractive yield, at a time when the transmission of the rise in interest rates on the capital markets to the rates offered on savings deposits by Belgian banks remained particularly slow. The gross coupon of 3.30 %, combined with a reduction in the withholding tax applicable to the bond, translated into a yield of 2.81 % after tax for retail investors. The response from households to the new State note was enormous – with more than 500 000 savers subscribing for a total amount of €21.9 billion. This State note will mature on 4 September 2024.

Figure 5

Bank deposits of Belgian households and Belgian non-financial corporations

(non-consolidated end-of-period data, in € billion)



Source: NBB.

As households mainly drew from their bank accounts to subscribe to the one-year State note, its issuance resulted in a considerable outflow of funds for banks in the third quarter of 2023. Around 6 % of the outstanding amount of household deposits flowed out of the banking system during that quarter, the largest ever outflow since the start of the compilation of banking statistics (Figure 5). Banks were able to manage this outflow, which could be absorbed by their liquidity buffers, but the loss of such an amount of stable retail deposits nevertheless constituted a material development for their funding base, interest margin and profitability.

Alongside this outflow, the composition of Belgian household deposits at Belgian banks also changed, with a re-allocation of funds from sight and savings deposits to term deposits. Term deposits rose from less than €5 billion in June 2022 to almost €50 billion at the end of 2023. The outstanding volume of regulated savings accounts declined by €28 billion in 2023. This reflected mostly the issuance of the State note in the third quarter, as households used saving accounts as the predominant means of financing their purchases of the note. But it was also the result of a shift from saving deposits to term deposits, triggered by the increased interest rate differential between term deposit rates and savings deposits rates and the very interesting conditions that some banks temporarily offered on their term deposits in order to avoid an outflow of funds to the State note.

Notwithstanding these outflows, regulated saving accounts remain by far the most important retail deposit category for Belgian banks, with an outstanding amount of €265 billion in December 2023 (representing two-thirds of household deposits). As such, they continue to provide a large and stable amount of funding, which Belgian banks mobilise to provide credit with fixed interest rates to Belgian households and businesses. The classic model of financial intermediation assumes, after all, that short-term stable deposits can be used, in part, to finance long-term fixed-rate loans, provided the risks associated with this maturity transformation are carefully managed. It was precisely this significant volume of stable funding in combination with the careful management of interest rate risk that enabled banks to provide Belgian households with the large numbers of fixed-rate mortgage loans that protected them against the significant increase in the financing costs of mortgage debt in 2022 and 2023, as previously mentioned. When requested to provide substantiated opinions on three legislative proposals to tie the minimum interest rate on savings accounts to the ECB's deposit facility rate or the 10-year OLO rate, the Bank therefore not only warned of the potential financial stability risks of doing so but also pointed to the potentially undesirable side effects on the volume, pricing and nature of lending by Belgian banks to Belgian households and businesses. This included the risk that banks could find it more difficult to grant fixed-rate mortgages (see the Annual Report 2023 for more details on these opinions).

2.1 Profitability

The transformation of deposits into loans is not only one of the key services provided by Belgian banks to the Belgian economy but also a major source of their income. The return on this transformation – part of which is used to pay for the management and hedging of the associated risks – is called the interest margin, i.e. the positive difference between the average interest rate received on assets and the average interest rate paid on liabilities. This margin was under severe pressure when interest rates were low (and negative for some financial instruments) given that the average interest rate on liabilities (including retail client deposits) reached a floor, while the average interest rate on assets continued to decline. In particular, the commercial margins that banks traditionally enjoy on the large stock of sight and savings deposits slowly eroded, as deposit rates reached a floor of 0 % (and 0.11 % in the case of Belgian regulated savings deposits). In order to maintain net interest income, banks were forced to sharply increase loan volumes during the low-rate period to compensate for the downward pressure on their interest margins. With the rise in policy rates and other market interest rates since mid-2020, the profitability of this core banking business improved substantially in 2022 and 2023. Banks have thus far managed the risks associated with this maturity transformation well. They are therefore well-placed to continue fulfilling their key role in financial intermediation by providing the necessary financing and other forms of support to the real economy, as the latter continues to adapt to the higher interest rate environment.

Table 1

Income statement and profitability and cost efficiency ratios

(consolidated data; in € billion, unless otherwise stated)

	2019	2020[3]	2021	2022	2023
Net interest income	14.6	14.2	14.4	15.3	18.1
Non-interest income	8.5	8.2	7.6	7.9	8.1
Net fee and commission income[1]	5.6	5.6	6.4	6.5	6.7
Net realised and unrealised gains and losses on financial instruments	0.5	0.0	0.6	0.8	0.2
Other non-interest income	2.4	2.6	0.6	0.6	1.2
Operating income	23.1	22.4	22.0	23.2	26.2
Operating expenses	–13.7	–13.8	–13.3	–14.2	–15.3
Gross operating profit	9.4	8.6	8.7	9.1	10.9
Impairments and provisions	–1.3	–3.1	–0.2	–1.1	–0.7
Other components of the income statement[2]	–2.0	–1.2	–0.7	–0.3	–0.8
Net profit or loss	6.1	4.3	7.8	7.6	9.3
Return on equity (in %)	8.7	5.9	10.2	10.0	12.1
Return on assets (in %)	0.6	0.4	0.7	0.6	0.8
Cost/income ratio (in %)	59.5	61.7	60.4	61.0	58.4

Source: NBB.

1 Including commissions paid to independent banking agents.

2 This item includes, among other things, taxes, exceptional profits, negative goodwill recognised on the income statement, and the share of profits or losses on investments in subsidiaries and joint ventures.

3 A reporting adjustment has resulted in a transfer of certain costs between different income statement components in the figures since 2020.

With a bottom line of €9.3 billion, a return on assets of 0.8 % and a return on equity of 12.5 %, the Belgian banking sector (excluding financial market infrastructure banks) posted very good, albeit not excessive, profits in 2023 (Table 1). This level of profitability was sufficient to allow a return on equity in line with market expectations. A credit institution must offer a return in line with market expectations in order to maintain adequate access to the capital markets, allowing it to raise additional capital, if necessary. Such a level of return also ensures that shareholders will support the organic growth of the balance sheet in accordance with credit demand in the wider economy. Insufficient profitability or accrued losses weaken the financial position of banks and, as demonstrated by the cases of Credit Suisse and the US regional banks in March 2023, can ultimately undermine the confidence of depositors and other creditors.

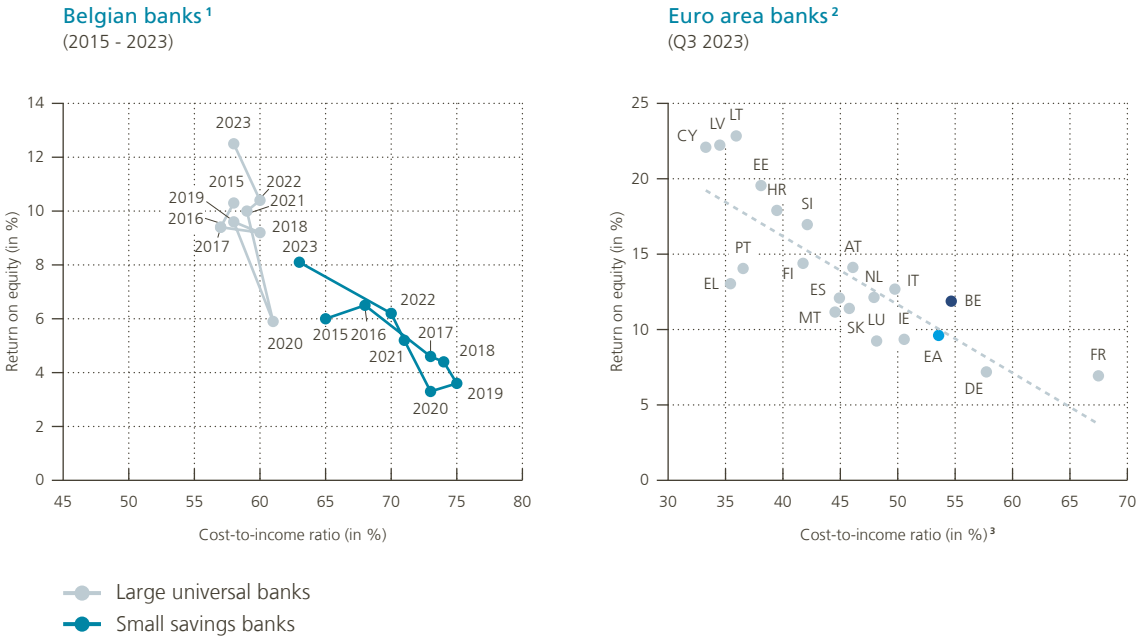
The higher profits recorded by the Belgian banking sector were mainly driven by an increase in net interest income (by €2.8 billion), lifting the proportion of net interest income in Belgian banks' operating income from 65 % in 2022 to 69 % in 2023. But a rise (of €1.1 billion) in costs, including those resulting from high inflation and automatic wage indexation, consumed a large share of the increase in net interest income. The cost-to-income ratio nevertheless showed reasonably strong improvement and dropped to 58.4 % – a level last recorded in 2016.

As shown in the left-hand graph in Figure 6, large universal banks performed significantly better than small savings banks during the low-interest period – measured on the basis of their return-on-equity and cost-to-income ratios. However, this performance gap narrowed in 2022, and even more so in 2023, as savings banks significantly improved their profitability and cost-efficiency ratios. A structural difference in the performance of the two segments of the Belgian banking sector seems, nonetheless, to persist: this may be linked to the

Figure 6

Profitability and cost efficiency of Belgian and euro area banks

(consolidated data, in %)



Sources: ECB, NBB.

1 Excluding infrastructure banks and banks specialising in private banking.

2 Annualised data for the first three quarters of 2023. The scope of the expenses included in this harmonised calculation of the cost-to-income ratio for euro area banks differs slightly from the definition used to calculate the Belgian cost-to-income ratio in the left-hand graph.

advantages larger banks have in exploiting economies of scale and in developing and using cost-saving digital technologies. Still, in 2023, savings banks made significant progress, nearing the return-on-equity and cost-to-income ratios enjoyed by larger banks: this was due to a significant increase in their net interest income, their main source of income by far. These developments signal that the traditional financial intermediation business is returning to more sustainable profitability for these banks, easing the pressures that their business models faced during the low interest rate period.

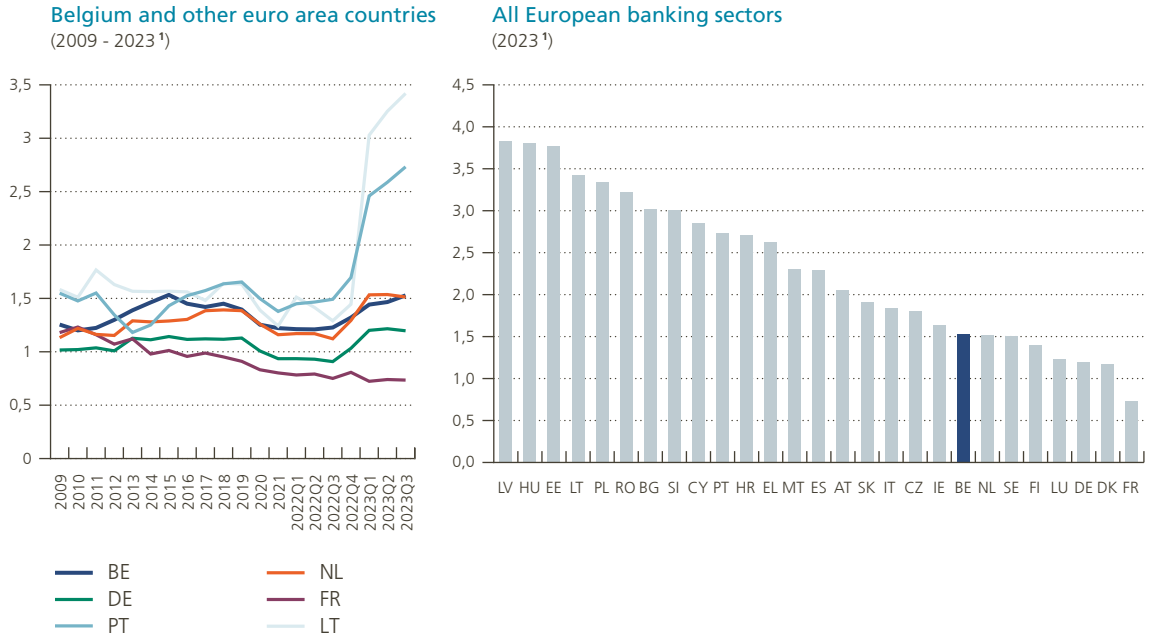
The international comparison of profitability and cost-efficiency ratios in the right-hand graph of Figure 6 shows that, while the improvements in return-on-equity and cost-to-income ratios were common to all national banking sectors in the euro area, the return-on-equity ratio of the Belgian banking sector seems to have been close to the average performance in 2023, while its cost-to-income ratio was relatively weak. Only the German and French banking sectors had worse cost-to-income ratios. These variations between countries seem, to a large extent, to have been driven by differences in net interest income.

Figure 7 therefore provides a comparison of recent trends in the net interest margins of European banking sectors. The left-hand graph shows that net interest income rose strongly in euro area countries, with France being the notable exception. Looking more closely at the countries where variable rather than fixed-rate mortgage loans are more prevalent (see Figure 11 in the themed article on residential real estate), large differences can be seen in the impact of an interest rate rise on banking sector profitability. In Portugal and Lithuania, for example, where mortgage loans are mostly variable rate, the net interest margin grew much faster in recent quarters than in countries such as Belgium, France or Germany, where the majority of mortgage loans are fixed rate.

Figure 7

International comparison of net interest margins

(consolidated data, in %)



Sources: ECB, NBB.

1 The net interest margin was calculated as the ratio between national banking sectors' net interest income and their total assets. Annualised data for the first three quarters of 2023 in the right-hand graph.

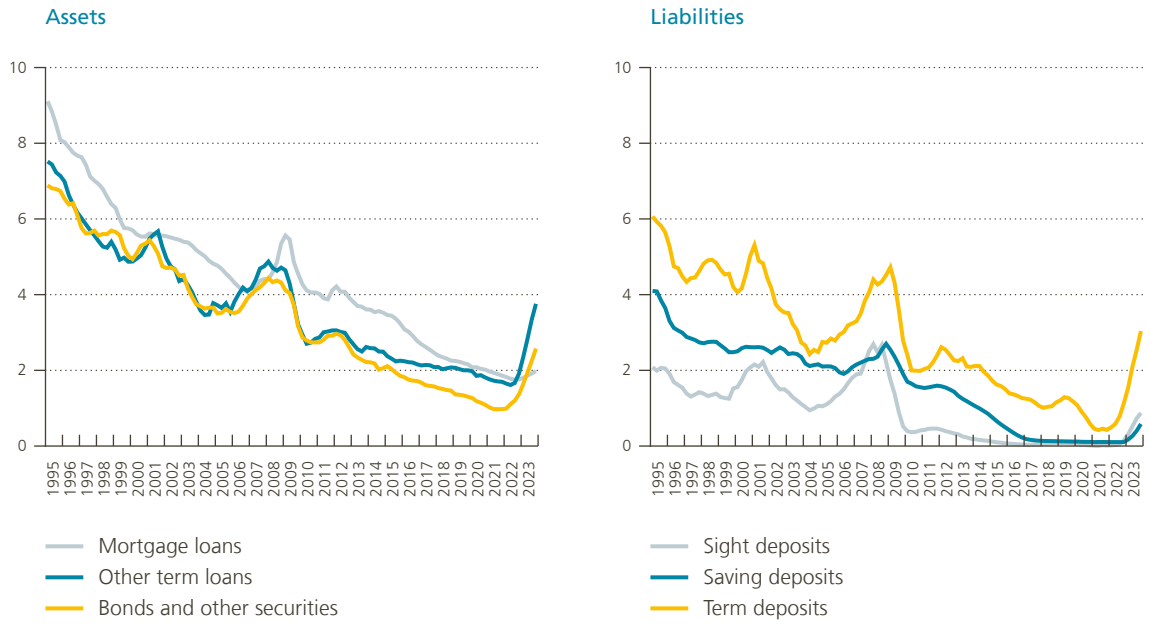
Figure 8 provides more details on the drivers behind the improved net interest income of Belgian banks in 2023. It shows that changes in interest rates have had a differentiated impact on banks' assets and liabilities. On the assets side, the average interest rate of Belgian banks' bond and business loan portfolios rose significantly from mid-2022, while mortgage loan portfolios – dominated by contracts with fixed interest rates for the entire term of the loan – only saw a limited and very gradual pass-through of the higher interest rate environment to the average interest rate earned by banks. On the liabilities side, a similar dichotomy can be observed with respect to the average interest rate paid by banks on the outstanding amount of term deposits versus the slow pass-through of higher market rates to the sight and savings deposits held by households and corporate customers. The latter situation was also due to banks' attempts to restore commercial margins on their stock of sight and savings deposits – remunerating themselves for the liquidity services they provide to clients and for the cost of collecting deposits (e.g. via ATMs or branch networks), which eroded during the long period of low interest rates. The interest rate on these deposits should have turned negative during the low interest rate period to maintain these margins. Nevertheless, although the issuance of the State note shook up the savings market to some extent, the average interest rate on regulated savings deposits remained relatively low – at 0.65 % in December 2023 and 0.87 % in February 2024 – falling short of what could be expected based on the pass-through of higher market rates to bank interest rates observed in the past. Such pass-through would have resulted in an average interest rate on savings accounts of around 1.1 % in December 2023.

To manage their interest rate risk, banks are obliged to maintain an appropriate balance between the interest rate sensitivity of their assets and that of their liabilities, and to use hedging instruments, where necessary, to offset imbalances. In doing so, they must take into account the specific repricing characteristics of these assets and liabilities. Loan and bond portfolios, with typically long maturities, reprice only gradually as maturing assets

Figure 8

Average interest rate on certain types of assets and liabilities

(unconsolidated data, in %)



Sources: ECB, NBB.

1 These implied yields are calculated as the ratios between the 12-month cumulative flows of interest actually received and paid and the average volume of corresponding assets or liabilities in the same period. These are assets and liabilities from "customers", including households, non-financial corporations, governments and other financial corporations (excluding financial institutions and central banks).

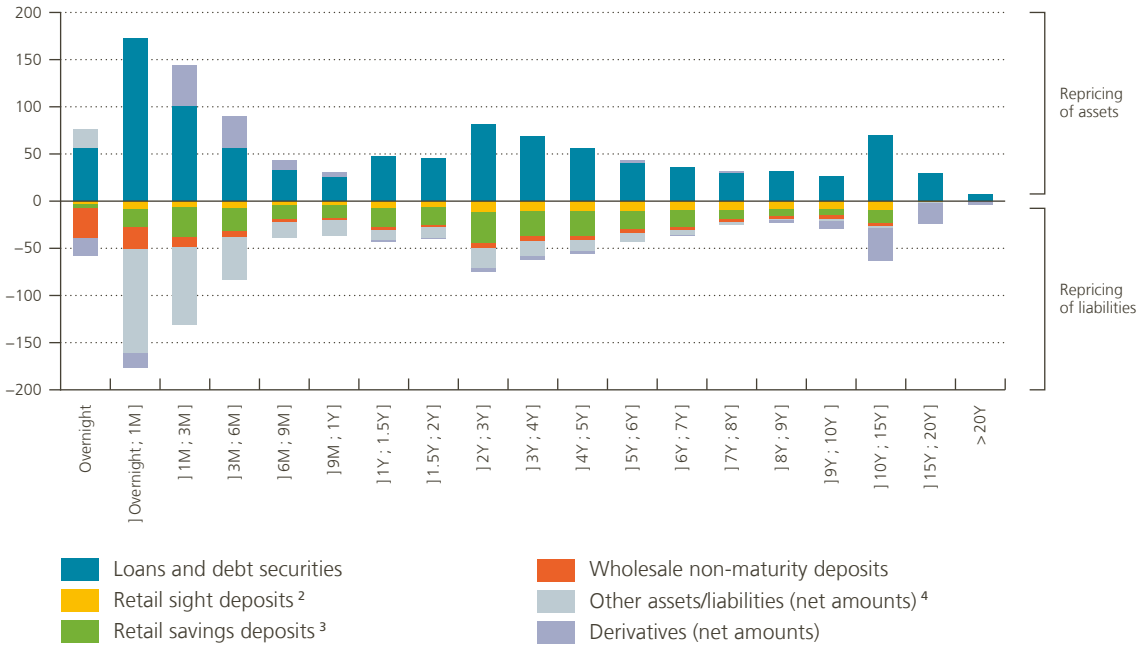
with a low yield are replaced with new, higher yield ones. For sight and savings accounts (so-called non-maturity deposits), an increase in deposit rates immediately applies to the entire stock. The management of the interest rate risk of these non-maturity deposits requires banks to estimate in advance, and to the best of their abilities, the reaction of customers to changes in market interest rates. In the past, little or no interest was paid on a large proportion of sight deposits, while interest rates on savings accounts generally followed market rates gradually and with a certain delay, regardless of whether they were rising or falling. Banks take into account these historical trends in the stability and remuneration of deposits. On this basis, they model, for example, how interest rates on regulated savings accounts gradually reflect a permanent 1 % rise/fall in the yield curve, over time. These characteristics, and the interest rate risk modelling of sight and savings deposits, also determine the financing possibilities for fixed-rate assets without an excessive (and, therefore, risky) reliance on interest rate derivatives. Today, about three quarters of Belgian mortgages have a fixed interest rate for the entire term of the loan.

To manage interest rate risk well, it is thus crucial for banks to maintain a structural balance between the sensitivity of assets and of liabilities to interest rate changes. Figure 9 illustrates how Belgian banks manage this interest rate risk in the banking book, showing the notional amount of assets, liabilities and derivatives according to their remaining time to repricing. Specifically, positions with a fixed interest rate are placed in the repricing bucket when the position comes to maturity. A mortgage loan with regular amortisation of capital is thus split up across the different repricing buckets. Positions with variable interest are placed in the repricing bucket according to the schedule for the next interest rate adjustment. For a mortgage loan that will be repriced within five years, the notional amount of the capital that remains to be repaid at that time will be placed in the repricing class]4y, 5y]. For savings deposits, the distribution across the maturity ladder is based on estimates of the extent to which a permanent interest rate shock would translate into interest rate adjustments over time.

Figure 9

Maturity schedule for notional repricing cash flows of assets and liabilities in the banking book[1]

(consolidated data for the six largest banks, after considering modelling assumptions, September 2023, in € billion)



Source: NBB.

1 The notional repricing cash flows depicted in this chart are the repayments of principal, repricing of principal and interest payments arising from material interest-rate-sensitive assets and liabilities, assuming a run-off balance sheet and according to the interest rate environment prevailing in September 2023. Modelling assumptions include those on the characteristics of items without a specified maturity or repricing (such as non-maturity deposits), on prepayments of fixed-rate loans, on early withdrawals of fixed term deposits, etc.

2 Retail sight deposits refer to retail transactional non-maturity deposits.

3 Retail savings deposits refer to retail non-transactional non-maturity deposits.

4 Including, among other things, outstanding debt securities and term deposits.

Figure 9 confirms that banks manage their interest rate risk position by attempting to minimise the net gap between the asset and liability positions in each repricing bucket, in order to reduce their net exposure to interest rate changes in each bucket. In this context, interest rate derivatives are frequently used to reduce these gaps and hedge against interest rate risk. Banks manage these interest derivatives dynamically, using payer and receiver swaps, particularly in the longer-term buckets, to hedge against the interest rate risk arising from long-term fixed-rate assets, notably mortgages. Overall, the Belgian banking sector has a net payer swap position.

Interest rate derivatives contributed to the growth that banks recorded in their net interest income in 2023. During the low interest rate environment, Belgian banks mainly took out payer swaps. In this type of swap, banks pay long-term fixed interest rates to derivatives counterparties and receive a floating short-term rate in return. For a number of banks, and for savings banks in particular, this hedging position contributed positively to their net interest income in 2023. As such, it offset the downward pressure on their margins resulting from the narrowing gap between the deposit rates and the very slow-paced rise in average rates on mortgage loan portfolios.

Figure 9 also illustrates how banks use asset and liability management (ALM) to model the speed with which non-maturity (sight and savings) deposits reprice in the event of a permanent shock to interest rate levels. This is done via a modelling approach that allocates these deposits to different maturity buckets based on their average estimated time to repricing. The ALM modelling carried out by Belgian banks with regard to savings deposits is

consistent with a 38 % pass-through rate – an average for the sector – of a permanent interest rate shock during the first year following the shock, with an additional pass-through rate of 29 % in the next two years. This means that a permanent 1 % interest rate increase will gradually, in year one, lead to an increase of 0.38 percentage points in the average deposit rate on the outstanding stock, followed by an additional 0.29 percentage points in years two and three (combined). Such interest rate risk management for non-maturity deposits clearly involves considerable modelling risk, particularly if the models are calibrated on the basis of customer behaviour in a period of declining and low interest rates. If deposit repricing behaviour turns out to be different than what is modelled due, for example, to clients reacting more quickly than expected to market interest rate rises, banks could face a faster-than-expected rise in their funding costs. This would have an adverse impact on their net interest income in the short term, as their loan and bond portfolios on the assets side would reprice to the higher interest rates at a more gradual pace. Thus far, this risk has not materialised, as deposits have repriced more slowly rather than more quickly than assumed in the interest rate risk management of the banking book.

Given the large increase in net interest income in 2023, banks have sufficient financial leeway to continue to increase gradually the interest paid on savings accounts and thus to consolidate the stability of this important source of funding without compromising their financial health or interest rate risk management. Stable regulated savings accounts are important to ensuring sound financial intermediation and the stability of the Belgian financial system. When market rates rise, the interest rate on savings accounts should reflect these changed market conditions. If not, banks are exposed to the risk that a large portion of this source of stable funding is shifted towards other investments.

Higher funding costs for deposits, lower interest rates for short-term liquid investments (if and when monetary policy rates are cut) and the persistence of an inverse yield curve are likely to lead to a gradual decline in the net interest income earned by Belgian banks – a process that seemingly began in the last quarter of 2023 – however, the starting point for this decline is very high. Moreover, the prospect of lower monetary policy rates could also lead to a partial recovery in lending growth, which would help to compensate for the decline in interest margins from their historically high levels. Barring large, unexpected shocks to their income or expenses and/or a significant increase in credit losses, the profitability of banks is therefore expected to remain at an adequate level in the coming quarters, providing sufficient resources to support clients and increase credit risk provisions on vulnerable loans (in particular, in certain vulnerable subsegments, such as commercial real estate). Should there be a significant increase in credit losses, profitability could suffer because banks do not seem to have anticipated a major deterioration in the quality of their assets, as suggested by very low annual loan loss ratios of only 2, 10 and 7 basis points respectively, in the last three years (Figure B16 in the annex). To some extent, this also resulted from the reversal of provisions that were introduced at the start of the pandemic in 2020, when the loan loss ratio amounted to 35 basis points. But the levels recorded in the last three years are very low from a historical perspective, especially for three years in succession.

2.2 Asset quality

So far, the asset quality of the loan portfolios held by the Belgian banking sector has remained strong, even if a very slight deterioration could be observed over the past year in some segments.

Starting with the backward-looking indicator, the overall non-performing loan (NPL) ratio was still very low by historical standards at the end of 2023 (1.6 %), though up slightly from the level (1.4 %) seen in the third quarter of 2022 (upper left-hand graph in Figure 10). The breakdowns provided in Table B8 and Figure B10 in the annex show slightly different developments across sectors or types of loan, yet no strong increase or decline in the NPL ratio in a particular subsegment. For loans collateralised by CRE, for example, the NPL ratio remained stable at around 2.9 % in 2023, even if a very small increase was observed in the last quarter of the year. The NPL ratio for loans to households continued to be very low and has been declining for several years, with mortgage loans the driver, as the NPL ratio for consumer loans has risen since the beginning of 2023. Yet, consumer loans constitute a relatively small part of Belgian banks' loans to households (Table B8).

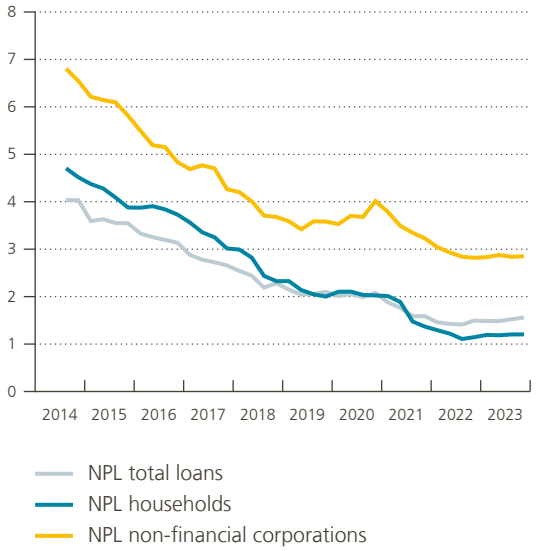
The breakdown of loans to households and non-financial corporations by IFRS impairment stage, which is a more forward-looking indicator, shows a decline in the share of stage 2 loans (upper right-hand graph in Figure 10). When a loan is originated it is in stage 1 and expected credit losses (ECLs) resulting from a possible default within the next twelve months are recognised. If banks observe a significant increase in credit risk, the

Figure 10

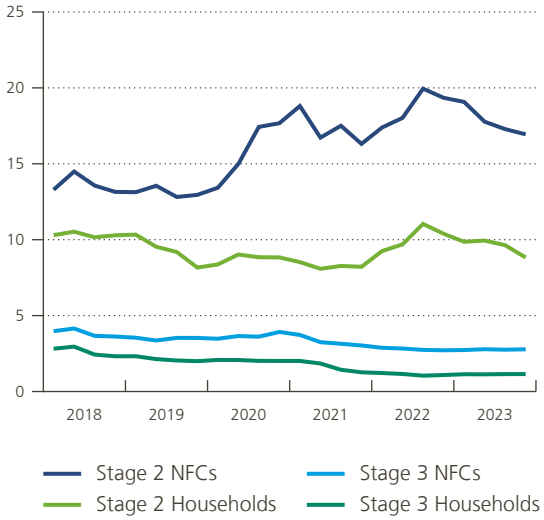
Non-performing loan ratios and impairments by IRFS impairment stage[1]

(consolidated data, in %)

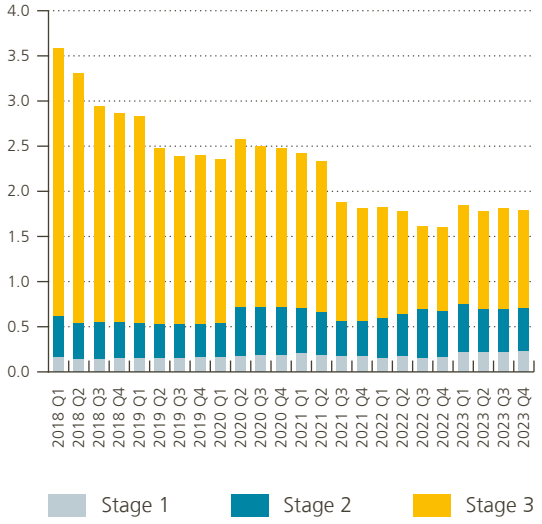
NPL ratio [1]
(in % of total loans)



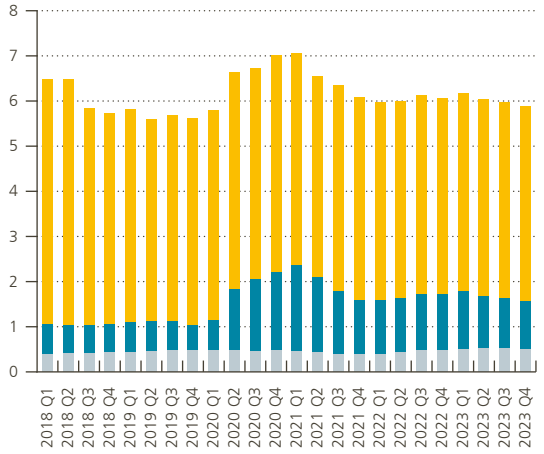
Loans to households and non-financial corporations (NFCs) by IFRS impairment stage
(as % of total loans)



Credit risk provisions for loans to households, by impairment stage
(consolidated basis, in € billion)



Credit risk provisions for loans to non-financial corporations, by impairment stage
(consolidated basis, in € billion)



Source: NBB.

1 Non-performing loans are loans that may not be repaid or that are already in arrears.

loan should be classified in stage 2, with provisions based on lifetime ECLs. If the credit risk increases to the point where the loan is considered as credit-impaired, the loan will be classified in stage 3 and lifetime ECLs recognised as in stage 2. The share of household loans in stage 2 dropped significantly from 10.4 % at the end of 2022 to 8.8 % at the end of 2023. This share is more or less comparable with pre-pandemic levels. There was also a considerable decline in stage 2 loans to non-financial corporations, but compared to household loans, the proportion stayed well above pre-pandemic levels : it decreased from 19.3 % at the end of 2022 to 16.9 % at the end of 2023 (compared to 13.4 % between the first quarter of 2018 and the first quarter of 2020). For both households and non-financial corporations, the stock of credit risk provisions – shown in the lower graphs of Figure 10 – were back to pre-pandemic levels (NFCs) or well below it (households).

Over the course of 2023, the share of loans with forbearance measures declined again for all loan segments (Figure B12 and B13 in the annex). Forbearance for NFCs decreased sharply from 2.8 % at the end of 2022 to 2.1 % at the end of 2023, but this fall was more pronounced for loans to SMEs (from 2.7 % to 1.8 %) than for loans to large corporations (from 3.0 % to 2.3 %). Forbearance ratios for household loans dropped from 1.2 % at the end of 2022 to 1.0 % at the end of 2023. This could be fully attributed to the mortgage loan segment, where the forbearance ratio decreased from 1.1 to 1.0 % at the end of 2023, while the ratio for consumer loans increased through 2023 from 1.3 % to 1.5 %.

As the pass-through of tighter financial conditions to the real economy is a gradual and still ongoing process, banks should remain vigilant concerning potential pockets of risk in their corporate loan portfolios, especially with respect to firms active in the real estate sector. As discussed in the themed article "Trying times for Belgian real estate companies and the Belgian CRE market", the operating environment for Belgian real estate firms and CRE market participants is likely to remain challenging in the foreseeable future.

The CRE exposure of Belgian banks mainly takes the form of business loans. According to FINREP prudential reporting, this exposure (at the consolidated level) ranges from 24 % to 34 % of total loans to non-financial corporations, depending on the definition of CRE used : €73 billion in loans to firms active in the construction and real estate sectors, €90 billion in loans collateralised by CRE and more than €100 billion in CRE loans according to the ESRB definition. These consolidated-level amounts include about 20 % of non-domestic CRE loans granted via foreign subsidiaries and branches, or cross-border lending.

The themed article on commercial real estate provides further details on the characteristics of the CRE loans to Belgian corporations, and on factors that could mitigate or amplify the risk of credit losses in the event of a major increase in credit defaults or loan restructurings in this portfolio. An important mitigating factor for banks' credit risk is the fact that a relatively high percentage of CRE loans are secured by collateral consisting mainly, but not exclusively, of a CRE mortgage or a mortgage authorisation (a so-called mandate). In normal circumstances, Belgian banks should thus be able to recover a large share of the value of these loans by selling the collateral in the event of default. However, should a commercial real estate crisis arise, with many borrowers simultaneously facing financial difficulties, banks could struggle to recover the amounts backed by CRE collateral, as CRE market conditions would be challenging, impairing the ability to sell a large number of properties at a fair price. In this case, unexpected losses could emerge for the banking sector.

In the current context of a CRE market slowdown, and where debt sustainability could deteriorate for some borrowers, the question of the appropriate valuation by banks of the collateral used to back CRE loans therefore warrants further attention. Banks should make sure that the value of the collateral used in their risk exposure calculations corresponds to its actual value in the event it has to be recovered. This recovery value fluctuates in line with market developments. As explained in the themed article, market developments show lower valuations for Belgian CRE assets as a result of higher interest rates. In current market conditions, banks should thus analyse the value at which CRE collateral is recorded and adjust the value where necessary. This should be done in a sufficiently conservative way, erring on the side of caution given the prevailing uncertainty caused by the sharp increase in interest rates and the dearth of benchmark transactions on the market.

Another point of attention for financial stability is the potential development of a negative spiral, whereby cash-strapped real estate companies are forced to liquidate large volumes of CRE assets in thin market condition, resulting in fire sale prices that become the benchmark for valuing similar assets on the books of market participants. Consequently, in addition to reviewing the value of CRE collateral, banks should closely monitor credit risk related to their CRE loan exposures and have a pro-active approach as soon as borrowers become vulnerable. For those facing financial difficulties due to the current challenging context on the CRE market, banks should define adequate credit strategies considering the specific situations of the borrowers, including potential forbearance actions when appropriate. At the same time, banks should set aside sufficient capital in order to deal with a potential increase in credit losses on some of their real estate loans as the pass-through of higher interest rates to the borrowers of these loans continues.

2.3 Liquidity and solvency

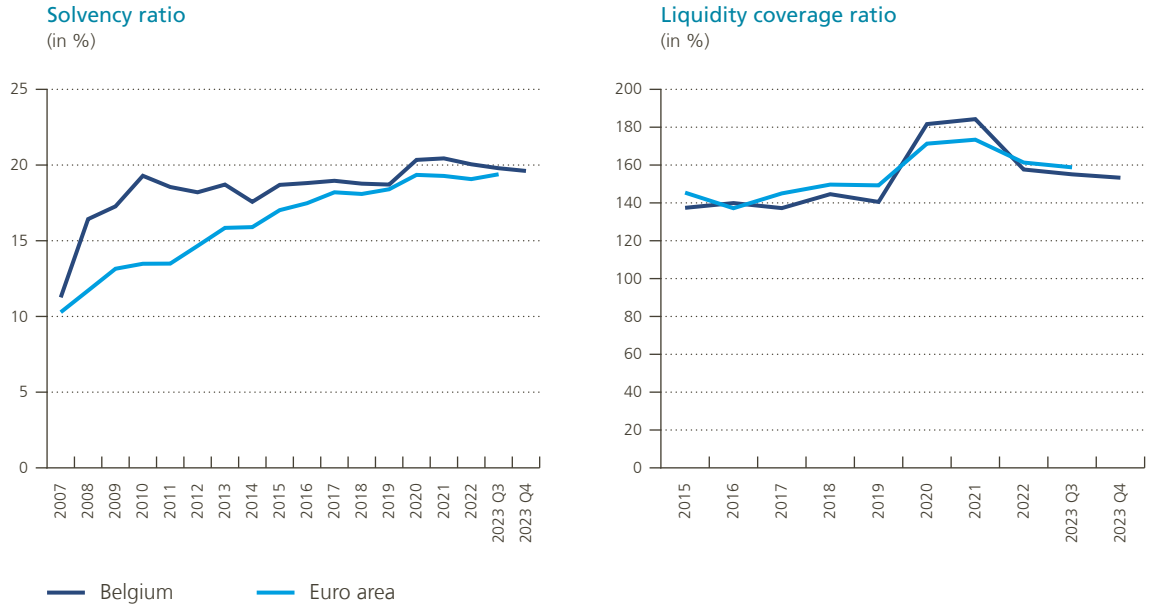
Belgian banks have large capital and liquidity buffers to deal with unexpected shocks, and the composition of these buffers is also of a high quality. As illustrated in Figure 11, they are close to those observed in the rest of the euro area and well above minimum requirements.

The regulatory capital held by Belgian banks is mainly composed of the highest-quality equity, with common equity accounting for 85 % of total regulatory own funds (Table B23 in the annex). The share of additional Tier 1 (AT1) and Tier 2 instruments is limited to 6 % and 9 %, respectively. Regulatory own funds are also significantly higher than regulatory minimum requirements. The free management buffer (incl. Pillar 2 Guidance requirements) amounted to around €20 billion at the end of 2023. This strong capital position ensures that

Figure 11

Solvency and liquidity ratios[1]

(consolidated data))



Sources: ECB, NBB.

1 The solvency ratio expresses the relationship between total capital and total risk-weighted assets. The liquidity coverage ratio expresses the relationship between the stock of high-quality liquid assets and the simulated net cash outflows in a hypothetical 30-day stress scenario.

banks can cope with unexpected losses without jeopardising their main function in the Belgian economy or financial stability. In the current macro-financial and geopolitical context, it seems advisable that banks maintain this room for manoeuvre and, wherever necessary, remain cautious in their decisions regarding dividends and other types of profit distribution. The latter should always be based on a conservative, forward-looking assessment of their capital and provisioning needs, in light of potential macroeconomic developments.

Liquidity buffers also remain well above regulatory minimum requirements and continue to be of high quality. Cash and central bank reserves are the pre-eminent liquid asset and, moreover, an asset that is not sensitive to changes in interest rates affecting its market value. At the end of 2023, they accounted for almost 60 % of Belgian banks' liquid asset buffer (Figure B21 in the annex). This share slightly decreased in 2023 for several reasons. Firstly, banks used existing liquidity buffers for the gradual (early) repayment of targeted longer-term refinancing operations. Secondly, the outflow of deposits due to the issuance of a one-year State note in September 2023 had a negative impact on the liquidity position of Belgian banks. However, the impact of these two events on the liquidity coverage ratio and the net stable funding ratio appears to have been more limited than initially expected, as most banks took measures to strengthen their liquidity positions after this outflow of stable retail deposit funding. The measures included intra-group transactions and the issuance of covered bonds or commercial debt paper.

Public sector assets and covered bonds largely make up the other part of the liquid asset buffer (almost 35 %). The former are mainly composed of government bonds. Over the years, Belgian banks have reduced the size of their government bond holdings to around 8 % of total assets. Most of these government bonds are booked in the balance sheet at amortised cost. But in the liquidity buffer, they are valued at market value, with an appropriate haircut. In the wake of the failure of Silicon Valley Bank in the US in March 2023, market analysts focused on the amount of unrealised capital gains on banks' bond portfolios. In the case of Belgian banks, these are limited because of the relatively low share of bonds in the balance sheet. Given the very high cash position, the probability of these bonds having to be sold with a realised loss is very low, especially given that these securities can be pledged as collateral in repo transactions or to obtain central bank financing. The risks are further mitigated by the fact that banks in Europe are obliged to deduct such unrealised capital gains from regulatory capital (no prudential filter).

The aggregate liquidity coverage ratio fell from 158 % in the fourth quarter of 2022 to 153 % at the end of 2023, while the minimum requirement is 100 %. The net stable funding ratio also remained well above the minimum requirement of 100 % and amounted to 127 % at the end of 2023 (Table B20).

3. Insurance sector

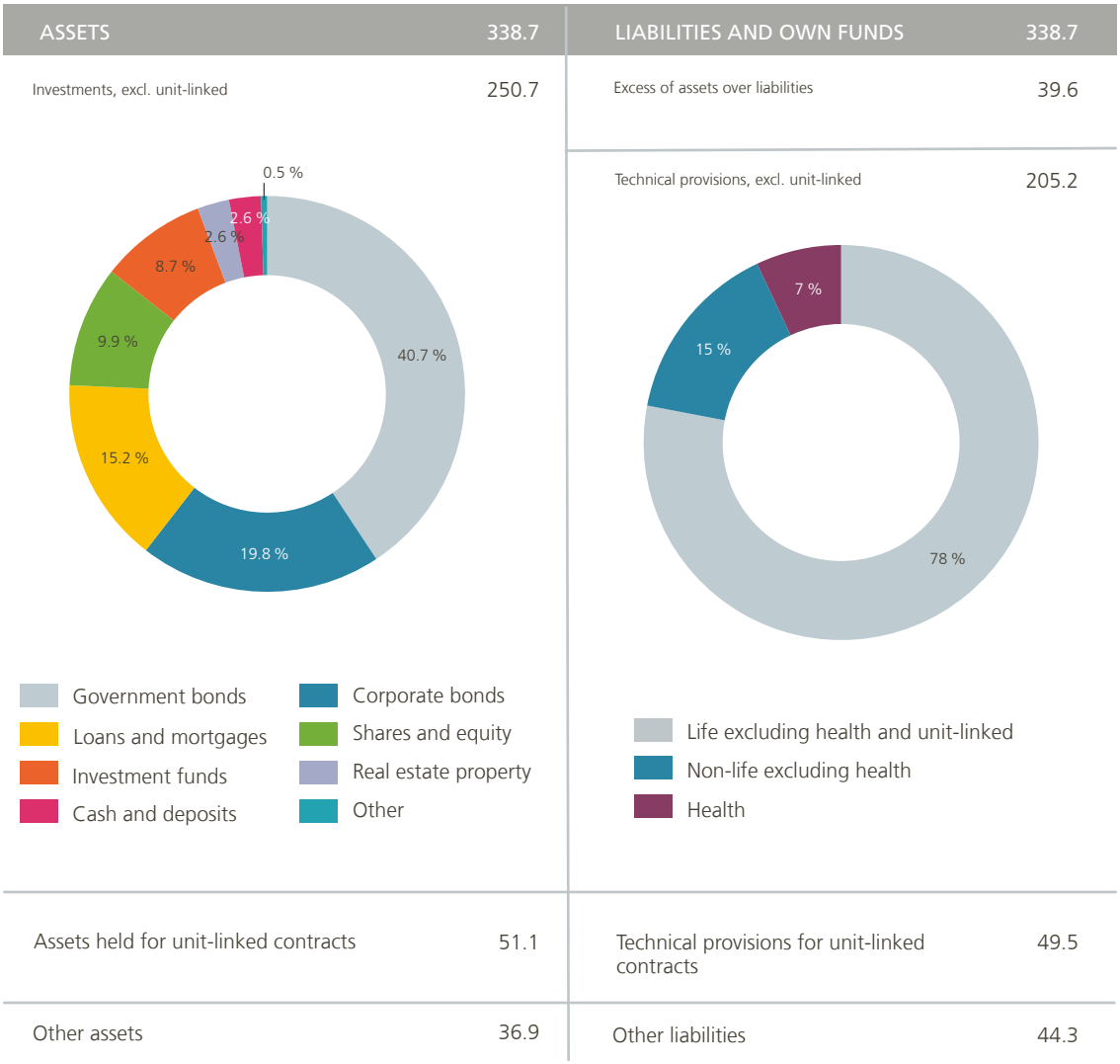
The analysis in this section is, for the most part, based on Solvency II reporting by Belgian insurance companies. Under the Solvency II framework, applicable since 2016, assets and liabilities are valued at market or market-consistent prices. Yet, for the technical reserves of insurance companies – which form the main part of the liabilities – market values are not available and the economic value of these reserves is therefore calculated as the present value of the incoming and outgoing financial flows using a (risk-free) discount rate. The discount rates that insurance companies must use to calculate the present value of these cash flows are set by the European Insurance and Occupational Pensions Authority (EIOPA) and are based on market-based swap rates for maturities up to 20 years, and an extrapolation towards an ultimate forward rate for maturities beyond 20 years. This ultimate forward rate is re-evaluated every year and was set at 3.45 % for 2023 (and 3.30 % for 2024 and 2025). Due to this link with market interest rates, the estimated value of these technical reserves is thus sensitive to changes in the overall level of interest rates, and it falls/rises when market interest rates rise/fall. As the duration of the liabilities of Belgian insurance companies is generally longer than that of their assets, a rise in interest rates thus improves the solvency position of the Belgian insurance sector, all other things being equal. But other factors are at play as well.

In the case of long-term insurance contracts, such as life insurance or disability insurance, the long-term guarantee package of Solvency II partly corrects the above-mentioned mark-to-market principle for liabilities. These long-term guarantee adjustments include the matching adjustment (a mechanism, subject to supervisory approval, that prevents changes in the value of assets caused by market movements in the spreads of these assets) and the volatility adjustment (which covers insurance products that would not be eligible for the matching adjustment). The volatility adjustment is an artificial spread, determined by EIOPA, that is added to the risk-free rate curve used by companies to calculate their technical provisions, to compensate for the change in spreads on the assets side. When spreads widen, the volatility adjustment increases as well and, as it raises the discount rate, it reduces technical provisions. It has a countercyclical effect, because when assets are hit by a spread shock, the shock is partially absorbed by a reduction in technical provisions to lessen the impact of the spread shock on own funds.

Figure 12

Main components of the balance sheet

(Solvency II non-consolidated data for the end of 2023, in € billion)



Source: NBB.

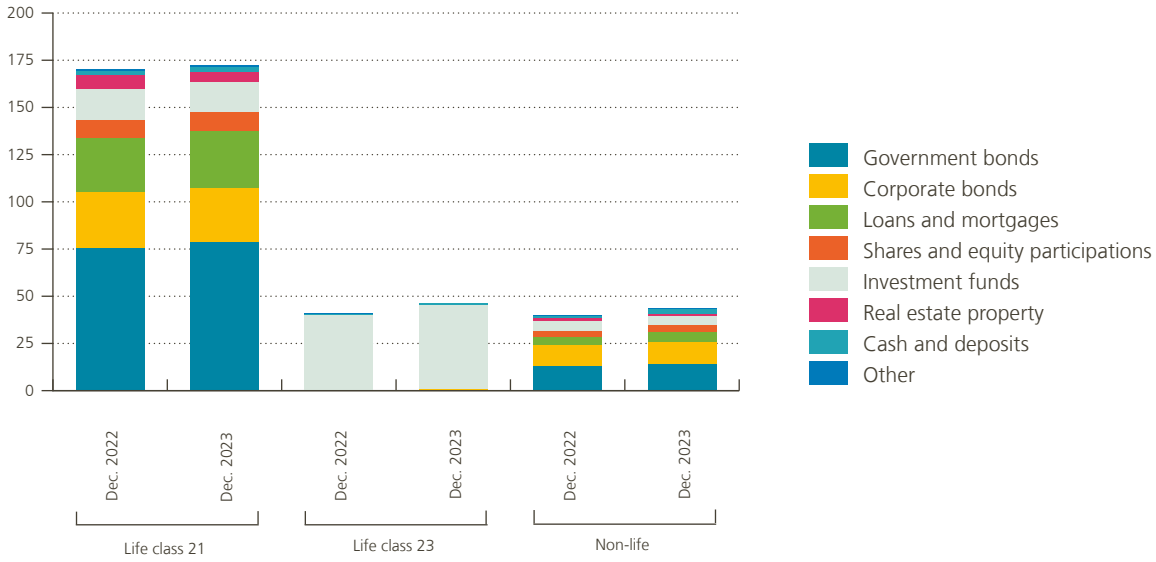
Figure 12 shows the Solvency II balance sheet of the Belgian insurance sector, in line with the so-called economic-value principle, as at the end of 2023. Total assets were then valued at €338.7 billion, which is still lower than the €377 billion recorded at the end of 2021, when the interest rate level was much lower. The assets and liabilities related to class 23 life insurance contracts are identified separately in this balance sheet. When analysing the financial position and financial stability risks of the insurance sector, the assets and liabilities related to the unit-linked or class 23 life insurance contracts should indeed be considered separately. These are life insurance policies with variable capital, comparable to mutual investment funds, where the policyholders bear all the investment risks. In other life insurance contracts – which still account for the majority of life insurance premiums in Belgium and cover both individual and group policies (Figure I6 in the annex) – the insurer provides some guarantee on the final return of the investments and thus bears at least part of the risks related to financial market developments. At the end of 2023, the technical provisions of these class 23 contracts amounted to €49.5 billion. The technical provisions excluding these unit-linked contracts amounted to €205.2 billion, shared between technical provisions for life insurance activities (78 %, excluding health insurance contracts similar to life insurance), non-life activities (15 %, without health insurance similar to non-life) and health insurance (7 %). The Solvency II own funds are defined as the difference between the economic value of assets and liabilities. This excess of assets over liabilities amounted to €39.6 billion at the end of 2023 (versus €38.4 billion at the end of 2022) and constitutes a key element of regulatory own funds. Total eligible own funds under Solvency II are indeed obtained by adding to this key component the other eligible forms of own funds that comply with the rules concerning the definition of Tier 2 and Tier 3 capital.

As shown in Figure 13, the assets held by insurance companies on behalf of unit-linked class 23 policyholders mainly consist of investment funds, while the assets held for the other classes of life insurance are dominated by government bonds (46 %), corporate bonds (17 %) and loans and mortgages (17 %), which together account for a share of more than three quarters of the covering assets. Investment funds and equity instruments each account for less than 10 % of the total. The volume of assets held for non-life insurance activities is much lower, in line with the generally shorter lifetime of these insurance contracts, obviating the need to invest premiums in order to meet liabilities still far-off in the future, as in the case of life insurance.

Figure 13

Composition of covering assets per insurance activity

(Solvency II non-consolidated data, in € billion)



Source : NBB.

Given the predominant role of fixed-income assets in life insurance contracts with minimum rates of return for policyholders, Belgian life insurers offering these contracts faced challenges in the low interest rate environment with generating a sufficient return on their investment to honour guaranteed yields. As shown in Figure I8 and Table I9 in the annex, one element that helped was the gradual decline in the average guaranteed rate on the stock of existing class 21 contracts. Between 2015 and 2022, the average guaranteed rate on the outstanding stock of life contracts dropped by one percentage point from 2.8 % in 2015 to 1.9 % at the end of 2021 and 1.8 % at the end of 2022. The investment return on assets held to cover these contracts – not taking into account capital gains and impairments – also declined but remained above the average guaranteed yield. The investment return fell from 4.2 % in 2015 to 2.9 % in 2021 but rose again slightly in 2022, to 3.2 %. This investment return was also a reflection of life insurers' search for yield, as they rebalanced their investment portfolios away from government bonds towards riskier and less liquid assets, such as mortgages and commercial real estate.

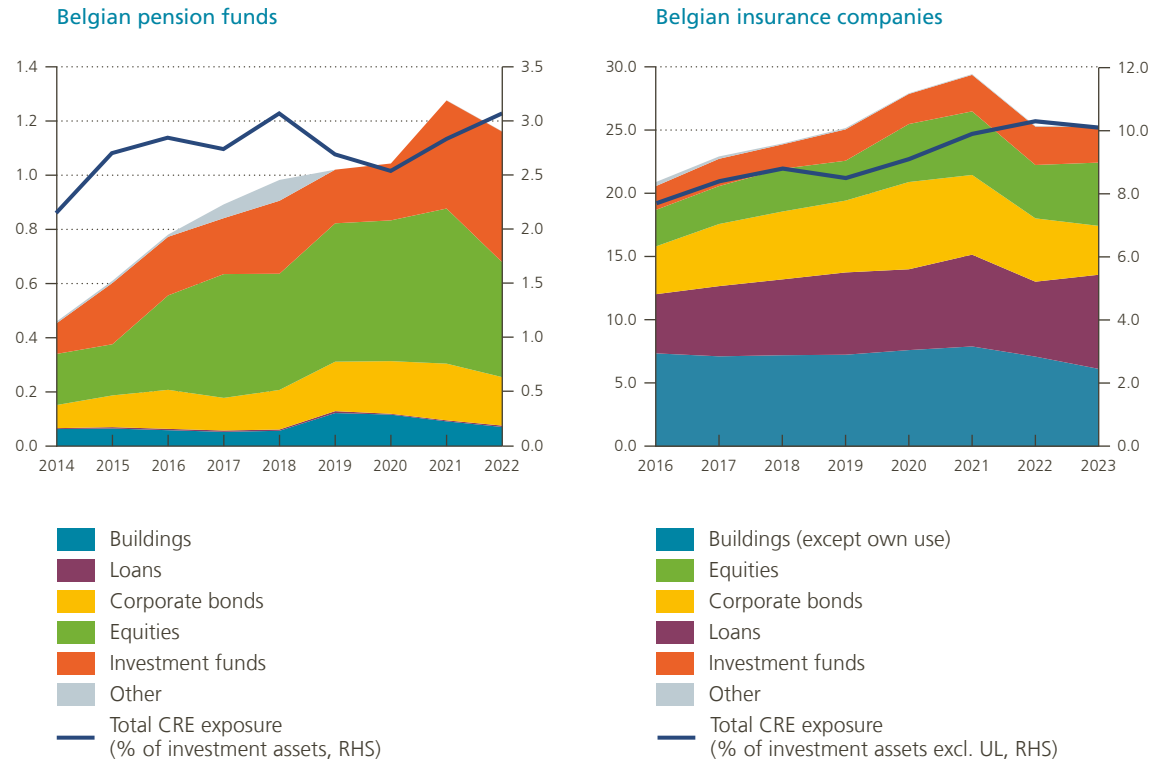
Exposure to residential property represents €20 billion (at the low estimate) or 8 % of the investment portfolio excluding class 23 products. The exposure to Belgian mortgages (around half of the above-mentioned amount) is discussed in more detail in the themed article on residential real estate. The other part mainly concerns mortgages originated in the Netherlands.

As shown in Figure 14, Belgian insurance companies increased their CRE exposure from less than 8 % of their investment portfolio (excluding assets covering unit-linked contracts) at the start of Solvency II reporting in March 2016 to 10 % at the end of 2023. This 10 % is quite high in comparison with insurance sectors in

Figure 14

CRE exposure of Belgian pension funds and insurance companies

(non-consolidated data, in € billions unless otherwise stated; Solvency II market value and alternative valuations)



Sources: FSMA, NBB.

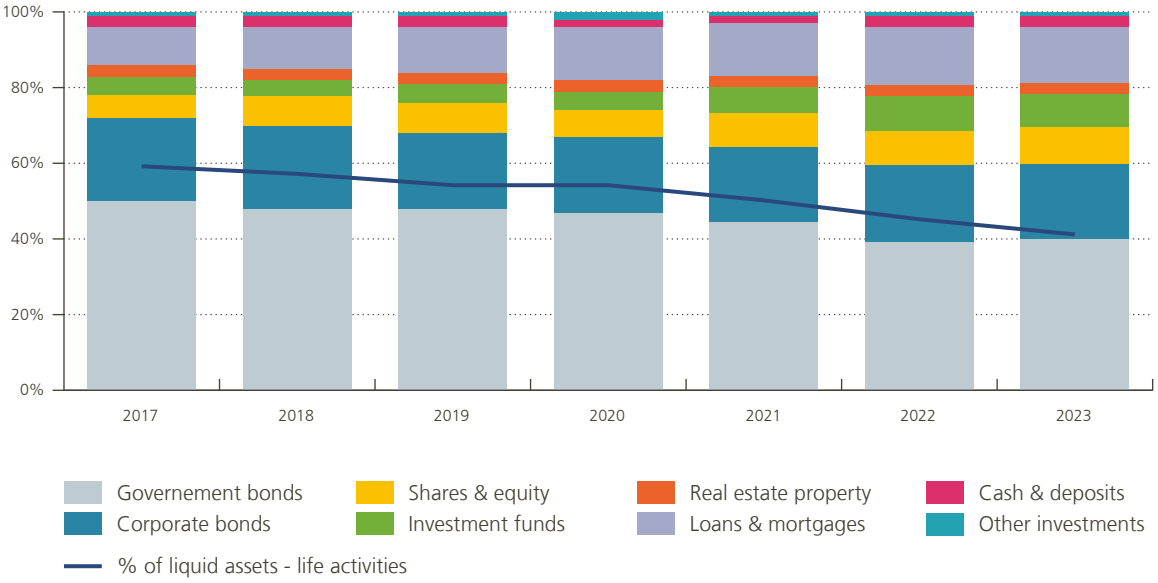
other countries or with a similar long-term investor in the Belgian financial system, the pension fund sector, which only invests around 3 % of its assets in CRE-related assets. At the end of 2023, the CRE exposure of the Belgian insurance sector (€25 billion) was composed of direct investments in properties (€6 billion) and indirect investments in CRE-related assets, i.e. financial instruments issued by real estate companies. These indirect exposures consist of CRE-related equities (€7.4 billion), corporate bonds (€3.9 billion), loans (€5 billion), and investment fund shares (€2.8 billion).

As discussed in more detail in the themed article on commercial real estate, the way in which these CRE assets are valued on the balance sheet is a point of attention, as the available price indicators point unequivocally to a decline in the market value of CRE properties as a result of the significant increase in interest rates. While the observed drop in the insurance sector's CRE exposure since the third quarter of 2022 is mainly due to the negative price effects related to the interest rate increase, the Bank will continue to monitor developments in this field very closely in order to assess whether these CRE exposures are valued in a sufficiently conservative way. In this context, it is worth recalling that given the low number of transactions in the primary and secondary markets for Belgian CRE assets, the price signals generated in such thin, if not illiquid, market conditions should be interpreted very cautiously – especially in view of the slow adjustment of yields on the CRE capital market (relative to the development of risk-free rates), and the observed discrepancy between the prices at which buyers wish to buy and those at which sellers wish to sell. Both factors could point in the direction of further downward pressure on CRE prices, all other factors being equal. Should certain real estate investors have to liquidate large portfolios of CRE assets on the market (due to liquidity problems, for example), it appears likely that the market would clear at prices indicating much lower market valuations than those seen so far. Yet, to date, no such distress transactions have taken place, as major landlords have not experienced, and are not likely to experience, liquidity pressures (given the closed-end structure of REITs and the long-term life insurance liabilities of insurance companies). To date, Belgian banks seem, in addition, to have provided sufficient financing to real estate companies faced with liquidity challenges as a result of the reduced ability to sell (developed) CRE properties on the market.

Figure 15

Composition of the investment portfolio, including the share of liquid assets in life insurance

(Solvency II non-consolidated data, in % of the investments, excluding unit-linked)



Source: NBB.

A mitigating factor is that the liquidity position of Belgian insurance companies remains strong (Figure 15), ensuring that they will not need to sell CRE assets (at a loss) solely for the sake of generating cash. As a result of the higher interest rate environment, the (potential) liquidity needs of insurance companies have nevertheless increased, due to margin calls on interest rate derivatives and (potential increases in the) surrenders of life insurance policies. But here again, the risk is mitigated by a number of factors.

Insurers use interest rate derivatives to hedge duration gaps (differences in the average durations of assets and liabilities), and their positions generated additional liquidity needs in the context of the collateralisation of these derivatives. Higher interest rates changed the market value of interest rate derivatives and correspondingly led to changes in the collateral that needs to be posted with the counterparty holding the "positive" market value of the contract. While the Belgian banking sector, generally speaking, is likely to be a net receiver of liquidity as a result of the most recent interest rate developments (it will have to post less collateral with interest rate derivative counterparties than in the past), insurance companies will generally be on the opposite side due to their very long-duration liabilities and a corresponding net receiver swap position to help close the duration gap with assets. Belgian insurance companies use derivatives to varying degrees. Taking the sector as a whole, the use of derivatives is moderate and related liquidity effects are therefore rather contained.

When interest rates rise, there is also an increased risk of policyholders deciding to surrender their life insurance contracts prematurely. In this case, the insurer must be able to liquidate the underlying investments in order to reimburse the policyholder. However, given the generally long term and the tax treatment of most contracts falling under the second and third pension pillars, the number of surrenders has remained stable and relatively low in 2023 (around 3 % of the surrender value of the life contracts being surrendered).

After the exit from the low interest rate period, the insurance sector offered again higher guaranteed interest rates on their new life insurance products. If interest rates decline again, this could contribute to downward pressures on the solvency position. The profitability of these new contracts could also be affected if investment returns decrease again. The solvency and profitability of the Belgian insurance sector is monitored with a specific attention towards this interest rate risk.

With a solvency capital ratio of 216 % at the end of 2023 (up from 209 % at the end of 2022), the Belgian insurance sector continues to dispose of a large capital buffer that could be used to absorb losses in case of adverse shocks (Figure I2 in the annex).

These adverse shocks include the increasing insurance underwriting risks related to climate change, and the related issue of natural disaster insurance. The floods that occurred in July 2021 caused a great deal of human and financial suffering for Belgian households and businesses. The impact was also very significant for the insurance industry, as water damage to buildings is covered by fire insurance. The inclusion of flood cover in fire insurance had already been made compulsory to protect policyholders against damage caused by natural disasters. In addition, in order to guarantee the insurability of flood damage and the financial stability of the insurance sector, the legislature had previously also developed a specific scheme as part of a public-private partnership. Under this arrangement, an initial tranche of the financial losses in the event of flooding would be borne by insurance companies. For exceptional disasters, coverage is capped, and the regions step in to cover the remainder of the damage suffered by Belgian households. At the time of the floods in July 2021, this cap was set at €350 million. However, the total damage caused by the floods reached €2.4 billion. The insurance sector therefore decided, by mutual agreement with the regions, to more than double its contribution compared with the statutory limit. This increased the share of losses borne by insurance and reinsurance companies. However, more than two years after the floods, it should be noted that there is still no new stable statutory framework that unambiguously defines how the burden of claims resulting from future natural disasters will be shared. This situation and the resulting uncertainty have already had a significant impact on Belgian insurers. Some companies are having difficulty obtaining reinsurance for natural catastrophe risks. In general, the premiums charged by reinsurers to Belgian fire insurers have risen by 50 %-60 % over the last two years. If this situation continues, reinsurers risk scaling back their business in Belgium. As a result, insurance companies would

no longer be able to offer coverage, and Belgian households would no longer be able to insure themselves against fire and natural disasters or would only be able to do so at much higher premiums. To provide greater certainty for all stakeholders, a clear statutory framework should be put in place. An initial reform of the law has already been carried out, raising the ceiling to €1.6 billion. However, the Bank believes that a new, more fundamental reform is needed to clarify the allocation of the costs of future natural disasters in Belgium, the financing of regional disaster funds, and the soundness of the framework in the light of worsening floods and other natural disasters.

4. Non-bank financial intermediation, digitalisation and decentralised finance

4.1 Non-bank financial intermediation and asset management

The growth of non-bank financial intermediation (NBFI) and asset management relates to the ongoing evolution towards a more market-oriented financial system, where an increasing share of financial intermediation occurs outside the banking sector. Market-based financing provides a valuable alternative to bank funding and helps to support real economic activity, fitting as well with the call in Europe to become less dependent on banks to finance the economy. But if a non-bank financial institution is involved in bank-like activities – such as maturity or liquidity transformation and facilitating or creating leverage – it may also contribute to risks to financial stability and create additional risks for investors, directly or through its interconnectedness with other sectors. In particular, the use of leverage can create risks and has the potential to amplify shocks throughout the financial system. This is especially the case in periods of stress or increased market volatility.

Since 2017, the Bank and the Financial Services Market Authority (FSMA) have regularly published a joint report on non-bank financial intermediation and asset management in Belgium. These reports analyse potential systemic risks stemming from the asset management and non-bank financial intermediation segments of the financial system, their interconnectedness with other (financial and non-financial) sectors and related consumer protection aspects. They also contain reviews of relevant national and international developments, regulations, and ongoing policy work. A new edition of the report will be published in the second half of 2024.

The Belgian NBFI sector is also considered by the Financial Stability Board (FSB) in its Global Monitoring Report on Non-Bank Financial Intermediation. The last edition of this report was published by the FSB on 18 December 2023 and describes broad trends in financial intermediation across 29 jurisdictions that account for around 85 % of global GDP, on the basis of data for 2022. The FSB's monitoring exercise is based on a two-step approach. The first step takes a comprehensive look at the NBFI sector to ensure that the data collected covers all areas in which vulnerabilities might arise within the financial system. The second step focuses on vulnerabilities associated with the NBFI sector that resemble those in the banking system or where regulatory arbitrage could undermine the goals of regulatory reforms enacted after the global financial crisis. This so-called narrow measure of NBFI is defined by the FSB as "credit intermediation that involves entities and activities outside the regular banking system, and therefore lacking a formal safety net". The definition does not mean that the NBFI sector escapes regulatory requirements, but rather that it is regulated in a different manner to "regular" banks. The bank-like risks covered in the narrow measure of NBFI are maturity transformation, liquidity transformation, leverage, and credit risk transfer. To arrive at a narrow measure of the NBFI sector in line with this FSB definition, participating countries identify those NBFI entities under their jurisdiction that may give rise to these vulnerabilities, and in turn classify these entities according to the five economic functions used by the FSB for risk monitoring purposes. These economic functions (EFs) are reproduced in Table 2.

Figure 16 shows the corresponding delineation of the narrowed-down NBFI sector in Belgium, based on the methodology put forward by the FSB. This delineation exercise starts with determination of the total financial

Table 2

Classification of the narrow NBFI sector by economic function

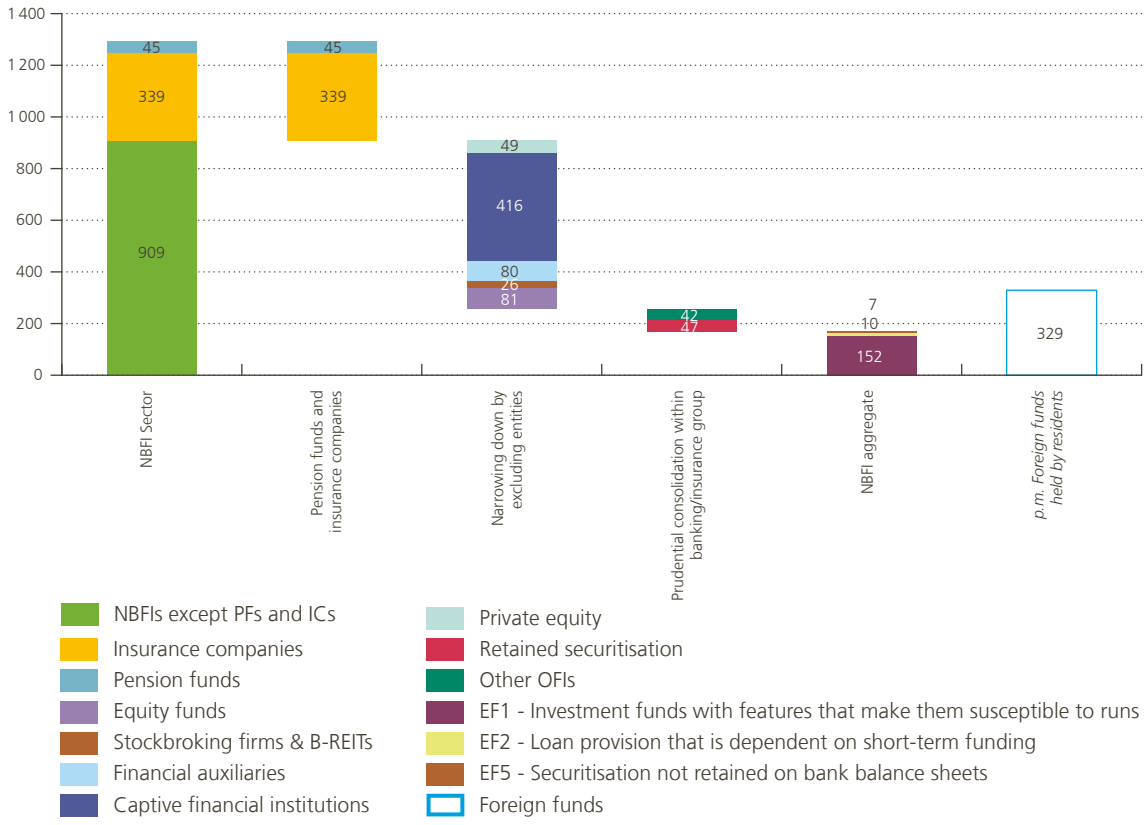
	Definition	Typical entity types
EF1	Management of collective investment vehicles with features that make them susceptible to runs	Money market funds, fixed income funds, mixed funds, credit hedge funds, real estate investment trusts and funds
EF2	Loan provision that is dependent on short-term funding	Finance companies, leasing/factoring companies, consumer credit companies
EF3	Intermediation of market activities that is dependent on short-term funding or on secured funding of client assets	Broker-dealers, securities finance companies
EF4	Facilitation of credit creation	Credit insurance companies, financial guarantors, monoline insurers
EF5	Securitisation-based credit intermediation and funding of financial entities	Securitisation vehicles, structured finance vehicles, asset-backed securities

Source: FSB Global Monitoring Report on Non-Bank Financial Intermediation 2023.

Figure 16

Delineation of the Belgian NBFI sector according to the FSB's narrow measure

(€ billions, end 2023)



Source: NBB.
Notes: NBFI = Non-bank financial intermediation; OFIs = Other financial intermediaries; B-REITs = Belgian Real Estate Investment Trusts.

assets of all non-bank financial institutions, which also includes pension funds and insurance companies. It is calculated by using flow of funds data from financial accounts. This broad definition of the Belgian NBFI sector amounted to €1 292 billion in 2023. However, it consists of a wide variety of financial entities and not all of them should be considered as posing bank-like financial stability risks. Therefore, the delineation shown in Figure 16 narrows down this aggregate to the part of the NBFI sector that poses bank-like risks to the financial system and that features entities that are not part of the prudential consolidation scope of a banking or insurance group.

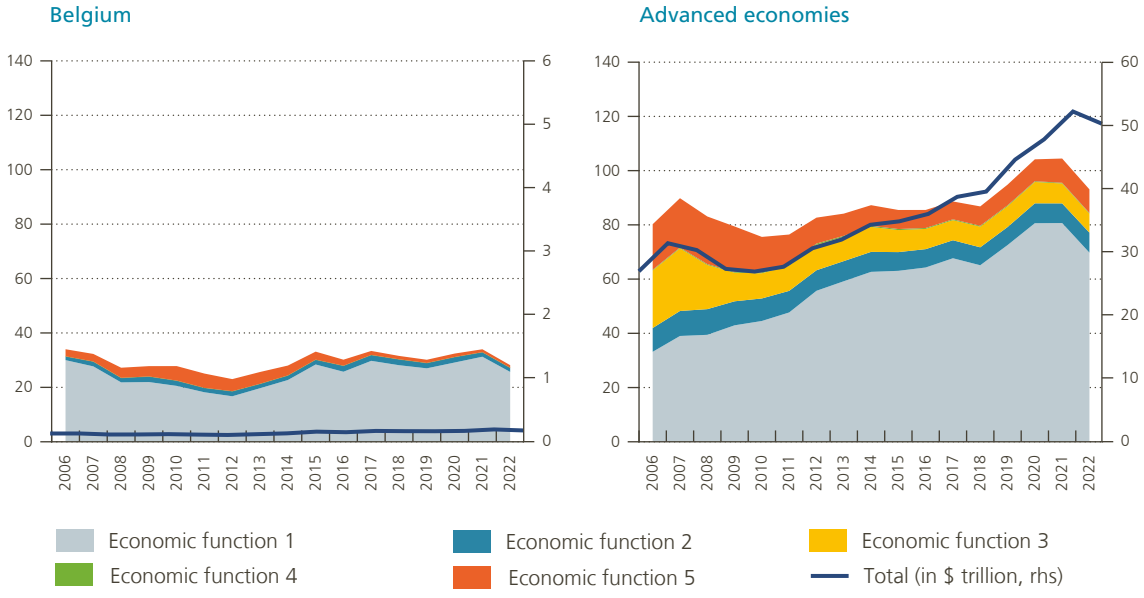
Based on the FSB's narrow measure and classification by economic functions, the total financial assets of the narrowed-down NBFI sector in Belgium amounted to €169 billion at the end of 2023. The sector consists mainly of money market funds (MMFs) and non-equity investment funds (EF1, €152 billion); of – to a much more limited extent – firms engaged in loan provision activity that is dependent on short-term funding, such as leasing, factoring, or consumer credit companies not part of banking groups (EF2, €10 billion); and securitisation that is not retained on banks' balance sheets (EF5, €7 billion). The narrowed-down Belgian NBFI sector therefore only accounted for around 1/10th of the total financial assets held by the Belgian non-bank financial sector and 1/20th of the total assets held by the Belgian financial sector (including banking sector assets) at the end of 2023.

Using data from the FSB's annual monitoring report, Figure 17 compares the (relative) size of the Belgian NBFI sector with the average for advanced economies. At the end of 2022, advanced economies (including Belgium) accounted for 80 % of the financial assets held by the global narrowed-down NBFI sector ($ 50.3 trillion out of $ 63.3 trillion). The US alone accounts for more than 30 % of this global aggregate. EU countries (excl. the United Kingdom and Switzerland) follow with a share of 21.5 %, driven, in particular, by the narrowed-down NBFI sectors of Luxembourg (7 %) and Ireland (6 %), followed by Germany (3.5 %) and France (2.5 %).

Figure 17

Size of the narrowed-down NBFI sector relative to GDP

(in %, unless otherwise stated)



Source: FSB Global Monitoring Report on Non-Bank Financial Intermediation 2023. More details on the economic functions can be found in Table 2.

The narrowed-down NBFI-sector in Belgium accounts for only 0.3 % of the global aggregate and 1.2 % of the total for EU countries. As shown in Figure 17, the size of the narrowed-down NBFI sector is also significantly smaller in Belgium (28 % of GDP) than in other advanced economies (93 % of GDP) when compared to the size of the economy. This confirms, on the one hand, that credit intermediation in Belgium is, to a large extent, still dominated by banks and by NBFIs excluded from the narrow measure that are part of banking groups (many leasing or consumer credit companies are subsidiaries of banks and hence part of the regulatory perimeter of consolidated bank supervision). Yet it also suggests that non-Belgian NBFIs (for example, investment funds incorporated in Luxembourg) play a relatively bigger role in the provision of financial services in Belgium than in other advanced economies, on average.

As part of Belgium's Financial Sector Assessment Programme, IMF Staff assessed the resilience of Belgian open-end investment funds through a liquidity stress-testing approach. The analysis focused on investment funds with characteristics that make them susceptible to runs, in order to (i) assess the ability of investment funds to withstand severe but plausible redemption shocks, (ii) identify the types of funds that are potentially more vulnerable to liquidity risk, and (iii) estimate the sector's capacity to transmit shocks to the rest of the financial system. Based on data from the end of 2022, the sample comprised 435 funds for a total net asset value of around €136 billion and included bond funds, funds of funds, non-public alternative investment funds that pursue their strategies with more limited regulatory constraints, and a residual, heterogeneous group of other funds. The stress test did not take into account the use by these funds of liquidity management tools to mitigate liquidity shocks. It found that the Belgian investment funds sector would be able to withstand severe but plausible redemption shocks, while a few non-public alternative funds could run into difficulties.

This rather reassuring finding from the FSAP stress test on the liquidity risk in open-ended investment funds echoes the findings of the regular joint NBB-FSMA reports on NBFI and asset management in Belgium. However, there is no room for complacency as regards NBFI risks given the presence of potential pockets of risk in certain very specific subsegments, and the very important cross-border interconnectedness, especially within the EU, where some countries have developed a large NBFI sector that also provides financial services to other Member States. In line with IMF recommendations, the NBB and FSMA will therefore continue to monitor developments in the Belgian NBFI and asset management sectors closely.

At the same time, further progress will need to be made at the international and European levels to improve the regulatory framework for the global NBFI sector. In the past few years, there have been several illustrations of the risks that can arise in the non-bank financial sector when entities use leverage to increase returns or fail to maintain sufficient reserves to cope with liquidity shocks. For example, when the pandemic began in March 2020, many investors shifted to liquid assets. This forced open-ended investment funds – though not in Belgium – to dump assets on the financial markets in order to pay back investors. These events prompted central banks to intervene so as to stabilise the markets. A year later, the collapse of the financial services company Greensill and the family office Archegos showed that banks can sustain significant losses when they are exposed to poorly regulated entities with a high risk profile. In the second half of 2022, the Bank of England had to intervene to stabilise the gilt market. This market found itself in trouble due to adverse interaction between the leveraged investments of UK pension funds and a sharp rise in UK government bond (gilt) yields, initially triggered by the announcement of an unexpectedly expansionary fiscal policy. Although the problems were more or less confined to the UK market, this episode provided yet another illustration of the need to reinforce the regulatory framework for the NBFI sector in order to ensure a more stable provision of financing to the economy and reduce the need for extraordinary central bank interventions. Yet, these efforts to strengthen NBFI resilience should not compromise resilience in other parts of the system or the important role that NBFI plays in financing the real economy.

Building on the lessons from the March 2020 market turmoil, the FSB has therefore developed a comprehensive work programme to examine and address specific issues that contributed to the amplification of the shock and to assess policies designed to address related systemic risks. A key focus of the ongoing FSB policy work to enhance NBFI resilience is the reduction of excessive spikes in liquidity demand by addressing the vulnerabilities

that drive those spikes, or by mitigating their impact on financial stability. A first set of policies involves revision of the FSB Recommendations on structural liquidity mismatches in open-ended investment funds, by providing greater clarity on the redemption terms that these funds could offer to investors based on the liquidity of their asset holdings, and by promoting greater use of liquidity management tools. The objective of revising the Recommendations is to significantly strengthen liquidity management by investment fund managers in relation to current practices. A second set of policies aims to enhance margining practices. This includes high-level, cross-sector policy recommendations on liquidity risk management and governance to enhance the liquidity preparedness of market participants for margin and collateral calls.

In the EU, and taking a broad perspective on NBFI, the Commission plans to run a targeted consultation on macroprudential policies for non-banks in 2024. The aim will be to collect further insights on the business models of key participants in the non-bank financial sector; on the level of their interconnectedness both with one another and with banks; and to identify gaps in the macroprudential framework and other factors that may contribute to the build-up of systemic risks. In the absence of an overall EU macroprudential framework governing non-banks, and to tackle some specific emerging risks in important non-bank sectors, a number of EU directives and regulations applicable to non-banks already include some macroprudential tools that aim to mitigate the build-up of systemic risk or to manage the impact of a systemic event. For instance, some tools and provisions to manage liquidity, leverage and operational risks were created for the investment fund sector (for alternative investment funds, undertakings for collective investment in transferable securities, and money market funds), for the insurance sector, and for margin practices and risk management related to central counterparties. However, as credit activity and risks shift increasingly from the banking to the non-banking sectors, the Commission plans to collect further evidence on missing tools and potential gaps within existing tools to meet macroprudential objectives, and on the effectiveness and consistency of macroprudential policies for non-banks in the EU. This work will underpin and support any policy decision that the 2024-2029 Commission may take in this area.

4.2 Digitalisation and fintech-companies

The digitalisation of the financial world offers opportunities for financial institutions but also presents risks. Technological innovation is in any case increasingly influencing the business models of financial institutions and creating opportunities for new market players. Fintech-companies are at the forefront of this development. According to the definition used by the FSB, fintech should be understood as "*technologically-enabled innovation in financial services that could result in new business models, applications, processes or products*". Pure fintech-start-ups operate inside or alongside the traditional financial system, whether or not in close cooperation with the so-called incumbent financial institutions that make it up. This sub-section focuses on fintech and clearly distinguishes this aspect of the digitalisation of finance from that covered in the next sub-section, which focuses on decentralised finance and crypto markets.

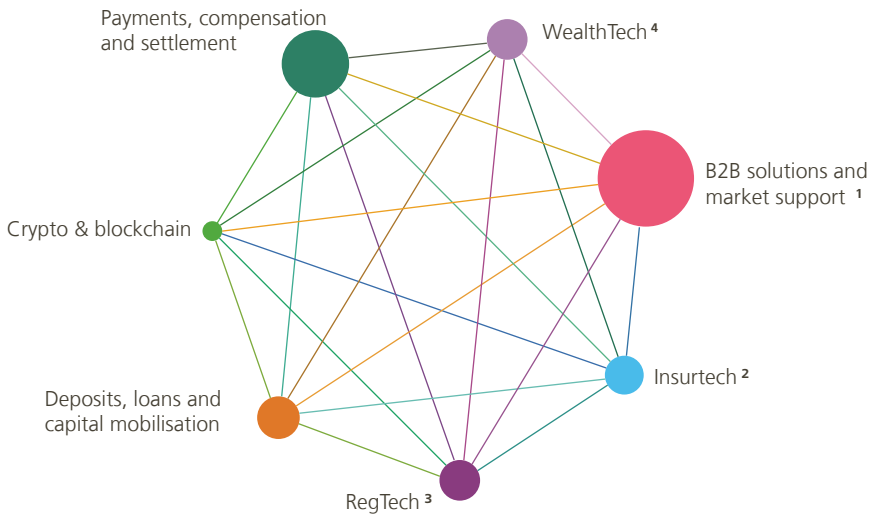
The fintech ecosystem involves a wide range of actors and upon the request of the government, the Bank carried out a study of this ecosystem in Belgium. In addition to mapping the ecosystem (Figure 18) and assessing its economic importance, the study identified the key characteristics of companies active in the field. It found that the sector is currently composed of two main subsegments: fintech companies offering business-to-business (B2B) solutions, particularly to the financial sector ("tech4fin companies"), and those offering payment-related solutions. It also identified several cross-cutting factors that could help facilitate the further development of the ecosystem, and highlighted the complementary role played by various non-financial sector actors as well as the synergies that could be enhanced within the ecosystem.

A detailed summary of the study and of its conclusions can be found in the themed article "The Belgian fintech ecosystem".

Figure 18

Schematic mapping of the Belgian fintech ecosystem

(the size of the circles is proportionate to the number of firms in each segment)



Source: NBB.

1 Digital solutions designed for business-to-business (B2B) financial relations or processes.

2 Digital solutions and innovative business models for the distribution (e.g. comparison portals, digital brokers) and/or underwriting of insurance products and services (e.g. mobile insurance applications, integrated online insurance, on-demand cover and peer-to-peer insurance).

3 Digital applications for regulatory compliance and reporting by financial and non-financial institutions.

4 Digital investment portfolio management platforms, including the automation of financial advice on investment products and client interfaces using algorithms (e.g. robo-advice and robo-management).

4.3 Decentralised finance and crypto-markets

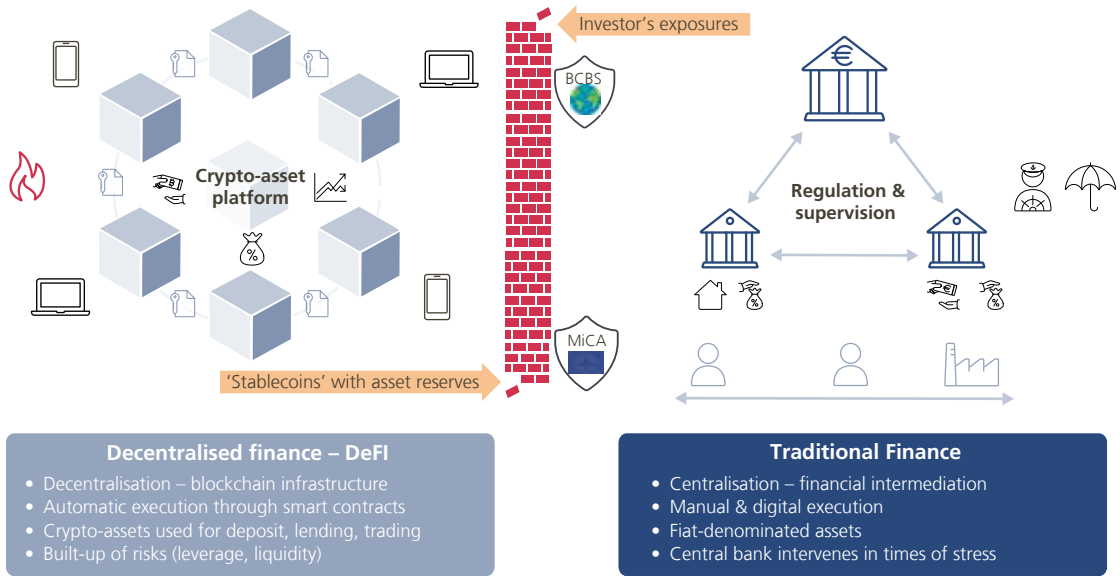
Decentralised finance and crypto markets are another, though altogether very different, manifestation of the opportunities opened up by digitalisation. Crypto markets are not part of the regular financial system and the analysis in this sub-section aims foremost to remind (Belgian) investors of their highly speculative nature and of the high risks of losses due to the (insufficient) way in which these crypto markets are organised (Figure 19).

Decentralised finance and crypto-markets lack many of the guard rails that have been integrated into the traditional financial system to protect customers and maintain financial stability, based on long historical experience with financial crises and the inherent instability of unorganised financial markets. The crypto world witnessed a number of high-profile failures, such as the collapse of the stablecoin TerraUSD, the bankruptcy of the leading trading platform FTX and record penalties imposed on Binance in the US due to failures to prevent money laundering. In this context, the strong similarities with past financial bubbles demonstrated that the valuation of these products was based on highly speculative practices. The events also revealed fraud, market manipulation and inadequate due diligence, notably made possible by shortcomings in the management and governance of the firms active on these markets.

Due to limited connections between regulated financial institutions and the crypto markets, the turbulence affecting the latter had little impact on the former. Overall, the crypto markets and decentralised finance therefore do not currently seem to pose a real threat to financial stability as such. But this may only be true if and for as long as interconnection with the conventional financial sector remains low. The approval of eleven spot Bitcoin Exchange Traded Funds (ETFs) by the US Securities and Exchange Commission (SEC) in January 2024

Figure 19

Traditional versus decentralised finance



was an important development in that respect. The ETFs are investment funds listed on the US stock exchange and managed by registered custodians, with directly owned Bitcoin in digital wallets as their underlying asset. If an ETF buys Bitcoins (e.g. through authorised crypto asset exchanges), these are stored in its digital wallet and the ETF then issues shares corresponding to the number of Bitcoins it holds; the ETF share price reflects the prevailing market price of Bitcoin. These shares can be bought and sold by investors. The share price of the spot Bitcoin ETF should reflect the real-time value of Bitcoin and is thus an indirect way of holding or trading Bitcoin, while using a financial asset familiar to the standard regular financial system. The SEC-approved spot Bitcoin ETFs are offered by some of the largest US asset management funds, such as BlackRock, with institutional investors and retail investors able to buy shares in them through regulated intermediaries such as online brokerage accounts or financial advisors. That said, they are restricted to the US and Canada, only.

This authorisation of Bitcoin ETFs should, however, not be seen as an official seal of approval of crypto as a suitable back-up for regular financial assets, or as a credible "financial asset" with intrinsic value, like any other. It remains a highly speculative and volatile investment with a high risk of losses for investors.

The approval of the ETFs nevertheless shows that crypto markets, their connections to the regular financial system (including through reserve-backed stablecoins), and a possible shift in the dynamics of investors' exposures, require close monitoring and, where necessary, regulatory action, such as the Markets in Crypto Assets (MiCA) regulation for crypto issuers and providers in the EU, or the Basel Committee on Bank Supervision's standard on the prudential treatment of crypto exposures in banks.

5. Additional charts and tables

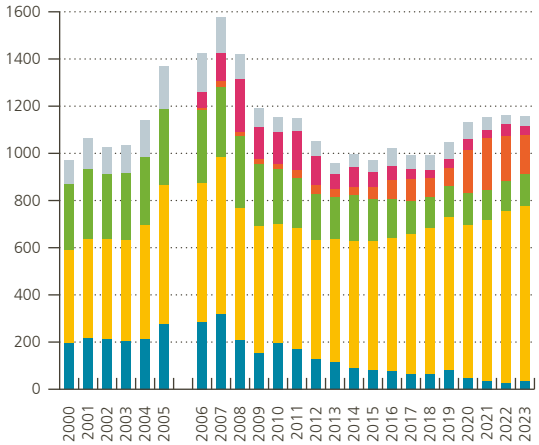
5.1 Banking sector

Figure B1

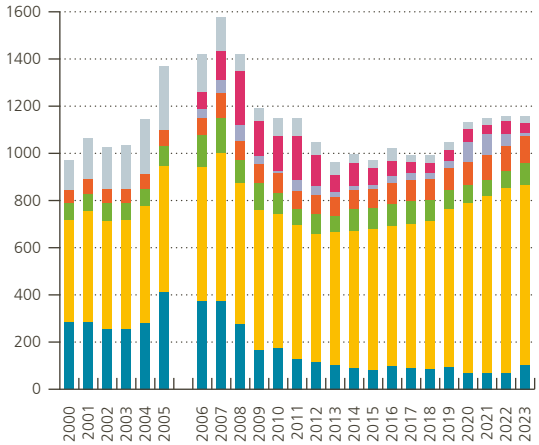
Assets and liabilities by product [1]

(consolidated data, in € billion)

Breakdown of assets by product



Breakdown of liabilities by product



Source: NBB.

1 Data compiled according to Belgian accounting rules (Belgian GAAP) until 2005 and according to IAS/IFRS standards from 2006.

2 "Other assets" mainly include shares, tangible and intangible assets and deferred tax assets. "Other liabilities" are primarily short positions, liabilities other than deposits and debt securities, provisions and liabilities for defined benefit obligations. From the third quarter of 2014, liabilities linked to transferred assets are no longer recognised under "other liabilities" but are included under different items on the liabilities side.

3 Derivatives are recognised at market values – from 2007 – income receivable and expenses payable.

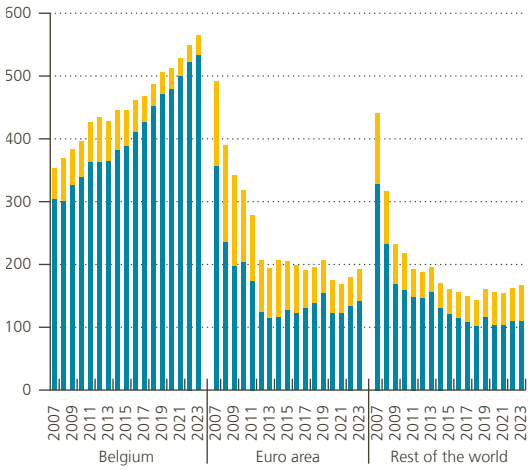
4 From the third quarter of 2014, savings certificates are no longer included in "deposits and savings certificates" but are recorded under "certificats of deposit, bonds and other debt instruments".

Figure B2

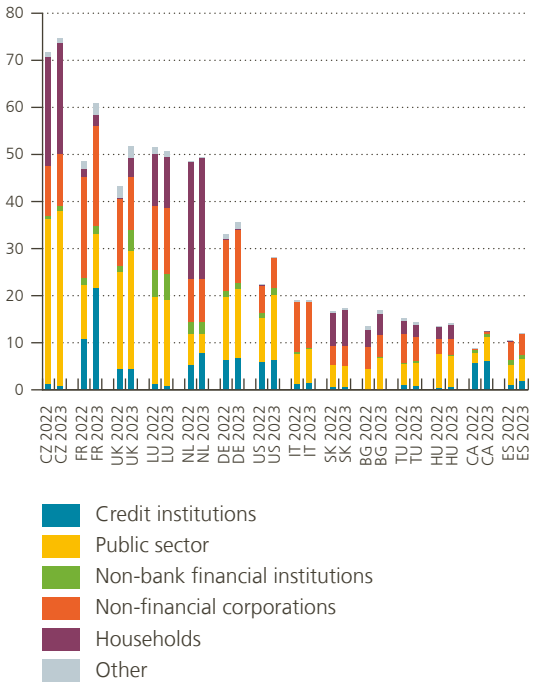
Geographical and sectoral breakdown of assets held by Belgian banks

(consolidated data, in € billion)

Geographical breakdown of loans and debt securities [1]



Exposure on the main foreign markets, by counterparty [2]



Source: NBB.

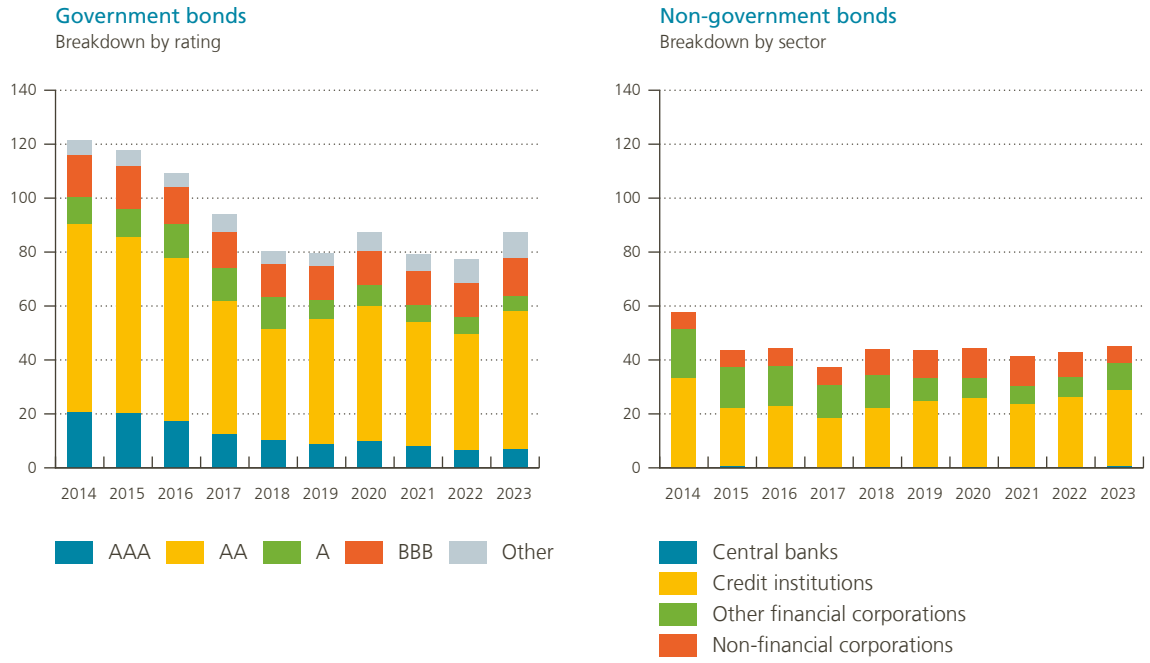
1 Gross carrying amounts, excluding exposures to central banks.

2 Ultimate risk basis, i.e. after guarantees and other risk transfers.

Figure B3

Belgian banks' bond portfolio

(consolidated data, in € billion)



Source: NBB.

Table B4

Sectoral breakdown of Belgian banks' outstanding loans to non-financial corporations

(consolidated data, at the end of 2023, gross carrying amounts, in € billion)

	Total NFCs	Belgian NFCs	Foreign NFCs
Loans and advances to non-financial corporations	305.4	188.7	116.7
of which:			
Manufacturing	45.3	21.2	24.1
Wholesale and retail trade	43.2	27.3	16.0
Real estate activities	43.1	34.9	8.2
Construction	30.9	22.4	8.5
Administrative and support service activities	24.7	7.6	17.1
Professional, scientific and technical activities	23.0	19.7	3.4
Transport and storage	17.6	8.4	9.2
Human health services and social work activities	15.8	14.6	1.2
Agriculture, forestry and fishing	13.0	4.0	9.0
Electricity, gas, steam and air conditioning supply	12.0	5.5	6.5
Financial and insurance activities	8.9	6.9	2.0
Information and communication	8.3	3.7	4.6
Other services	4.8	2.1	2.7
Accommodation and food service activities	4.1	3.4	0.8
Water supply	3.9	2.8	1.1
Arts, entertainment and recreation	2.1	1.8	0.3
Mining and quarrying	1.9	0.2	1.7
Public administration and defence, compulsory social security	1.7	1.6	0.1
Education	0.8	0.6	0.2

Source: NBB.

Table B5

Belgian banks' exposures to the residential and commercial real estate market[1]

(gross carrying amount, consolidated end-of-period data)

	2021		2022		2023	
	In € billon	In % of total assets	In € billon	In % of total assets	In € billon	In % of total assets
Residential real estate market						
Lending for house purchase	290.9	25.3	311.3	26.9	319.3	27.6
Loans collateralised by residential real estate	288.2	25.0	306.7	26.5	316.5	27.4
of which to Belgian residents	228.9	19.9	240.8	20.8	247.0	21.4
Commercial real estate market						
Loans to the commercial real estate sector[2]	63.7	5.5	69.2	6.0	74.1	6.4
of which to Belgian residents	49.0	4.3	53.1	4.6	57.3	5.0
Loans collateralised by commercial real estate	77.5	6.7	83.8	7.2	91.2	7.9
of which to Belgian residents	62.6	5.4	66.9	5.8	72.6	6.3
"CRE" loans (ESRB definition)[3]	–	–	90.0	7.8	102.7	8.9

Source: NBB.

1 According to different concepts available in the reporting, which can be partly or largely overlapping.

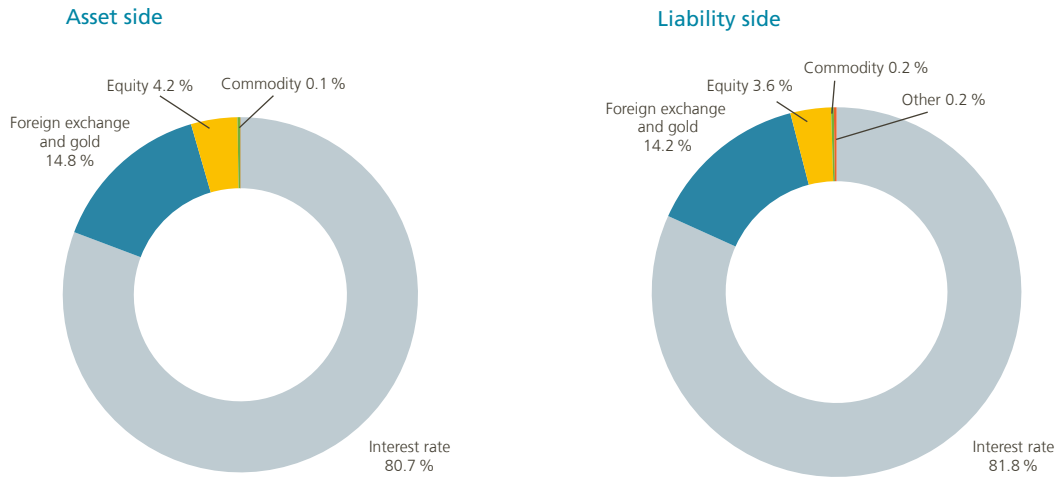
2 Loans to the NACE sectors of construction and real estate activities.

3 CRE loans according to the ESRB definition are loans to corporations for the purchase, construction or development of commercial real estate, or collateralised by commercial real estate.

Figure B6

Breakdown of the market value of Belgian banks' derivative positions, by type of derivative

(gross carrying amount, consolidated end-of-period data)



Source: NBB.

Table B7

Belgian banks' asset encumbrance in 2023

(amounts of collateral provided by source of encumbrance, consolidated data; in € billion, unless otherwise stated)

	Collateral type								Total collateral provided	Ratio of over-collateralisation (in %)
	Government bonds	Other bonds	Loans to households	Loans to non-financial corporations	Loans to financial institutions	Loans to central banks and governments	Loans on demand	Other assets / collateral received		
Sources of encumbrance										
Derivative transactions	3.8	1.4	0.0	0.1	5.2	0.1	0.2	4.0	14.8	109.8
Repo transactions and other deposits (excluding central banks)	25.7	11.0	33.0	9.6	0.0	0.4	0.0	0.9	80.6	110.6
Issuance of covered bonds	0.5	0.1	34.6	0.2	0.0	1.4	–	–	36.7	131.3
Issuance of ABS	–	–	3.1	0.9	–	–	0.0	–	4.0	90.6
Central bank funding (of all types: TLTROs, repos)	0.7	0.1	3.1	5.5	0.0	2.5	–	–	11.9	123.2
Other sources of encumbrance	3.7	2.9	4.5	1.4	0.1	0.0	1.4	0.3	14.3	195.5
Total encumbered assets and collateral received	**34.5**	**15.4**	**78.4**	**17.6**	**5.3**	**4.4**	**1.7**	**5.1**	**162.4**	**119.5**
Asset encumbrance ratio[1] (in %)	**29.6**	**17.0**	**13.3**				**1.1**	**6.4**	**13.2**	

Source: NBB.

1 Asset encumbrance ratio as defined in the Commission Implementing Regulation (EU) No 2015/79 (paragraphs 9-11 of Annex III), calculated as $\frac{\text{total encumbered assets + total collateral received and reused}}{\text{total assets + total collateral received and available for encumbrance}}$.

Here, as in the EBA methodology, assets are measured at the carrying amount and collateral is measured at fair value.

Table B8

Belgian banks' asset quality ratios

(consolidated end-of-period data, in %)

	NPL ratio						Ratio of performing forborne loans		Coverage ratio		
	Total exposures		Belgian exposures		Foreign exposures				Excluding collateral received		Including collateral received
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2023
Total loans[1]	1.5	1.6	1.6	1.7	1.3	1.3	1.2	0.8	44.1	43.3	83.1
of which:											
Non-financial corporations	2.8	2.9	3.2	3.3	2.3	2.2	2.0	1.2	51.4	50.4	85.7
of which:											
SMEs	2.9	3.0	2.9	3.1	2.9	2.8	1.8	1.0	45.6	44.0	85.9
Loans collateralised by CRE	2.9	2.8	3.0	3.1	2.5	1.8	2.9	1.4	28.5	26.4	94.1
Households	1.1	1.2	1.2	1.2	1.0	1.2	0.8	0.6	22.6	24.6	83.0
of which:											
Residential mortgage loans	0.9	0.9	0.9	0.9	0.6	0.6	0.8	0.7	12.1	12.8	98.6
Credit for consumption	3.6	4.0	3.6	4.0	3.6	4.0	0.2	0.3	42.1	44.7	48.3

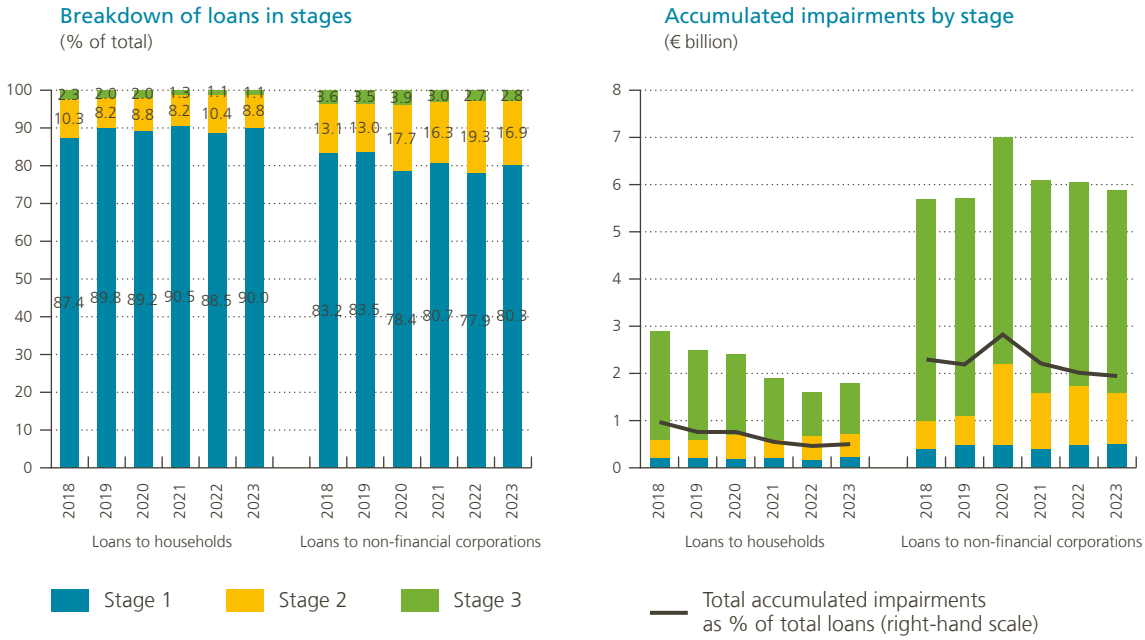
Source: NBB.

1 Including exposures to central banks, general governments, credit institutions, other financial corporations, non-financial corporations and households.

Figure B9

Breakdown of loans to households and non-financial corporations and their accumulated impairments, by IFRS 9 impairment stage

(consolidated end-of-period data)



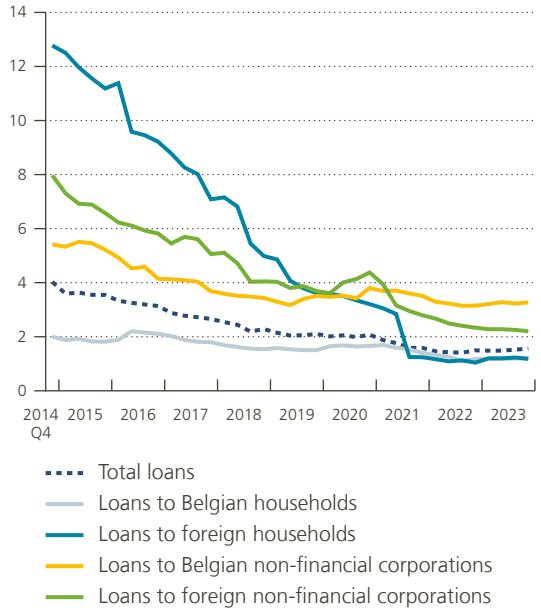
Source: NBB.

Figure B10

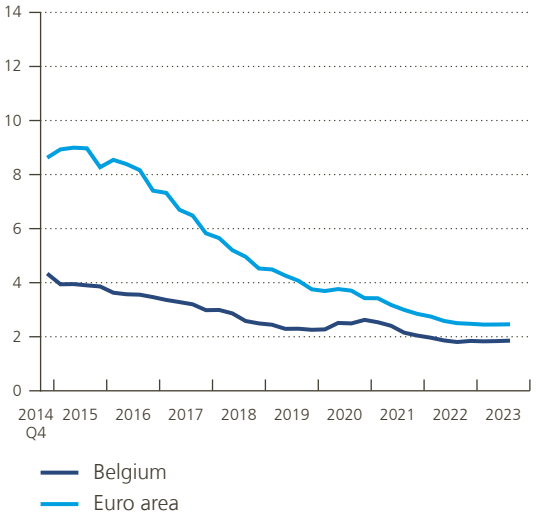
Non-performing loans

(consolidated end-of-period data, in % of total loans)

NPL ratio Belgian banking sector [1]



NPL ratio in Belgium and the euro area [2]



Source: NBB.

1 Non-performing loans are loans that may not be repaid, due to their borrower getting into financial trouble, or that are already in arrears.

2 The calculation of NPL ratios in this chart is based on a slightly different scope than in the left-hand panel.

Figure B11

NPL ratio for non-financial corporations by corporate sector [1]

(consolidated data, in % of total loans by sector)

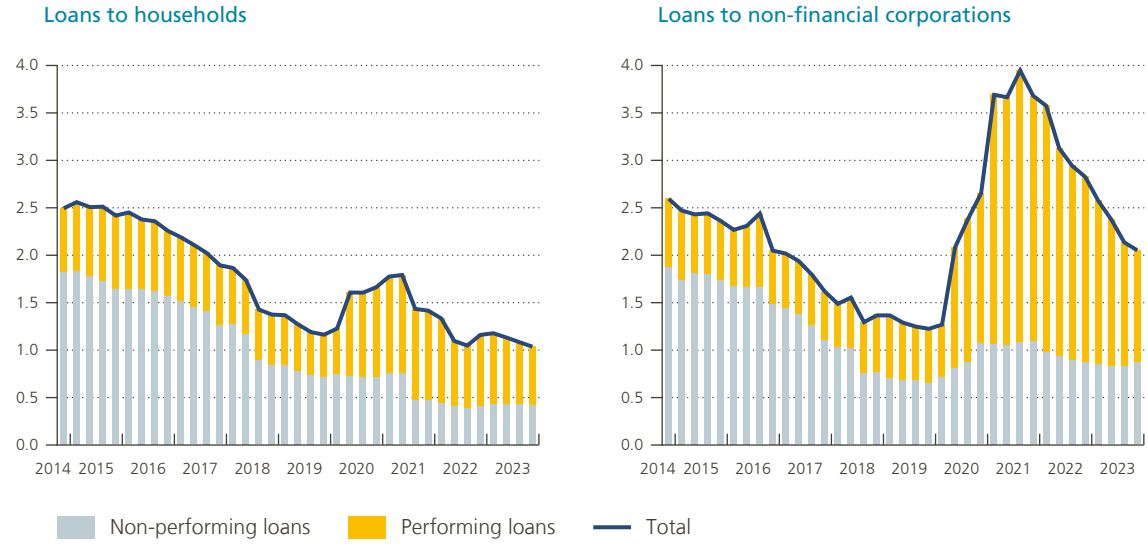
Source: NBB.

1 Excluding the three smallest sectors in terms of the banking sector's exposures.

Figure B12

Loans with forbearance measures[1]

(consolidated end-of-period data, in % of total loans)



Source: NBB.

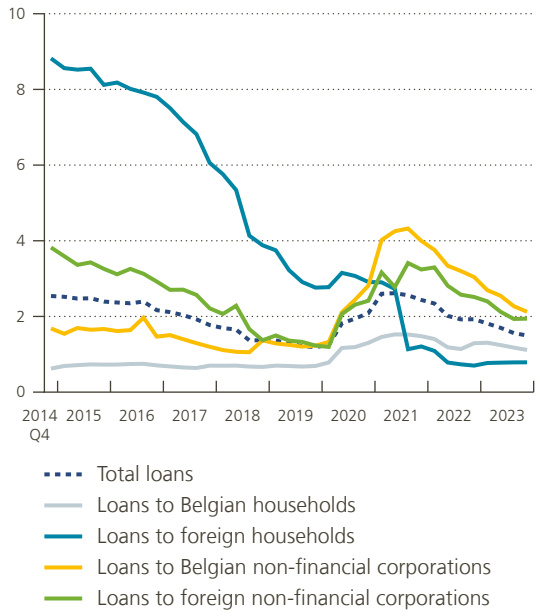
1 Loans with forbearance measures are loans for which banks have made concessions (modifications of the contract or debt refinancing) to debtors facing or about to face financial difficulties in meeting their commitments.

Figure B13

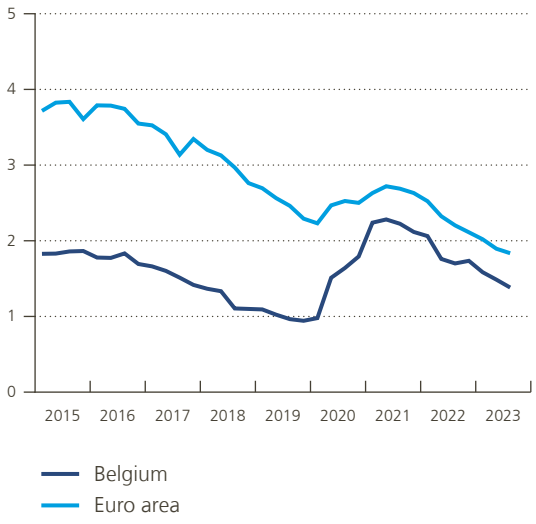
Loans with forbearance measures [1]

(consolidated data, in % of total loans)

Forbearance ratio Belgian banking sector [1]



Forbearance ratio in Belgium and the euro area [2]



Source: NBB.

1 Loans with forbearance measures are loans for which banks have made concessions (modifications of the contract or debt refinancing) to debtors facing or about to face financial difficulties in meeting their commitments.

2 The calculation of the forbearance ratios in this chart is based on a slightly different scope than in the left-hand panel.

Table B14

Aggregate income statement of the Belgian banking sector

(consolidated end-of-period data, in € billion)

	2017	2018	2019	2020[5]	2021	2022	2023
Net interest income	14.11	14.41	14.62	14.19	14.35	15.30	18.08
Non-interest income	8.94	8.25	8.48	8.19	7.63	7.94	8.09
Net fee and commission income[1]	5.62	5.58	5.57	5.59	6.43	6.55	6.67
(Un)realised gains or losses on financial instruments[2]	0.86	1.22	0.53	0.01	0.56	0.80	0.21
Other non-interest income	2.46	1.46	2.39	2.59	0.64	0.59	1.22
Total operating income (bank product)	23.05	22.66	23.10	22.39	21.98	23.24	26.16
Total operating expenses (–)	13.42	13.89	13.74	13.82	13.28	14.18	15.28
Staff expenses (excluding commissions paid to bank agents)	6.74	6.84	6.77	6.51	6.20	6.37	6.80
General and administrative expenses (including depreciation)	6.68	7.05	6.97	7.31	7.08	7.81	8.48
Gross operating result (before impairments and provisions)	9.63	8.77	9.36	8.57	8.71	9.06	10.88
Total impairments and provisions (–)	0.67	0.83	1.26	3.12	0.23	1.11	0.75
Impairments on financial assets at amortised cost[3]	0.41	0.61	1.05	2.77	0.19	0.84	0.60
Impairments on other financial assets	–0.07	–0.01	0.01	0.02	0.00	–0.01	0.00
Other impairments and provisions	0.34	0.23	0.20	0.32	0.03	0.28	0.15
Other components of net operating income[4]	0.29	0.26	0.25	0.50	1.78	1.99	2.35
Net operating income	9.25	8.20	8.35	5.96	10.25	9.94	12.49
Tax and extraordinary profit or loss	–2.64	–2.00	–1.78	–1.26	–2.02	–1.86	–2.70
Total profit or loss on discontinued operations	–	–	–	–	–	0.00	0.00
Net profit or loss including minority interest	6.61	6.20	6.57	4.70	8.23	8.08	9.78
p.m. Net profit or loss (bottom-line result)	*5.95*	*5.60*	*6.12*	*4.26*	*7.76*	*7.62*	*9.34*

Source: NBB.

1 Including commissions paid to bank agents.

2 This item includes the net realised gains (losses) on financial assets and liabilities not measured at fair value through profit or loss, the net gains (losses) on financial assets and liabilities held for trading and designated at fair value through profit or loss, and the net gains (losses) from hedge accounting.

3 Data for the years before 2018 relate to impairments on loans and receivables (under IAS 39).

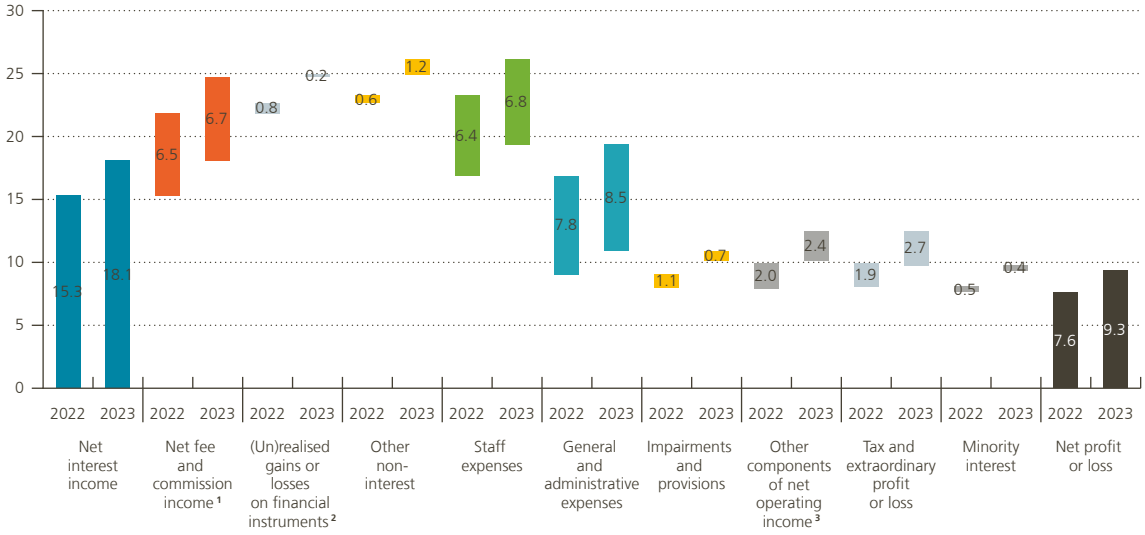
4 Other components of net operating income comprise the share in profit or loss of associates and joint ventures accounted through the equity method, and the profit or loss from non-current assets, disposal groups classified as held for sale not qualifying as discontinued operations, and the negative goodwill recognised immediately in profit or loss.

5 As from 2020, some specific expenses have to be booked separately in the prudential reporting, which has resulted for some banks in a shift of these expenses between several lines of the income statement resulting in a breach in non-interest income, other non-interest income, total operating income, general and administrative expenses and total operating expenses.

Figure B15

Main components of the income statement in 2023 compared to 2022

(consolidated data, in € billion)



Source: NBB.

1 Including commission paid to bank agents.

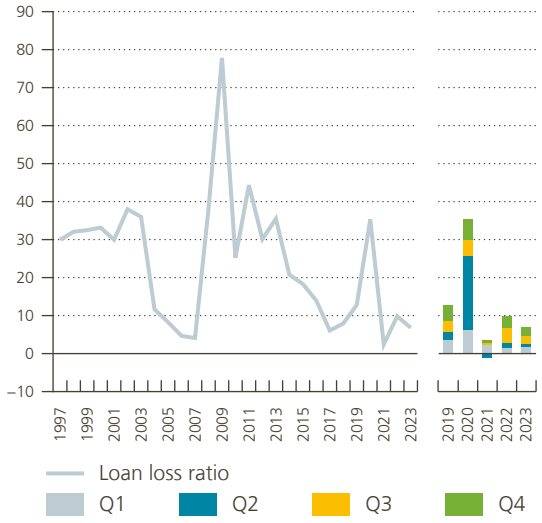
2 This item includes the net realised gains or losses on financial assets and liabilities not measured at fair value through profit or loss, the net gains or losses on financial assets and liabilities held for trading and designated at fair value through profit or loss, and the net gains or losses from hedge accounting.

3 Other components of net operating income comprise the share in profit or loss of associates and joint ventures accounted for using the equity method, and the profit or loss from non-current assets, disposal groups classified as held for sale not qualifying as discontinued operations, and negative goodwill recognised immediately in profit or loss.

Figure B16

Loan loss ratio [1]

(consolidated data, 1997-2023, in basis points)



Source: NBB.

1 The loan loss ratio is the net flow of new impairments for credit losses, express as a percentage of the total stock of loans.

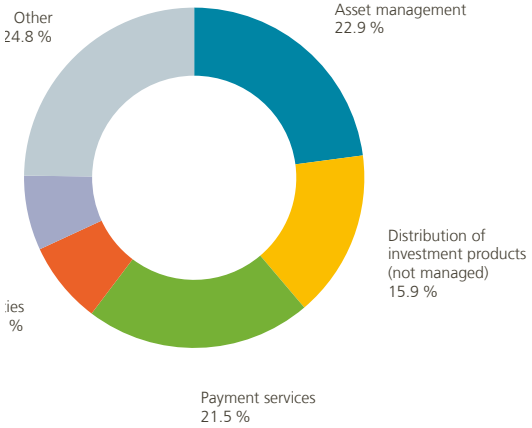
Figure B17

Breakdown of gross fee and commission income by source and assets involved in the services provided

(consolidated data)

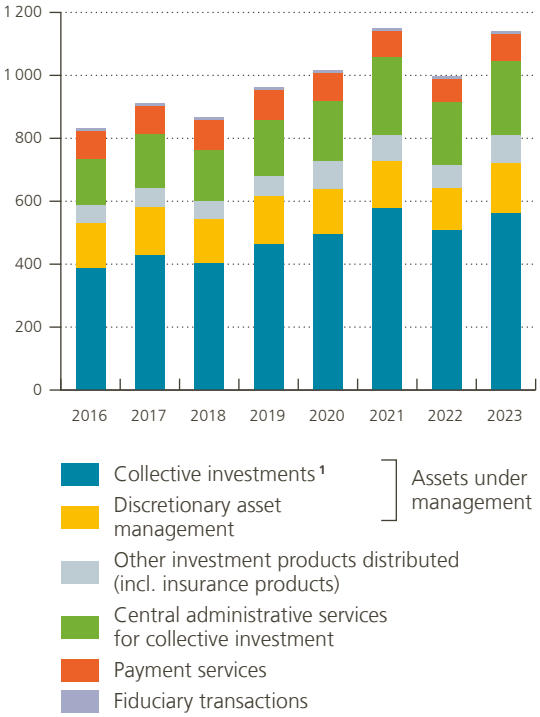
Breakdown of gross fee and commision income by source

(2023, in % of total)



Assets involved in the services provided (excluding custody)

(end-of-period data, in € billion)



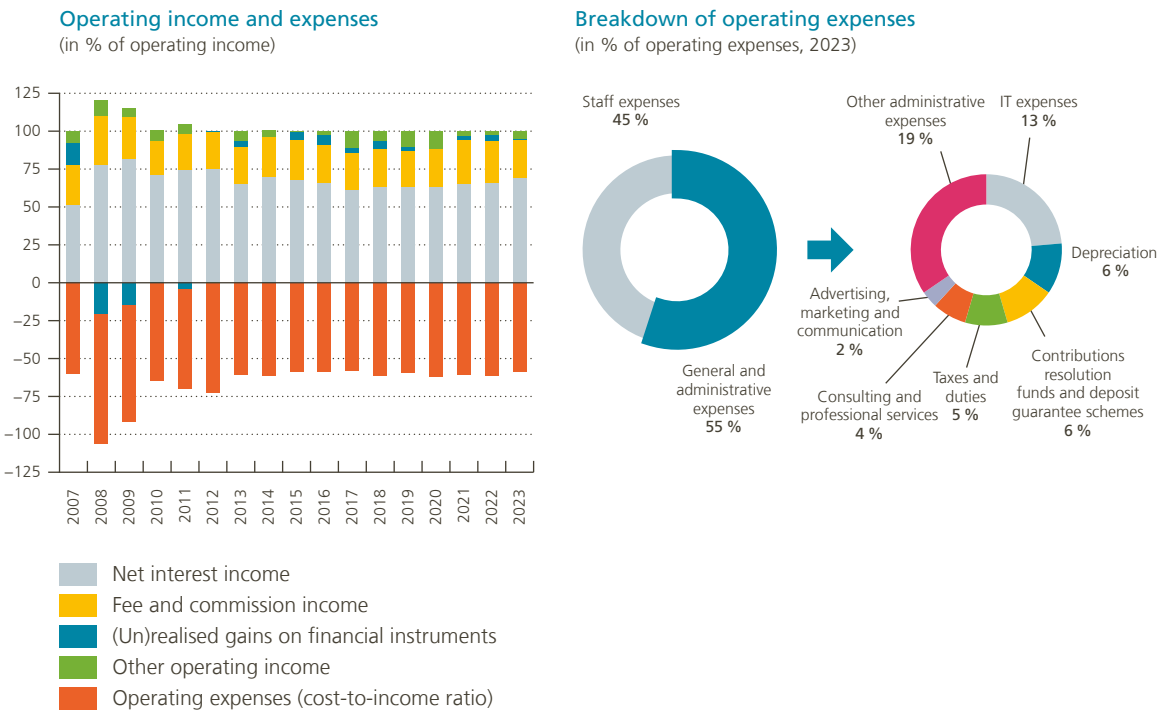
Source : NBB.

1 Collective investment products either managed by the banks (and their subsidiaries) themselves or sourced from other parties and distributed to their clients.

Figure B18

Operating income and operating expenses

(consolidated data)

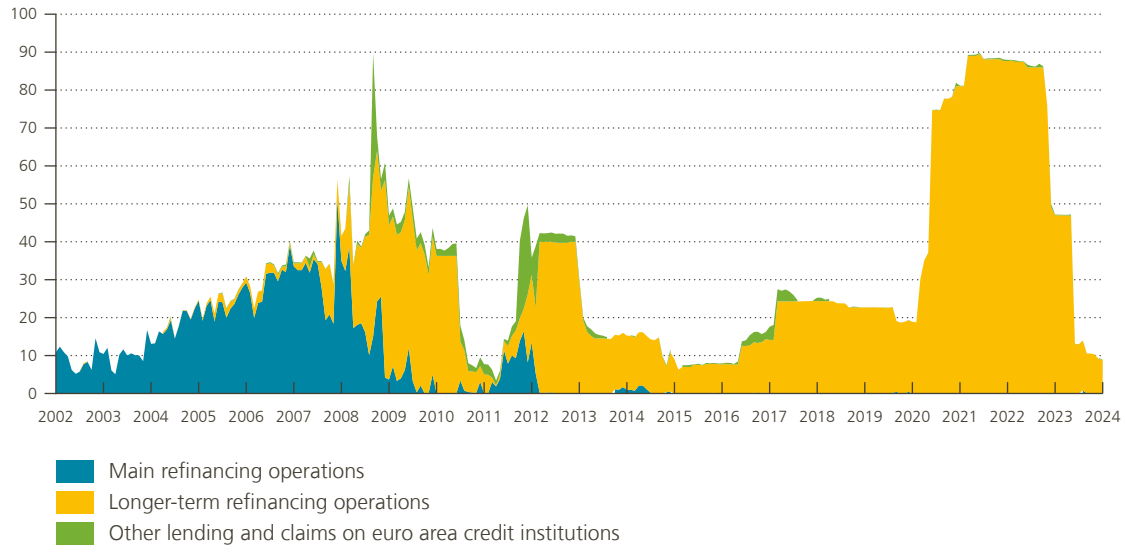


Source: NBB.

Figure B19

National Bank of Belgium's claims on euro area credit institutions

(consolidated end-of-period data, in € billion)



Source: NBB.

Table B20

Liquidity ratios

(consolidated end-of-period data; in € billion, unless otherwise mentioned)

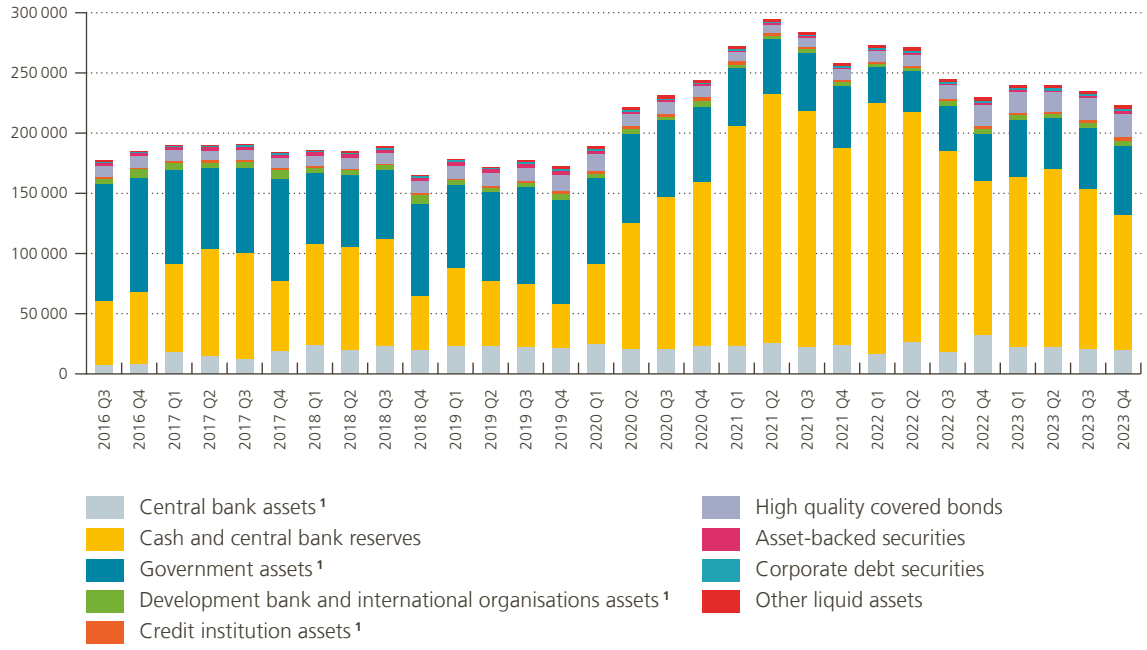
	2017	2018	2019	2020	2021	2022	2023
Customer loan-to-deposit ratio (in %)	**95.5**	**97.5**	**95.9**	**89.0**	**89.6**	**92.0**	**93.9**
Customer loans	590	619	649	648	679	729	740
Customer deposits	618	634	677	728	758	793	788
Liquidity coverage ratio (in %)	**137.2**	**144.6**	**140.5**	**181.6**	**184.3**	**157.7**	**153.3**
Liquidity buffer	183	165	172	244	257	231	223
Net liquidity outflows	134	114	122	134	140	146	145
Asset encumbrance ratio (in %)	**12.5**	**13.2**	**12.1**	**17.1**	**17.9**	**12.7**	**13.3**
Encumbered assets and re-used collateral	132	141	137	205	217	154	165
Total assets and collateral received	1 056	1 065	1 128	1 194	1 212	1 213	1 233
Net stable funding ratio (in %)	–	–	–	–	**141.7**	**133.0**	**127.1**
Available stable funding	–	–	–	–	787	731	727
Required stable funding	–	–	–	–	556	549	572

Source: NBB.

Figure B21

Breakdown of the liquid assets buffer

(consolidated end-of-period data, in € billion)



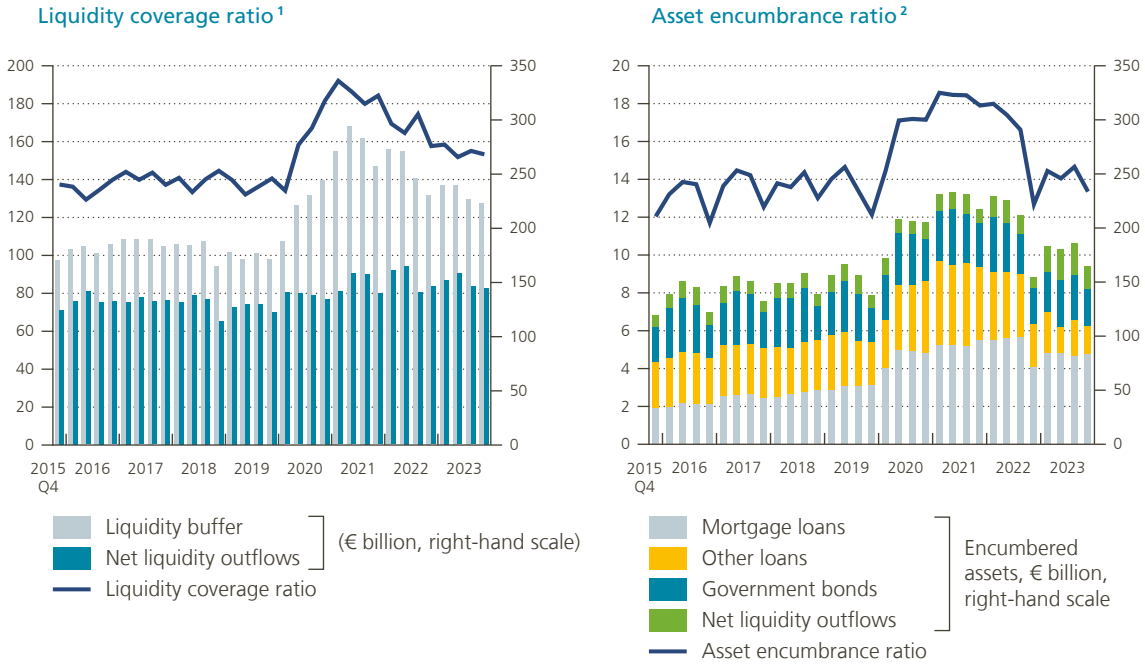
Source: NBB.

1 Assets representing claims on or guaranteed by these entities.

Figure B22

Liquidity coverage ratio and asset encumbrance ratio

(consolidated end-of-period data, in % unless otherwise mentioned)



Source: NBB.

1 Ratio between the stock of high-quality liquid (unencumbered) assets and the simulated net cash outflows in a hypothetical 30day stress scenario.

2 Ratio between the total encumbered assets (including collateral received and reused) and the total assets (including collateral received.

Table B23

Solvency ratios and breakdown of capital and risk-weighted assets

(consolidated end-of-period data; in € billion, unless otherwise stated)

	2017	2018	2019	2020	2021	2022	2023
Total own funds	71.0	71.8	73.7	79.4	77.6	75.3	75.9
of which:							
Tier 1 capital	63.3	63.1	65.4	71.1	71.4	69.3	69.3
of which:							
Common equity Tier 1 capital	60.6	59.7	61.1	66.9	67.0	65.1	64.8
Additional Tier 1 capital	2.7	3.3	4.3	4.3	4.4	4.3	4.5
Tier 2 capital	7.7	8.7	8.3	8.2	6.2	6.0	6.6
Risk-weighted assets	373.0	382.5	392.6	389.0	378.5	375.3	387.0
of which:							
Credit risk	315.3	315.9	322.2	321.0	317.1	327.5	334.3
Market risk	7.3	7.2	6.1	6.0	5.7	7.9	6.3
Operational risk	36.7	38.6	38.4	37.9	35.0	35.4	38.8
CVA [1]	4.3	4.5	3.9	3.1	2.2	1.7	1.9
Other	9.5	16.4	21.9	21.0	18.5	2.8	5.7
of which:							
Additional stricter prudential requirements based on Article 458 [2]	9.2	16.1	17.0	17.5	18.2	0.0	0.0
Total solvency ratio (in %)	19.0	18.8	18.8	20.4	20.5	20.1	19.6
Tier 1 capital ratio (in %)	17.0	16.5	16.7	18.3	18.9	18.5	17.9
Common equity Tier 1 ratio phased-in (in %)	16.2	15.6	15.6	17.2	17.7	17.3	16.7
Common equity Tier 1 ratio fully-loaded (in %)	15.9	15.6	15.6	17.2	17.7	17.3	16.7
Leverage ratio phased-in (in %)	5.9	5.9	5.8	6.7	6.4	5.7	5.7

Source: NBB.

1 Credit valuation adjustment.

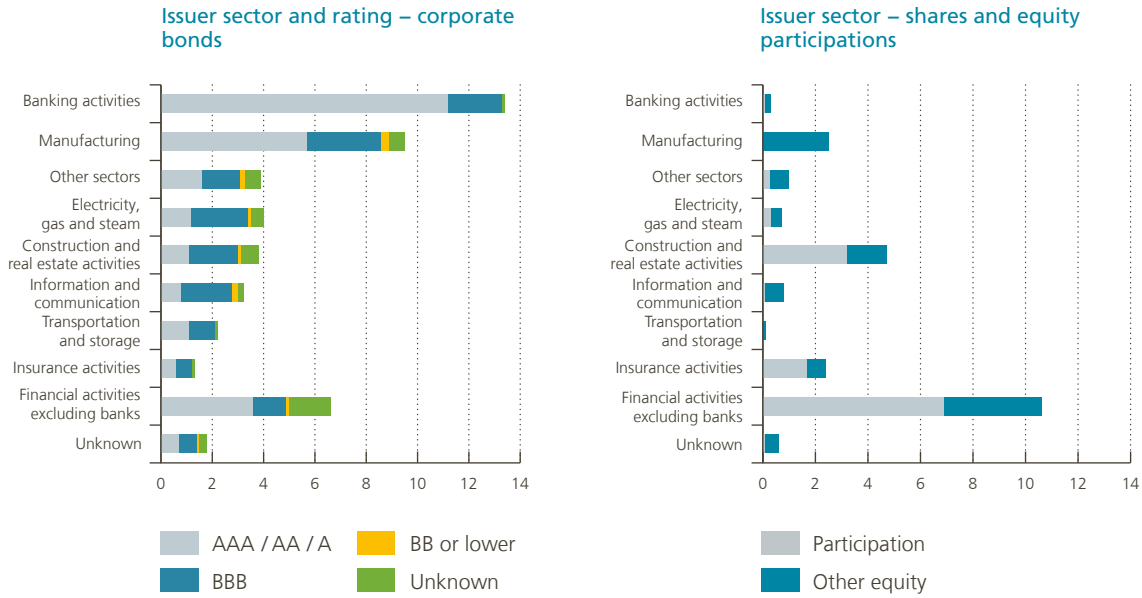
2 Additional stricter prudential requirements based on Article 458 of the Capital Requirements Regulation due to modified risk weights for targeting asset bubbles in the residential and commercial property markets.

5.2 Insurance sector

Figure I1

Breakdown of corporate bonds and equity holdings portfolio by sectors

(non-consolidated Solvency II data for the end of 2023, at market value, in € billion)

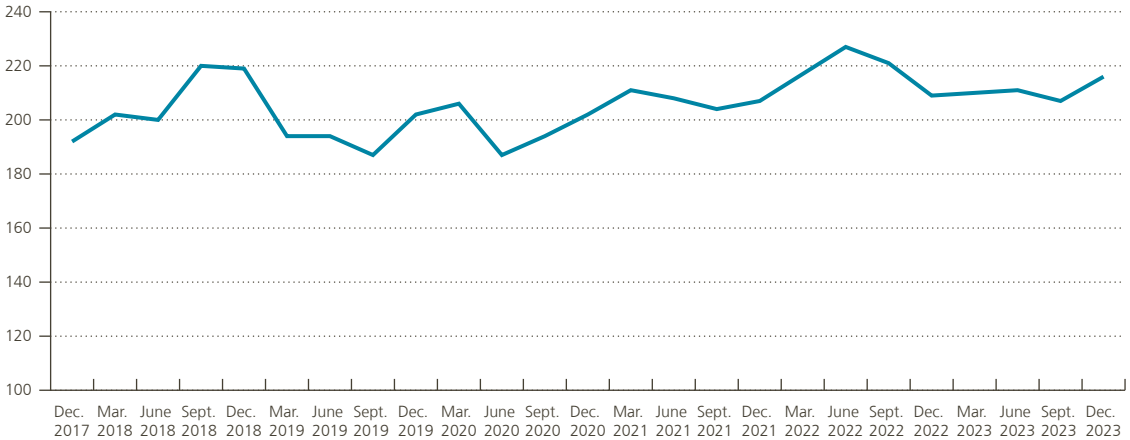


Source: NBB.

Figure I2

Solvency capital requirement ratio (SCR ratio)

(Solvency II data, in %)

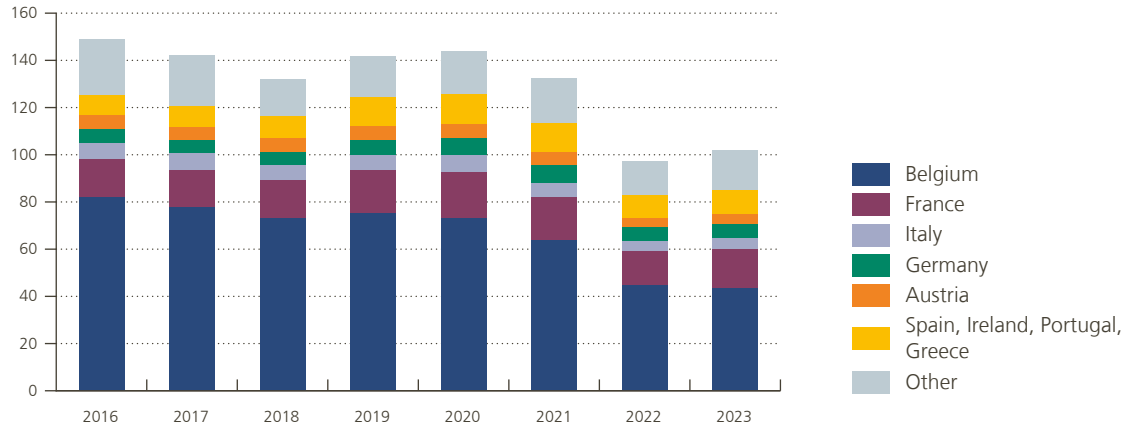


Source: NBB.

Figure I3

Geographical breakdown of public sector bonds

(non-consolidated end-of-period Solvency II data, at market value, in € billion)

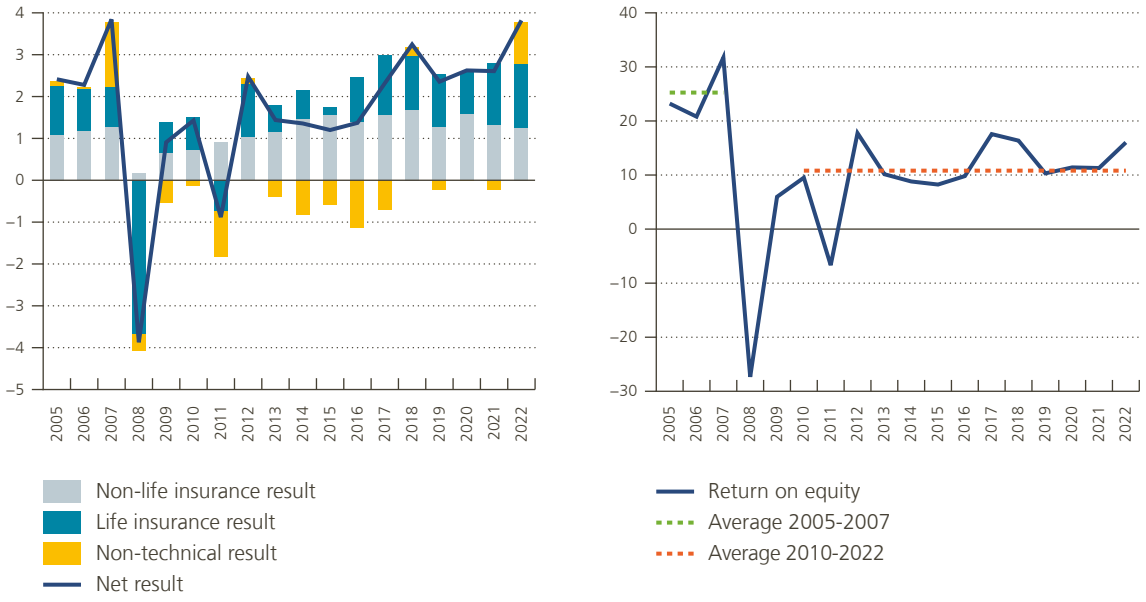


Source: NBB.

Figure I4

Net results and return on equity[1]

(non-consolidated end-of-period data based on annual statutory accounts; in € billion; return on equity in %)



Source: NBB.

1 At the cut-off date of this report, 2023 BGAAP data were not yet available.

Table I5

Main components of the profit and loss account[1]

(non-consolidated end-of-period data based on annual statutory accounts, in € billion)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Life insurance technical result	0.7	0.7	0.2	1.1	1.4	1.3	1.3	1.0	1.5	1.5
Result of insurance activities	–8.2	–9.3	–8.3	–7.3	–6.1	–2.5	–9.0	–5.1	–8.5	4.6
Excluding adjustments for class 23	–6.9	–7.3	–7.8	–6.5	–5.0	–4.8	–4.7	–4.5	–4.4	–7.6
Net investment income	8.9	10.0	8.5	8.4	7.5	3.7	10.3	6.1	9.9	–3.0
Excluding adjustments for class 23	7.6	8.0	8.0	7.6	6.4	6.1	6.0	5.4	5.5	4.6
Non-life insurance technical result	1.2	1.5	1.6	1.4	1.6	1.7	1.3	1.6	1.3	1.3
Result of insurance activities	–0.1	0.2	0.3	0.1	0.4	0.6	0.1	0.8	0.3	0.1
Net investment income	1.2	1.3	1.3	1.3	1.2	1.1	1.2	0.8	1.1	1.1
Non-technical result[2]	–0.4	–0.8	–0.6	–1.1	–0.7	0.2	–0.2	0.0	–0.2	1.0
Net investment income	0.3	0.4	0.3	–0.2	0.4	1.0	0.6	1.0	0.8	1.5
Other results	–0.7	–1.2	–0.9	–0.9	–1.1	–0.8	–0.9	–1.0	–1.0	–0.5
Net result for the financial year	1.4	1.4	1.2	1.3	2.3	3.2	2.3	2.6	2.5	3.8

Source: NBB.

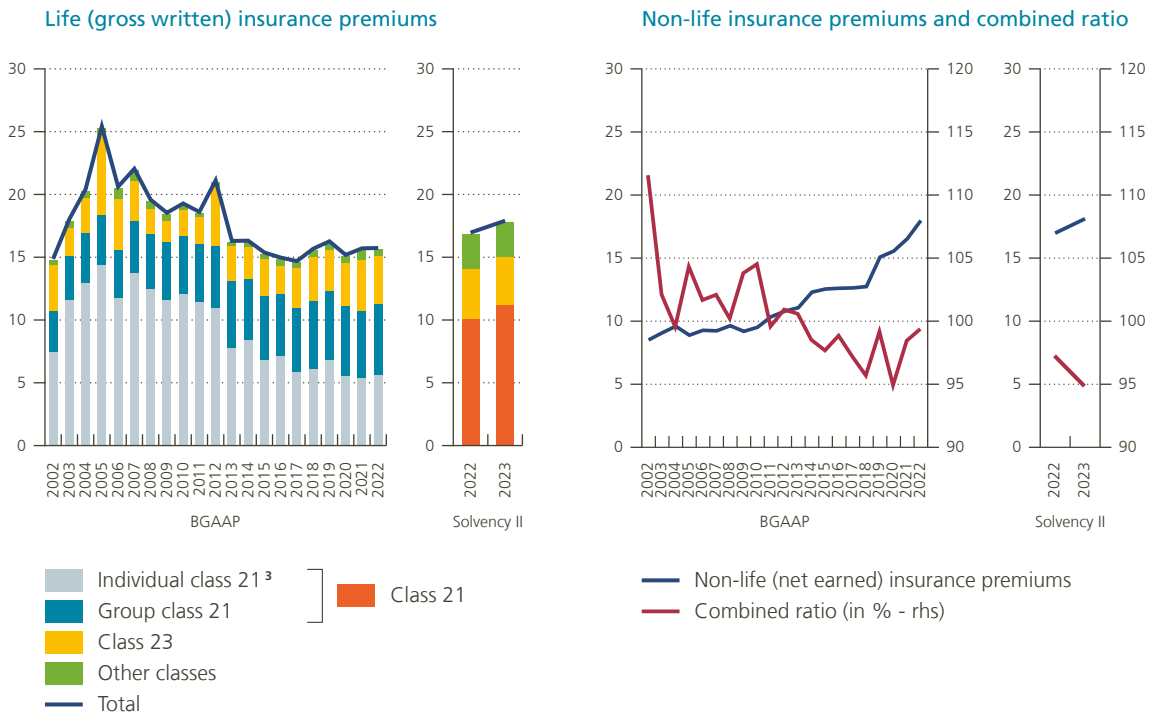
1 At the cut-off date of this report, 2023 BGAAP data were not yet available.

2 The non-technical result includes investment income not attributed to life and non-life insurance activities, exceptional results and taxes.

Figure I6

Premiums [1] and combined ratio [2]

(non-consolidated end-of-period data; in € billion, unless otherwise stated)



Source: NBB.

1 Life insurance gross written premiums under Solvency II are somewhat larger than under BGAAP because of the inclusion of some health insurance premiums (which are part of non-life premiums under BGAAP). Net earned premiums for non-life insurance differ between the two reporting formats for the same reason. This also applies to the combined ratio, for which the formula calculation has been adapted to the available data in Solvency II. At the cut-off date of this report, 2023 BGAAP data were not yet available.

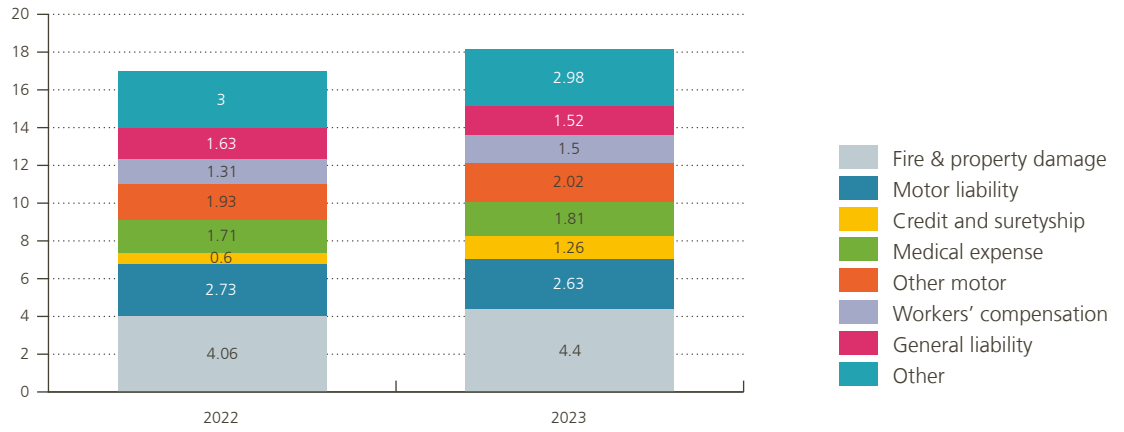
2 The combined ratio expresses the sum of the cost of claims plus operating expenses relative to net premium income. At the cut-off date of this report, 2023 BGAAP data were not yet available.

3 Class 21 products are life insurance contracts with minimum guaranteed rates of return, while class 23 refers to unit-linked or index-linked contracts. At the cut-off date of this report, 2023 BGAAP data were not yet available.

Figure I7

Breakdown of non-life insurance net written premiums

(non-consolidated end-of-period Solvency II data, at market value, in € billion)

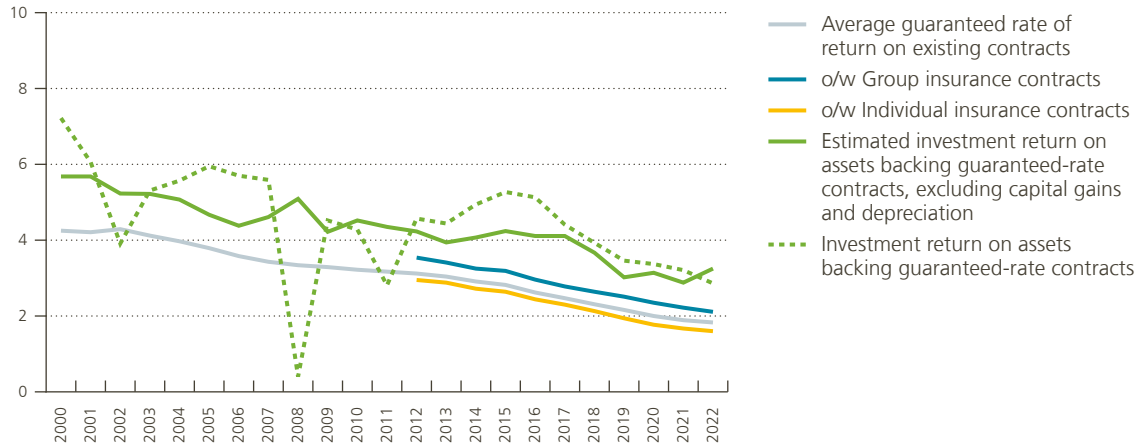


Source: NBB.

Figure I8

Life insurance guaranteed rates and investment returns

(non-consolidated end-of-period data based on annual statutory accounts; in %)



Source: NBB.

1 At the cut-off date of this report, 2023 BGAAP data were not yet available.

Table I9

Investment return and average guaranteed return in life insurance[1]

(non-consolidated end-of-period data based on annual statutory accounts; in € billion, unless otherwise stated)

	2018	2019	2020	2021	2022
Investment return on assets backing guaranteed-rate contracts (in %)	3.93	3.46	3.37	3.21	2.86
Estimated investment return on assets backing guaranteed-rate contracts, excluding capital gains and depreciation (in %)	3.67	3.02	3.14	2.88	3.25
Average guaranteed rate of return on existing contracts (in %)	2.31	2.16	2.00	1.89	1.83
■ group insurance	2.64	2.51	2.35	2.22	2.11
■ individual insurance	2.13	1.94	1.77	1.67	1.60
Yield gap	1.62	1.30	1.37	1.32	1.03
Flashing-light provision	7.5	7.4	7.6	7.2	7.2
Flashing-light rate (in %)	0.74	0.49	0.33	0.25	0.39

Source: NBB.

1 At the cut-off date of this report, 2023 BGAAP data were not yet available.

Thematic articles

Orderly downturn of the Belgian residential real estate market reduced financial stability risks

Introduction

The residential real estate market plays a significant role in the Belgian economy and the Belgian financial system, given its interconnectedness with financial institutions, households and the real economy. Past financial crises have shown that unsustainable developments in residential real estate markets can give rise to vulnerabilities and crises in the financial sector and, therefore, close monitoring and – if necessary – macroprudential measures are required to identify and address emerging or existing imbalances. This article reviews and assesses recent developments in the Belgian residential real estate market and provides an update of the analyses included in the Bank's Financial Stability Report biannually since 2012. Section 1 covers developments in the housing market (including the transaction volume and house prices) and discusses challenges related to the energy efficiency of the housing stock. Section 2 focuses on recent dynamics in new mortgage lending and credit standards at origination (e.g. maturity and the loan-to-value ratio). Finally, section 3 looks at household debt, including developments in vulnerable segments of the mortgage stock and in credit quality.

Since the last update, set out in the Financial Stability Report 2022, the Belgian residential real estate market has experienced an orderly downturn. After several years of strong activity, the market peaked in mid-2022 and has since – due to the rapid increase in mortgage rates – slowed significantly, with a lower number of transactions and reduced volume of new mortgage loans. However, the slowdown has been orderly, as shown for instance by the absence of large corrections in house prices and the continued low level of mortgage defaults. Nominal house price growth decelerated in 2023 but remained positive. The price difference between energy-efficient and energy-intensive houses widened further, however, and the required in-depth energy renovation of the Belgian housing stock will create many challenges and in turn give rise to climate-related transition risks in the financial sector.

Longer maturities helped to preserve borrowing capacity and thus contributed to offsetting a portion of the interest rate shock for new mortgage borrowers. This lengthening of maturities was possible thanks to the room created around 10 years ago when Belgian banks significantly reduced their share of new loans with (very) long maturities, after which time they continued to keep maturity standards tight in the low interest rate environment. For existing mortgage loans, the burden of higher interest costs remained limited for Belgian households since the vast majority of these loans have an interest rate that is fixed for the entire maturity of the loan. In addition, the sharp rise in nominal personal income, due among other factors to automatic wage indexation in Belgium, helped alleviate the burden of existing fixed-rate debt for households and preserve borrowing capacity of new borrowers. After four years of successful application of the Bank's prudential expectations for new mortgage loans, the risks in the mortgage stock have substantially decreased. As a result, and given the orderly downturn observed in the residential real estate market, the Bank decided to revise downwards the macroprudential capital buffer for residential real estate risks in the banking sector.

1. Housing market developments and challenges related to energy efficiency

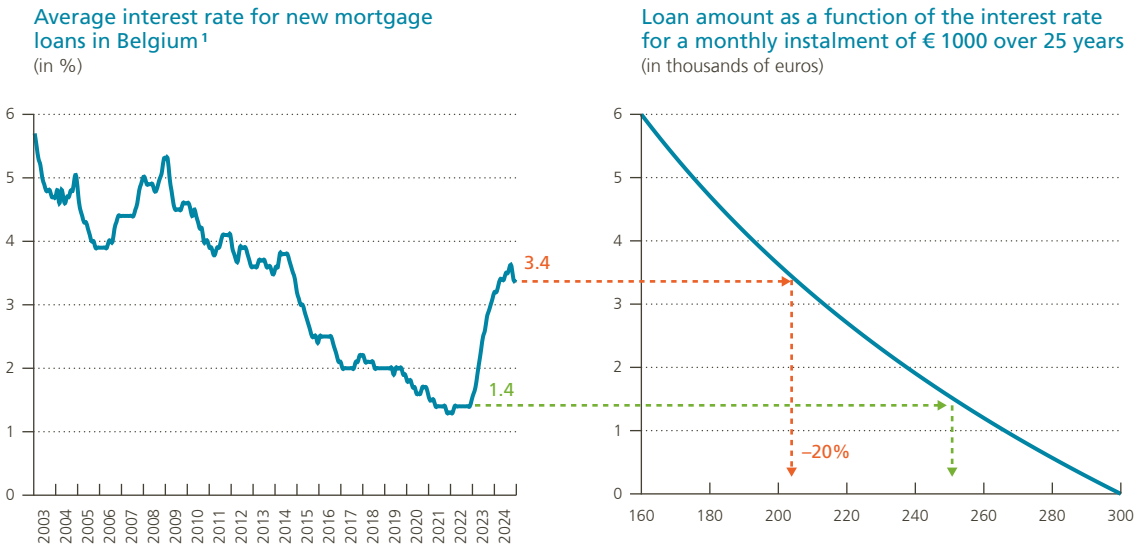
Activity in the residential property market slowed sharply as interest rates rose, but nominal house price growth remained positive

The increase in the Eurosystem's key rates, which began in the summer of 2022 in response to the surge in inflation, pushed up the interest rates charged by Belgian banks on new mortgage loans. In particular, rates for new fixed-rate mortgages rose from an average of 1.4 % in January 2022 to 3.4 % in February 2024 (Figure 1, left-hand graph). The sharp rise in mortgage rates means that, for the same monthly instalment and maturity, the amount households can borrow is about 20 % lower than at the start of 2022 (Figure 1, right-hand graph), which has had a negative impact on housing demand. In addition, the rise in interest rates is also likely to have weakened demand for investment property, which had been high in previous years due to low rates and a resulting search for yield. However, the negative effects of the rise in interest rates on house prices were largely offset by longer maturities for new mortgages (see section 2, Figure 7) and by the significant increase in household income, which pushed up the amount households can borrow to purchase a home.

After two years of intense activity, the number of transactions involving existing homes fell sharply. In the first three quarters of 2023, the number of residential property transactions fell by 18 % compared with the same period in 2022 and by 7 % compared with 2019 (Figure 2, left-hand graph). While all regions and types of housing were affected, this fall in the number of transactions mainly concerned houses and the Flemish Region. In Flanders, this was probably due to the fact that sales of certain homes with an EPC rating of E or F were moved forward at the end of 2022, so as not to fall under the energy renovation obligation that entered into force in the region on 1 January 2023, requiring such dwellings to have an EPC rating of at least D (see below).

Figure 1

Average interest rate for new mortgage loans and the borrowed amount as a function of the interest rate (for the same monthly instalment and maturity)



Source : NBB.

1 New mortgage loans with initial interest rate fixation of more than 10 years.

Moreover, new data on the buyer profile of sold existing dwellings in the Flemish Region since 2018[1] show that, in 2022 and 2023, the share of existing homes sold to investors was about a fifth lower than in the preceding years. This is to an important extent also the result of the increase in transaction taxes for second homes in the region since 2022 (but could possibly be partially counterbalanced by an increased share of investors in the new-build market).

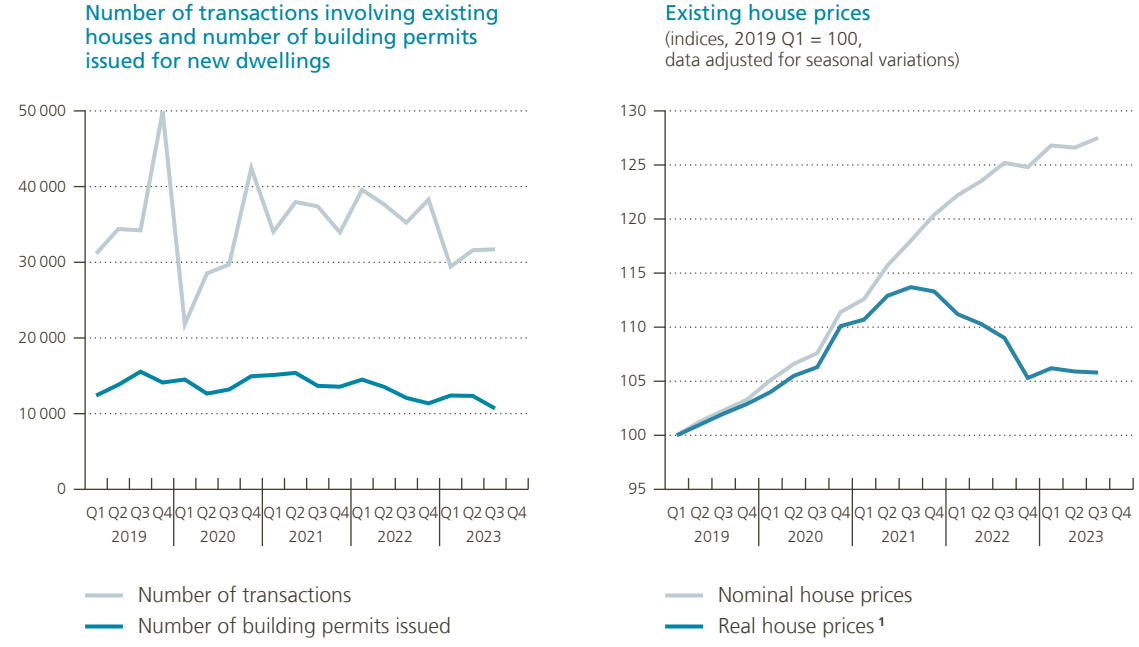
Activity on the new-build market also contracted sharply, with rising construction costs compounding the effects of higher interest rates. For example, in 2023, the share of new properties in total apartment sales was a third lower than in 2021. Household investment in housing also continued to fall in 2023. Finally, forward-looking indicators point to a further slowdown in expansion of the housing stock. Indeed, the number of building permits granted for new residential dwellings in the first three quarters of 2023 was down by 20 % compared with the corresponding period in 2021 (Figure 2, left-hand graph), while order books and demand expectations in the structural building works sector also deteriorated significantly. This slowdown on the new-build market was due not only to the rise in interest rates, but also to the sharp increase in construction costs, which have jumped by 22 % from the beginning of 2021.

Growth in existing house prices slowed in the first three quarters of 2023, but remained positive. After rising strongly, by 7 % annually on average from 2020 to 2022, nominal house prices climbed by 2.7 % year-on-year in the first three quarters of 2023. Despite this significant loss of momentum, price growth was more robust in Belgium than in neighbouring countries, with strong price declines being recorded in the Netherlands (–2.8 %), Luxemburg (–7.2 %) and Germany (–8.9 %), as well as the euro area as a whole (–1.1 %). However, house prices in real terms, which take into account the high inflation seen in recent years, fell by 6.4 % in the first three

1 Vlabel – Steunpunt Wonen dataset; Vastmans *et al.* (2023), "Heroriëntatie van de Vlaamse Woonlening. Een ex-ante evaluatie", Steunpunt Wonen.

Figure 2

Transactions, building permits and house prices



Sources: Statbel, NBB.

1 Deflated by the private consumption deflator.

quarters of 2023 compared with the end of 2021. Finally, nominal price growth was stronger in the Flemish Region (3.4 %) than in the Walloon Region (2.0 %) and the Brussels-Capital Region (–1.5 %), but the figures for Flanders somewhat overstate the actual increase for an identical dwelling as sales of energy-inefficient homes were probably weaker than usual.

Prices for new homes rose more than for existing homes. In the first nine months of 2023, sales prices for new homes rose by 4.9 % year-on-year. This was due to the significant rise in construction costs and possibly increased demand for energy-efficient homes, owing to high energy prices and the introduction or announcement of increasingly stringent renovation obligations (see below). Finally, rising prices for new properties sustained demand for existing homes, which act as substitutes.

Finally, the price difference between energy-efficient and energy-intensive houses widened further due to the energy crisis and an increase in renovation costs, coupled with the introduction or announcement of energy renovation obligations. Using a unique dataset merging all Belgian residential real estate transactions and the energy performance certificates (EPCs) of these properties, a 2022 study by the Bank revealed that the price difference between energy-efficient and energy-intensive housing increased over the period 2012-2021, reflecting a growing awareness of the importance of energy efficiency by buyers and sellers, real estate appraisers, brokers and financial institutions.[2] More recent estimates for the Flemish Region based on a smaller dataset of houses sold via the ERA realtor network show a further widening of this price difference in 2022 and 2023, driven by the recent energy crisis, an increase in renovation costs and the introduction or announcement of energy renovation obligations, including the obligation to obtain an EPC rating of at least D within five years from the purchase of the property for homes sold as from January 2023 in the Flemish Region. In 2023, a home with an EPC rating of E in Flanders was estimated to cost about 7 % more than a similar dwelling with an EPC rating of F (corresponding to an EPC score of more than 500 kWh/m²). This estimated energy-efficiency price premium rises to 13 %, 18 %, 26 % and 33 % for homes with an EPC rating of D, C, B and A, respectively. The larger price difference implies that buyers of energy-intensive houses can reserve more of their budget to carry out renovation works, even though the overall affordability of owner-occupied houses has deteriorated in recent years.

The decarbonisation of the housing stock is a huge challenge and gives rise to transition risks in the financial sector

Decarbonising homes (and other buildings) is an important part of achieving the Belgian and European objective of climate neutrality by 2050. In 2021, residential buildings accounted for 21 % of energy consumption and 15 % of direct greenhouse gas (GHG) emissions in Belgium, with 75 % of this residential consumption attributable to heating. GHG emissions from heating are higher in Belgium than in most other European countries with a similar climate, which can be explained by the fact that Belgian homes are, on average, larger and older.

The three regions have set themselves the target of moving towards an energy-efficient housing stock by 2050 and have introduced or announced increasingly stringent renovation requirements as a key policy lever to achieve this goal. The three regions have set themselves the target of moving towards an energy-efficient housing stock by 2050, with an average EPC score of 100 kWh/m² for the Flemish and Brussels-Capital Regions and 85 kWh/m² for the Walloon Region. Only the Walloon Region currently specifies that residual energy requirements must be carbon-free. To achieve this objective, minimum energy performance standards play an important role. Firstly, the Flemish and Walloon Regions have announced increasingly stringent standards for new homeowners, which will have to be achieved within five years from the purchase of the property. The initial obligation to achieve at least an EPC rating of D, which is already in force for homes sold as from January 2023 in the Flemish Region and announced for 2026 in the Walloon Region, will be progressively tightened to an EPC rating of A (corresponding to an EPC score of 100 kWh/m² in Flanders and 85 kWh/m² in Wallonia) from

2 P. Reusens, F. Vastmans and S. Damen (2022), "The impact of changes in dwelling characteristics and housing preferences on Belgian house prices", NBB, *Economic Review*.

2040-2045. The three regions have also announced increasingly stringent minimum energy performance standards for all dwellings, imposing a maximum EPC score of 300 kWh/m² in Flanders, 170 kWh/m² in Wallonia and 150 kWh/m² in the Brussels-Capital Region from 2040-2050.

This in-depth energy renovation of the Belgian housing stock, within a limited timeframe, will require huge investment and will come up against major obstacles on both the demand and supply sides. The vast majority of existing homes will need to undergo an energy renovation by 2050 in order to meet regional energy-efficiency targets. This works out to an average of 185 000 homes per year requiring major renovation over the next 27 years. Based on estimates from previous studies[3] and taking into account the rise in the cost of building materials and labour in recent years, the investment required is estimated to be approximately € 350 billion for Belgium as a whole, or an average of € 65 000 per home (this average also includes the renovation cost of zero for homes that already have an A rating). This figure could be even higher if additional costs are included, such as interior finishing costs, house-specific costs, government administrative costs, and costs related to the management of waste (e.g. asbestos removal). In addition, energy renovations are labour-intensive and could be significantly hampered by labour shortages in the construction sector, thereby leading to higher prices and renovation costs. On the demand side, energy renovations are often not considered a priority by households. Moreover, many households are unable to finance large-scale renovations (as, for example, they already have a loan to service). Incentive mismatches may also exist between tenants and homeowners, as well as between co-owners (e.g. in apartment buildings). Finally, while improving energy efficiency is important, changing the policy mix by placing greater emphasis on the decarbonisation of heating would contribute to increasing the cost-effectiveness and speed of the climate transition.[4]

The transition risks associated with (residential) real estate are among the most relevant climate-related risks faced by the Belgian financial sector. Transition risks arise from the costs associated with the necessary transition to a more sustainable low-carbon economy and the related policy measures, such as renovation requirements or carbon taxes. Due to the size of residential real estate exposures in the Belgian financial sector and the high energy consumption and emissions of the Belgian housing stock, transition risks related to residential real estate could generate risks for financial stability. On the one hand, households with energy-inefficient homes could see their heating costs increase when energy prices rise, impacting their ability to service their (mortgage) debt. On the other hand, the value of certain properties used as collateral for mortgage loans could be affected if the necessary adjustments are not made to meet the new energy performance standards (due, for example, to a lack of financial resources to carry out renovation works). However, the recently increased price difference between energy-efficient and energy-intensive homes (see above) seems to correspond, to an important extent, to the average cost (taking into account current subsidies) of a thorough energy renovation, thereby reducing the transition risks in these cases.

The energy performance of real estate is therefore considered an important indicator for transition risk and the resulting credit risk for financial institutions. That's why the National Bank of Belgium (hereinafter "the Bank") published a circular[5] in December 2020 calling on financial institutions to gather data on the energy performance of real estate serving as collateral for residential mortgage loans (as well as for corporate loans) for all new exposures as from 2021 and for existing exposures with an indexed LTV ratio of more than 85 % as from 2017. The circular also stated that, with regard to new residential mortgage loans, financial institutions should report these data to the Bank as from 2021 and urged banks to integrate energy efficiency into their internal risk management framework. The Bank also informed the banking sector of possible improvements in the analysis and management of these transition risks.

3 M. Ryckewaert, K. Van den Houte, L. Vanderstraeten and J. Leysen (2019), "*Inschatting van de renovatiekosten om het Vlaamse woningpatrimonium aan te passen aan de woningkwaliteits- energetische vereisten*", Steunpunt Wonen; SERV (2019) "*Klimaat- en energiebeleid 2019-2024 van alfa tot omega*"; Energyville (2022), "*De snelste weg naar A: optimale Renovatiemaatregelen in het kader van de Vlaamse 2050 doelstellingen voor woningen*"; Service Public de Wallonie (2020) "*Stratégie wallonne de rénovation énergétique à long terme du bâtiment*"; Brussels-Capital Region (2019) "Energie-Klimaatplan 2030".

4 See the Bank's Annual Report 2023, Box 5: The importance of decarbonising residential heating, for a more detailed discussion on this subject.

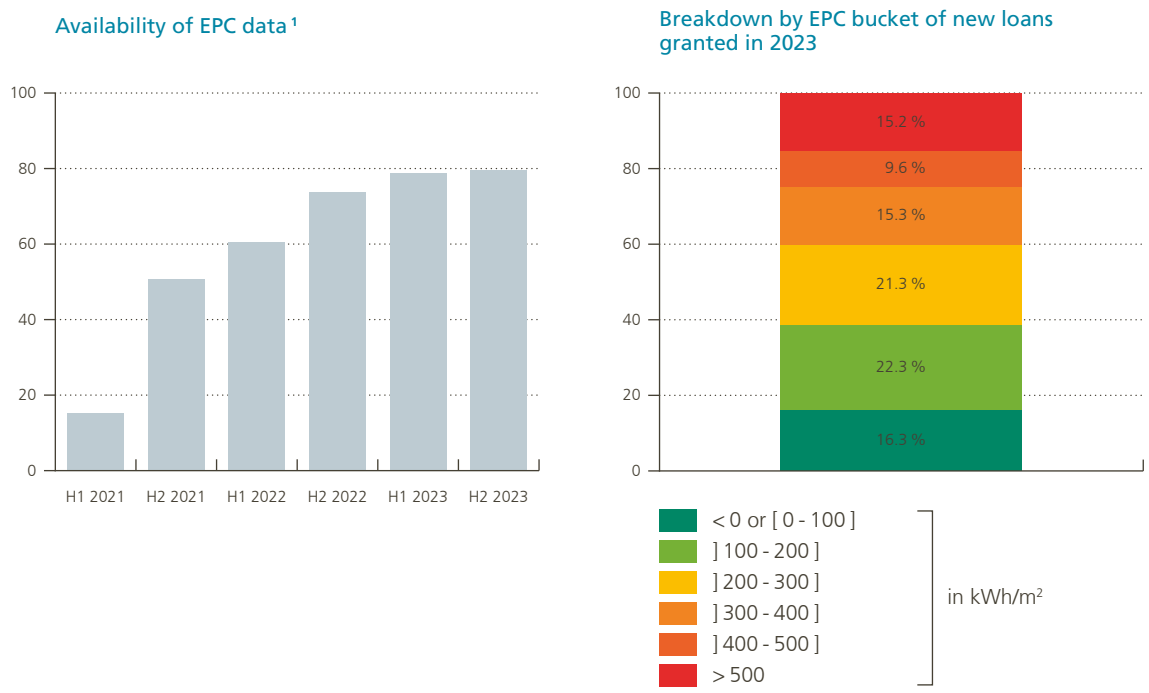
5 Circular NBB_2020_45 – Verzameling en rapportering van informatie betreffende de energie-efficiëntie van vastgoedblootstellingen (www.nbb.be) (NL – FR)

Following the publication of this circular, Belgian banks started making significant efforts to step up the collection of EPC data for new mortgage loans, resulting in improved data availability since 2021. While these data were available for 50 % of new mortgage loans in 2021, this figure rose to 74 % in the second half of 2022 and to nearly 80 % in the second half of 2023 (Figure 3, left-hand graph). This indicates that banks, too, recognise the importance of energy efficiency for transition risk. The increased availability of EPC data allows them to assess the risks related to mortgage loans for less energy-efficient houses in their portfolio and to take informed steps to reduce these risks.

Figure 3

EPC data [1] for new mortgage loans

(percentage of total loans granted in a particular vintage year)



Source: NBB mortgage lending (PHL) survey for the banking sector.

1 As per the Flemish label. As energy performance ratings are not comparable across all regions of Belgium, the energy score – an indicator that specifies the energy consumption per square meter of floor space (kWh/m²) – has been extrapolated onto the Flemish label.

The breakdown of new mortgage loans by EPC bucket shows that a large share of new mortgage loans granted by Belgian banks are for energy-inefficient properties, although some of these may be accompanied by a (planned) renovation. Whereas 38.6 % of new mortgages in 2023 related to energy-efficient dwellings with a "green" EPC rating (A or B), more than 40 % related to energy-inefficient homes with an EPC rating of D, E or F (Figure 3, right-hand graph). The transition risk related to these mortgages could materialise if borrowers face problems paying back their loan due to higher energy costs or if they are not able to make the necessary investments to improve the energy efficiency of the underlying collateral. However, contacts with the banking sector regarding these data revealed that some mortgages for energy-intensive homes are accompanied by a (planned) renovation (which may or may not be factored into the loan amount). In these cases, the borrower's energy bill will fall and the value of the collateral will rise, meaning the transition risk will be lower after the energy renovation. Since it is therefore important for the Bank to gain a better view on the purpose of these mortgages, the reporting on energy efficiency will be further refined as from 2024. In particular, banks will be

asked to specify whether a mortgage was granted solely to purchase a property, for a purchase accompanied by renovation (including a thorough energy renovation) or for a new build. This additional information will enhance the quality of the Bank's analysis of the Belgian banking sector's exposure to transition risks.

2. Recent dynamics in the mortgage market and credit standards at origination

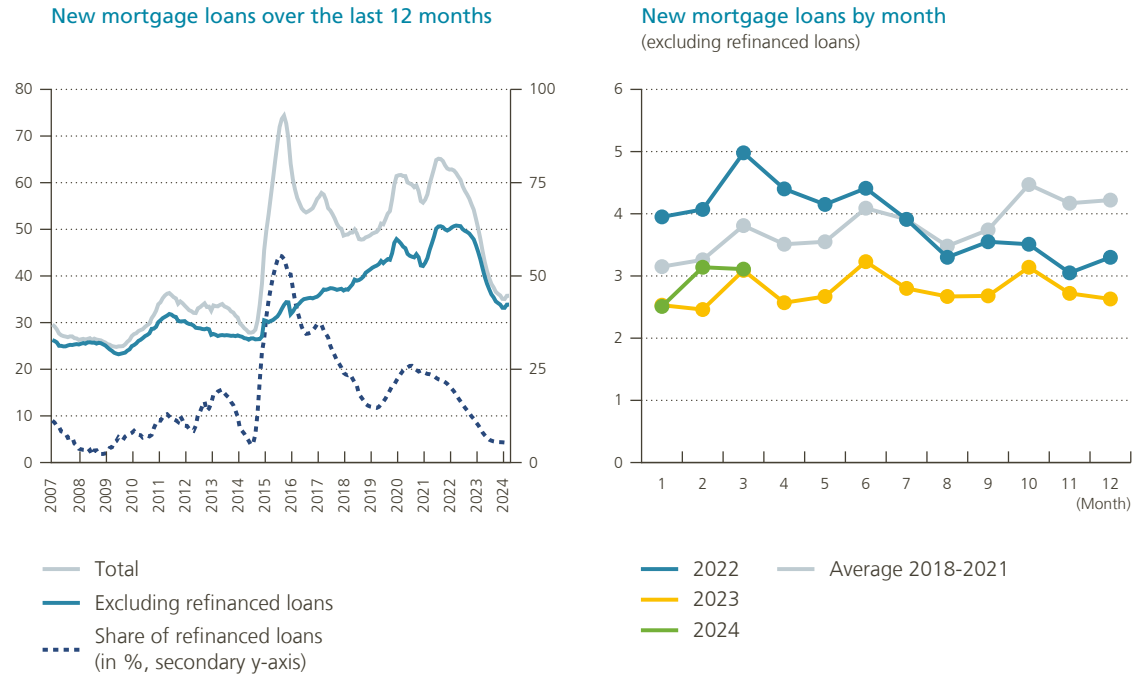
New mortgage lending decreased substantially, but to a lesser extent for young borrowers

After several years of strong activity, the volume of new mortgage loans began to decrease substantially in the second half of 2022 when mortgage rates started to rise. In 2023, the total volume of new mortgage loans was € 33 billion according to the Individual Credit Register, compared with the record level of € 50 billion in 2021 (Figure 4, left-hand graph). The decline was mainly observed in the second half of 2022, after which time monthly volumes held relatively stable albeit at much lower levels than in preceding years (Figure 4, right-hand graph). In the first quarter of 2024, there was a slight uptick in new mortgage lending compared with the first quarter of 2023, following the minor decline in long-term interest rates and mortgage rates (reflecting expectations of lower central bank rates). The volume of existing mortgages being refinanced, which is not included in these figures, also fell significantly when mortgage rates started to rise.

Figure 4

Volume of new mortgage loans[1]

(€ billion)



Source: NBB.

1 Data from the Individual Credit Register. Last observation: March 2024. Existing loans that are refinanced (either with the same lender or another one) are recorded as new contracts in the credit register but can be identified and excluded so as to focus on trends in new mortgages.

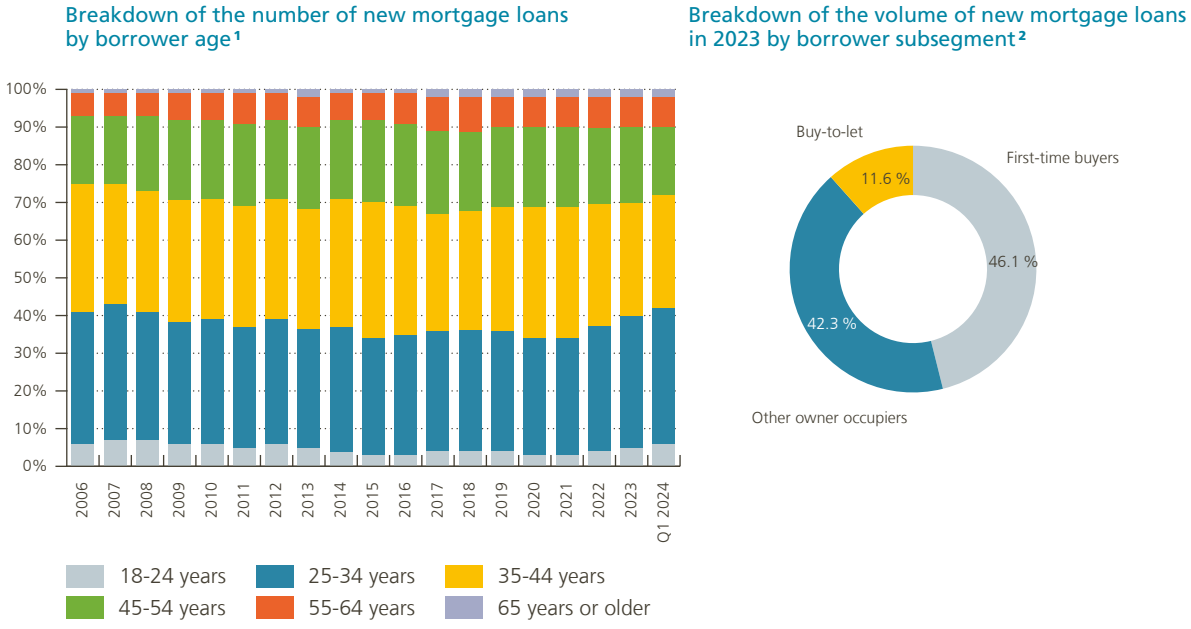
The decrease in mortgage origination was mainly due to a fall in the number of new mortgages, while the average amount borrowed appears to have reached a plateau. Mortgage lending dynamics usually closely mirror the number of transactions since most mortgages are taken out to purchase an existing property. However, the recent fall in the number of new mortgages was relatively more pronounced (around 30 % less in 2023 compared with 2022) than the decline in the number of transactions. Taking out a new mortgage to purchase a home is now more expensive than at any time in the past decade. Therefore, households with an existing mortgage that wish to purchase a new home prefer to keep, insofar as possible, their existing mortgage with its low interest rate and swap the property used as collateral for the loan (i.e. replace their existing home with the new one, with the lender's approval). As a result, if a mortgage is still outstanding at the time of purchasing a new home, the borrower's preferred option is often to keep the existing loan and, if necessary, only borrow the additional amount required. In the past, when interest rates were declining, households with an existing mortgage that bought a new property were more likely to replace their existing mortgage with a new loan in order to benefit from a lower interest rate for the entire amount. Lately, households, especially those purchasing buy-to-let properties, may also be less inclined to borrow, drawing on their available cash to finance the purchase. According to the responses of Belgian banks to the Bank Lending Survey, other sources of funds, such as savings or gifts from family members, have been used more often since 2022. Lastly, the number of mortgages taken out for renovation and construction purposes fell significantly more than the number taken out to purchase an existing home, adding to the observed larger decrease in new mortgage loans relative to transactions in existing houses.

Young borrowers and first-time buyers remain well represented in the market, despite the general decline in new mortgage loans. The share of young borrowers has increased recently, indicating that they were less impacted by the decline in mortgage lending than other types of borrowers. A breakdown of the number of new loans by borrower age shows that the share of borrowers below the age of 35 rose to 40 % recently,

Figure 5

Borrower subsegments and age

(percentage of total loans granted in a particular vintage year)



Source : NBB.

1 These data are sourced from the Individual Credit Register.

2 These data relate to mortgage loans granted in 2023 by the banking sector (including refinancings).

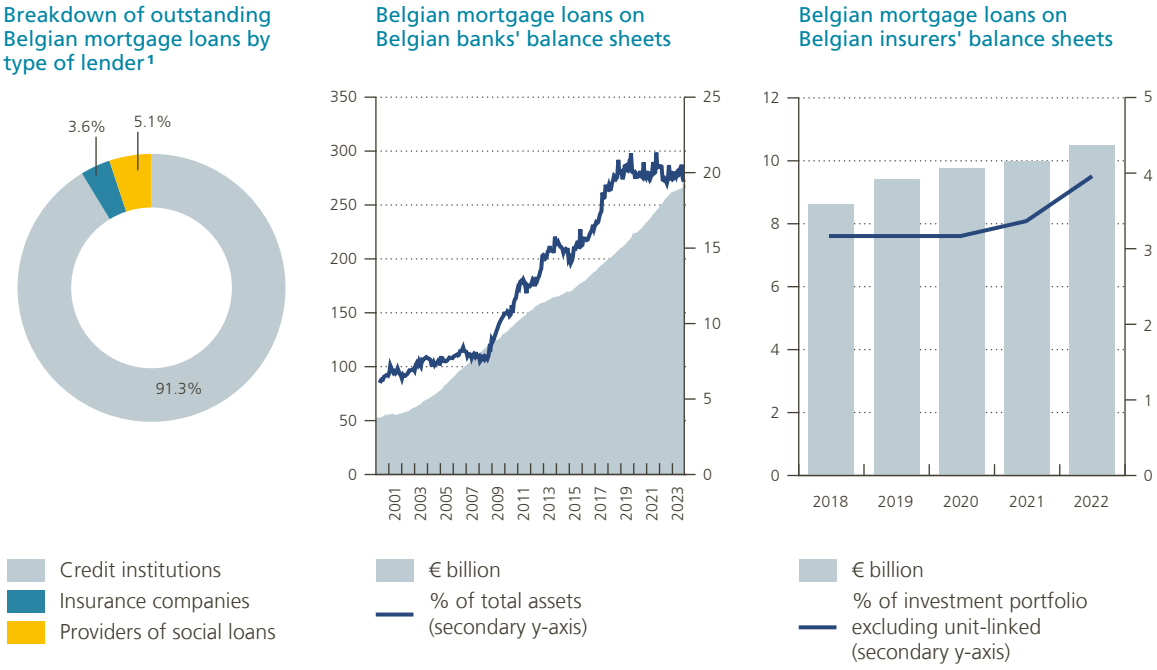
whereas it was around 35 %-36 % in the period 2015-2021 (Figure 5, left-hand graph). Loans to first-time buyers accounted for not less than 46 % of the total volume of new mortgages granted in 2023, i.e. a larger share than to other owner occupiers (Figure 5, right-hand graph). On the one hand, this was due to the reduced presence of other types of borrowers on the mortgage market (as, for example, existing homeowners now prefer to maintain, insofar as possible, an outstanding loan when buying a new home). On the other hand, financial institutions particularly supported this group of borrowers by allowing a high share of new loans with longer maturities. In 2023, 72 % of mortgages granted to first-time buyers had a maturity of more than 20 years, compared with 59 % in 2021 (see below, Figure 7, right-hand graph). The observation that young people remain well represented in the housing market is also confirmed by new data on the buyer profile of sold existing dwellings in the Flemish Region since 2018, [6] which show that the share of young buyers (i.e. below the age of 35) has not decreased and equaled the average of the preceding years.

The vast majority of new mortgages are granted by Belgian banks, which are still the largest players on the Belgian mortgage market. According to data from the financial accounts, around 91 % of mortgage loans granted to Belgian residents are on the balance sheets of banks, predominantly Belgian banks (Figure 6, right-hand graph). Foreign banks, either operating on a cross-border basis or through branches, account for only a very small share of Belgian residents' outstanding mortgage loans. The remainder is shared between insurance companies (around 4 %) and providers of social loans (around 5 %). These shares have remained quite stable over the past few years.

6 Vlabel – Steunpunt Wonen dataset; Vastmans *et al.* (2023), "Heroriëntatie van de Vlaamse Woonlening. Een ex-ante evaluatie", Steunpunt Wonen.

Figure 6

Main players on the mortgage market [1]



Source: NBB.

1 Breakdown of outstanding Belgian mortgage loans by type of lender, based on data from the financial accounts (September 2023).

Belgian mortgage loans represent an important share of the assets of Belgian financial institutions, which are therefore exposed to shocks to this market. By the end of 2023, the Belgian mortgage loans on the balance sheets of Belgian banks totalled € 268 billion or 20 % of their total assets (Figure 6, middle graph). This exposure has almost continuously risen since 2008 but has recently stabilised. For Belgian insurance companies, exposure to Belgian mortgage loans also rose steadily over the past years to € 11 billion in 2022 or 4 % of the sector's investment portfolio (Figure 6, right-hand graph). Given the significance of this exposure for the financial sector, the Bank introduced – as part of its monitoring framework for the residential real estate market – a regular data collection for the largest mortgage lenders (banks and insurance companies) in Belgium (i.e. the mortgage lending or PHL survey). This survey, which was launched in 2012 for banks and extended to insurance companies in 2018, covers a wide range of information on the characteristics of both new and outstanding mortgage loans.[7] The remainder of this section is based on the data reported by Belgian banks, while the exposure of Belgian insurance companies is discussed in a separate box (see below).

Longer maturities helped absorb part of the interest rate shock for new mortgage borrowers

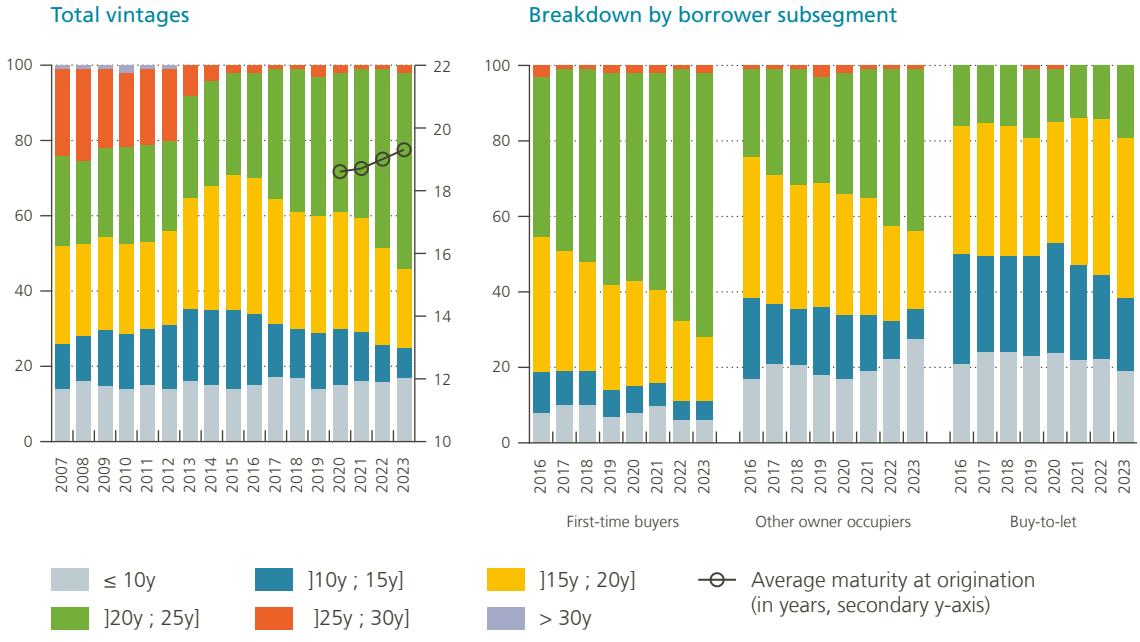
The mortgage lending survey revealed that, in the past two years, Belgian banks have granted a significantly larger share of mortgage loans with longer maturities. The proportion of new loans with a maturity of more than 20 years rose to 49 % in 2022 and to 54 % in 2023, from around 40 % in the period 2018-2021 (Figure 7, left-hand graph). This lengthening of maturities contributed considerably to mitigating the negative impact of higher mortgage rates on the borrowing capacity of new borrowers. One of the most restrictive provisions of bank credit policies when it comes to borrowing capacity is the maximum debt service-to-income ratio

7 Since 2020, data collection is also in line with the requirements of the ESRB Recommendation on closing real estate data gaps, published in 2016 (ESRB/2016/4) and amended in 2019 (ESRB/2019/3) (www.esrb.europa.eu).

Figure 7

Maturity at origination[1]

(percentage of total loans granted in a particular vintage year)



Source: NBB mortgage lending (PHL) survey for the banking sector.

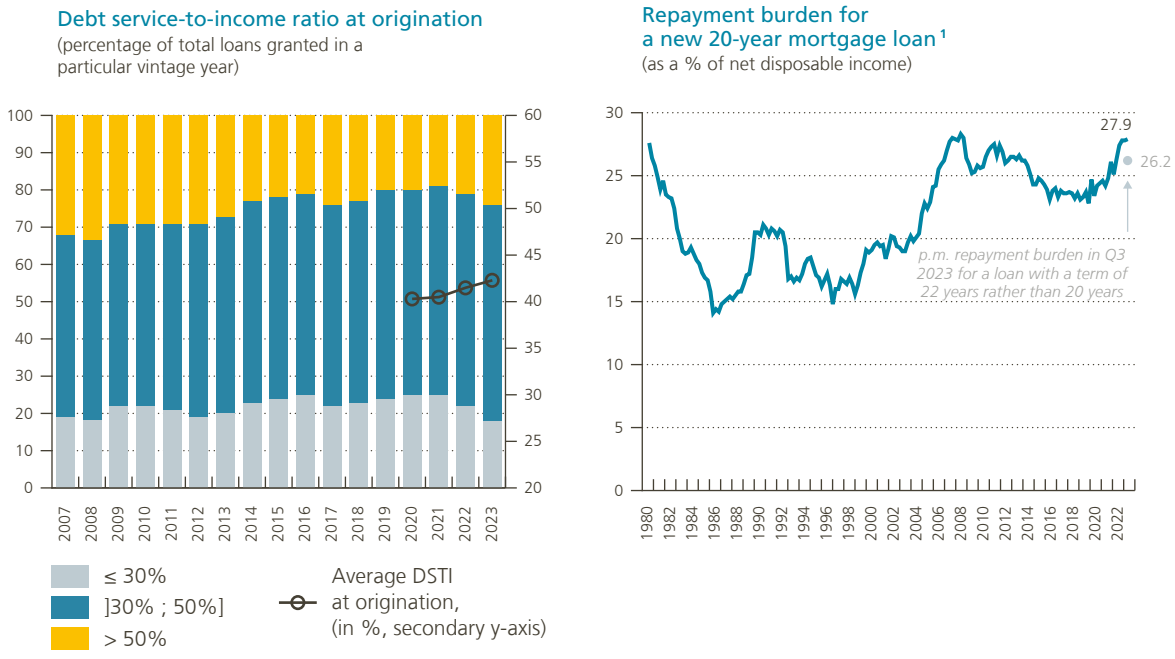
1 The data include refinanced loans recorded as new contracts. Data on the average maturity at origination are available as from 2020.

(DSTI ratio) or, alternatively, the minimum disposable income a household needs to cover its expenses after servicing its debt. Since the vast majority of Belgian mortgage loans are fully amortised (i.e. for more than 90 % of loans, monthly repayments include both interest and capital), an increase in mortgage rates reduces the room for capital repayment in the borrower's monthly repayment burden and results in a lower borrowing capacity (all other factors being equal, see also Figure 1). Extending maturities, which allows capital repayments to be spread over a longer period, has therefore helped sustain borrowing capacity while allowing income-related parameters to be kept within the limits of banks' credit policies. As mentioned above, this practice has been particularly beneficial for first-time buyers as the observed increase in the share of longer maturities was highest for this group of borrowers (Figure 7, right-hand graph).

The lengthening of maturities was possible thanks to the room created around 10 years ago when Belgian banks significantly tightened access to loans with (very) long maturities. Between 2012 and 2014, the share of mortgage loans with a maturity of more than 25 years fell from 20 % to only 2 %, and banks have kept their maturity standards tight ever since. During the low interest rate environment, the Bank repeatedly indicated that a relaxation of maturity standards was not appropriate when interest rates were low and declining, as it was important to maintain room to increase maturities, if needed, to stabilise the market, for example if interest rates on new mortgage loans were to rise rapidly and significantly (see past Financial Stability Reports). Consequently, as soon as interest rates started to rise, the Bank indicated that it welcomed the re-lengthening of maturities with the aim of sustaining, insofar as possible, the borrowing capacity of households and avoiding an excessive slowdown in mortgage lending.

Figure 8

Debt service-to-income ratio at origination [1] and the housing affordability indicator [2]



Source: NBB.

1 Data from the mortgage lending (PHL) survey for the banking sector. The data include refinanced loans recorded as new contracts. Data on the average DSTI ratio at origination are available as from 2020.

2 This indicator is based on the assumption that a household with average disposable income buys a home at an average price and finances 80 % of the purchase with a 20-year fixed-rate mortgage. The tax deductibility of the loan, transaction costs and future changes in income are not taken into account.

Longer maturities have contributed to offsetting a portion, but not all, of the interest rate shock to the market. This is evidenced by, among other things, the decline in new housing and mortgage transactions (see above). Moreover, the lengthening of maturities did not prevent a deterioration in the debt service-to-income (DSTI) ratios, which rose as a result of the strong increase in mortgages rates and house prices over the previous years. The share of new loans with a DSTI ratio of more than 50 % increased to 24 % in 2023, compared with around 20 % in the preceding years (Figure 8, left-hand graph). This share is however still lower than it was about 10 years ago, and the DSTI ratios would have risen further without the lengthening of maturities and the system of automatic wage indexation in Belgium. The same conclusion can be drawn by looking at the "housing affordability indicator" for would-be buyers – which shows the change in the repayment burden over time for a mortgage with a loan-to-value ratio of 80 % and a 20-year maturity. According to the indicator, the repayment burden deteriorated from 25.1 % of net disposable income in June 2022 to 27.9 % in September 2023 (Figure 8, right-hand graph). Assuming a longer maturity (of 22 years), the repayment burden would have been 26.2 % in September 2023, or 1.7 percentage points lower than had maturities not been lengthened but still higher than before the interest rate increase took place. The lengthening of maturities has thus probably tempered but not prevented a deterioration in housing affordability. Finally, the average borrowed amount for new mortgage loans has stabilised or even slightly declined since the beginning of 2023. This suggests, once again, that the lengthening of maturities did not encourage continuation of the buoyant lending dynamics seen in past years, which would have been an unwelcome situation.

Whereas banks relaxed maturity and DSTI standards, to some extent, to help their customers deal with the significant increase in mortgage rates, loan-to-value (LTV) ratios remained tight in recent years. The share of new mortgage loans for which households borrowed more than 90 % of the value of the property used as collateral has held steady at around 14 % for the last three years, including in 2023 (Figure 9, left-hand graph).

The LTV profile of new mortgage lending has improved significantly since the entry in to force, in 2020, of the Bank's prudential expectations for institutions granting mortgage loans.[8] These expectations – consisting of a set of reference thresholds for LTV ratios and specific "pockets of risk" as well as tolerance margins for the share of new mortgage loans permitted to exceed these thresholds – were introduced after several years of continued deterioration in the LTV profile of new mortgage loans (between 2014 and 2018). The goal was to steer the market towards more sustainable LTV ratios in order to protect both borrowers, from taking on excessive debt, and financial institutions, from a further increase in the risks in their mortgage loan portfolios. The Bank had also received a recommendation from the European Systemic Risk Board in 2019 encouraging the adoption of such measures.[9] Although the prudential expectations take the form of recommendations subject to a "comply or explain" principle, institutions made substantial compliance efforts which have led to a marked improvement in the LTV breakdown of new mortgages originated since 2019. The share of loans with an LTV ratio of more than 90 % (i.e. one of the main reference thresholds) dropped from 37 % in 2018 to 14 % in the last few years (Figure 9, left-hand graph). Even earlier, around 2014, banks had virtually stopped granting mortgages with an LTV ratio of more than 100 % (only 1 % of current production). All in all, the risks associated with new mortgage loans are thus much lower today than in the past.

Banks still have room to expand the volume of high-LTV loans to first-time buyers and other owner occupiers. In all three subsegments of borrowers (first-time buyers, other owner occupiers and buy-to-let investors), LTV standards are tighter than before the introduction of the Bank's prudential expectations (Figure 9, right-hand graph). The LTV breakdown in each subsegment varies, however, in line with the separate thresholds and tolerance margins set for these borrower groups. With an eye to maintaining access to credit for young people, for example, more flexibility is allowed for first-time buyers. In 2023, the share of mortgages with an LTV ratio of more than 90 % was 22 % for first-time buyers and 8 % for other owner occupiers. For these subsegments,

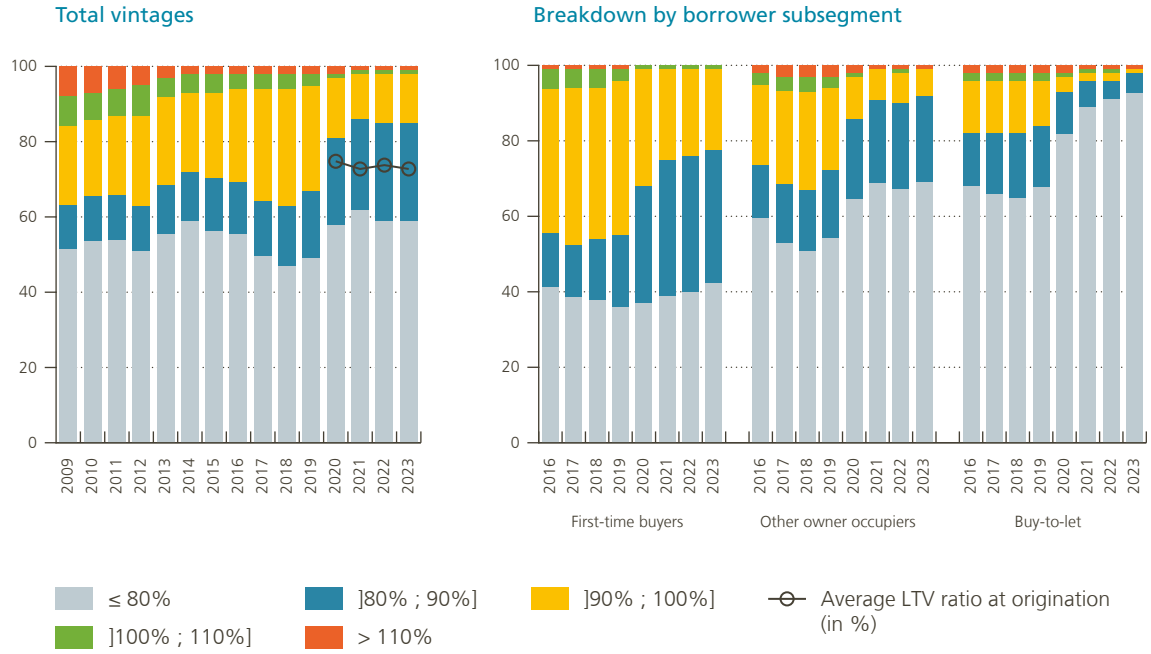
8 Circular NBB_2019_27 - Expectations of the Belgian macroprudential authority on internal management of Belgian mortgage credit standards as applied by banks and insurance undertakings operating on the Belgian residential property market (www.nbb.be)

9 ESRB/2019/04 - Recommendation of the European Systemic Risk Board of 27 June 2019 on medium-term vulnerabilities in the residential real estate sector in Belgium (www.esrb.europa.eu).

Figure 9

Loan-to-value ratio at origination [1]

(percentage of total loans granted in a particular vintage year)



Source: NBB mortgage lending (PHL) survey for the banking sector.

1 The data include refinanced loans recorded as new contracts. Data on the average LTV ratio at origination are available as from 2020.

35 % and 20 %, respectively, of new mortgage volumes are allowed to exceed the 90 % LTV threshold. The fact that the available margins for high-LTV mortgages have not been fully used, suggests that LTV limits have not restricted credit volumes in recent years and that borrowers who were able to do so took out loans with a lower LTV ratio, encouraged by the increased price difference between loans with an LTV ratio above or below the 90 % threshold (see below).

Further improvements in the LTV ratio at origination were observed in the riskier buy-to-let segment. The Bank's prudential expectations are stricter for this type of transactions where borrowers finance a rental investment, since these borrowers are more likely – in the event of financial difficulties – to default on their loan if they do not live in the property. Moreover, adverse shocks to rental conditions or declining property prices could affect the return for investors and – through a negative feedback loop via reduced interest on the buy-to-let market – depress demand for both new and existing houses, triggering further price falls. A maximum LTV ratio of 80 % therefore applies to this segment, with only 10 % of new loans permitted to exceed the threshold, up to a maximum LTV ratio of 90 %. The share of loans with an LTV ratio of more than 80 % or 90 % has continuously declined since 2019, reaching 8 % and 3 %, respectively, in 2023 (compared with 35 % and 19 %, respectively, in 2018). While this is a very significant improvement, some deviations from the recommendations are still observed in the buy-to-let segment. According to the "comply or explain" principle, which applies to all borrower segments, such deviations are possible if the mortgage lender can prove additional risk-mitigating features and applies a sound and sustainable credit and pricing policy. This is verified by the Bank by means of the compliance reports which financial institutions are required to submit on an annual basis. In general, deviations in the buy-to-let segment are often explained by the existence of an explicit pledge of financial assets or non-residential real estate (which are not considered in the LTV calculation).

BOX

Exposure of Belgian insurers to Belgian mortgage loans

In the context of the Financial Sector Assessment Program conducted by the International Monetary Fund (IMF) in 2018, a series of recommendations was addressed to the Belgian financial sector, including the insurance sector. At that time, one of the IMF recommendations relating to the prudential supervision of the insurance sector concerned the exposure of Belgian insurers to mortgage loans. More specifically, the National Bank of Belgium was asked to monitor more closely the underlying risks in mortgage loan portfolios, from both a micro- and macroprudential perspective. Given the limited amount of mortgage data available in the Solvency II reporting, the Bank decided to introduce an additional reporting obligation to follow up on this recommendation. This obligation was introduced in 2018. It is largely derived from the monitoring framework developed by the Bank in 2012 for the banking sector.

The reporting consists of a microprudential component and a macroprudential one, each with a different perspective and scope. The scope of the microprudential component concerns the exposure of Belgian insurance companies to residential mortgage loans, both in Belgium and abroad, and is only applicable to insurers whose exposure to residential mortgages exceeds 5 % of their total investment portfolio (excluding investments held in connection with unit-linked products) or whose exposure to residential mortgage loans exceeds € 650 million. The macroprudential reporting relates to the exposure of Belgian insurance companies to residential mortgage loans with collateral in Belgium only. This reporting applies to insurers whose exposure to Belgian mortgage loans exceeds € 1 billion. As insurers have had an incentive to hold mortgages on their balance sheets, especially in the low interest rate environment (see the Financial Stability Overview), the information provided through the above-mentioned reporting is particularly valuable for monitoring developments in the mortgage portfolios of insurers.

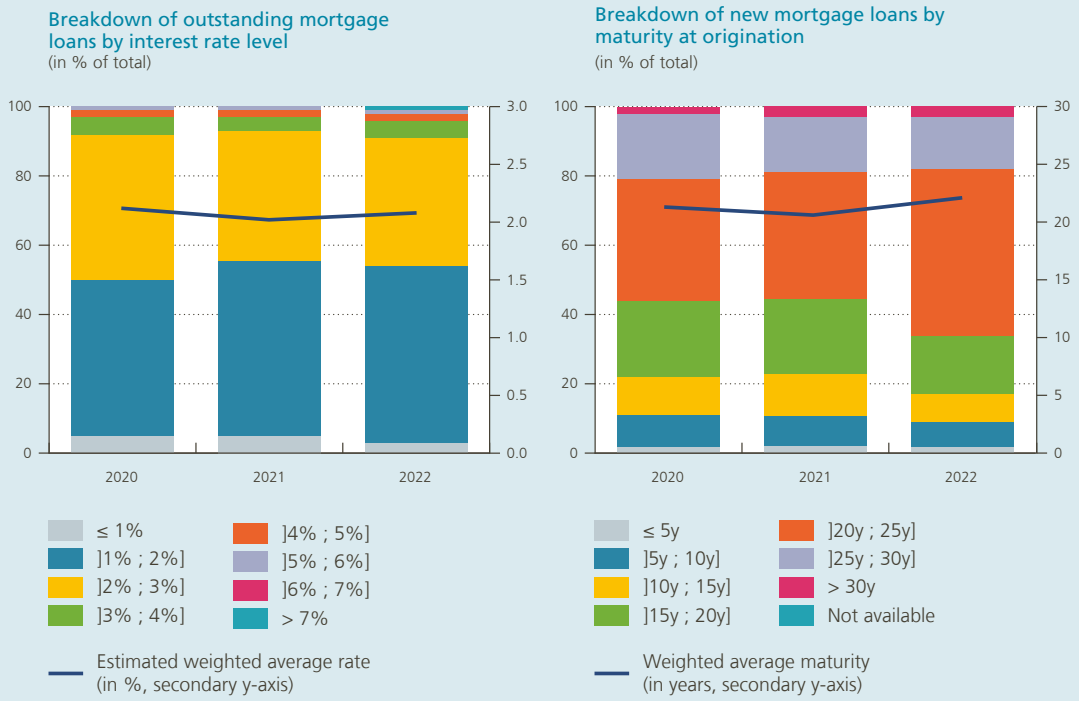
Characteristics of the Belgian residential mortgage loans held by insurance companies

Within the insurance sector, the stock of Belgian mortgage loans for which the underlying collateral is located in Belgium[1] amounted to € 10 billion at the end of 2022 (i.e. around 4 % of the total mortgage debt of Belgian residents). This represented 4 % of the insurance sector's investment portfolio excluding investments for unit-linked products.

Due among other factors to the low interest rate environment which prevailed in recent years, 56 % of the stock at the end of 2022 was composed of fixed-rate mortgage loans. In terms of interest rate levels, 53 % of these loans were subject to an interest rate of 2 % or less, while the remainder consisted for the most part of loans with interest rates between 2 % and 3 %. The low interest rate environment coupled with strong competition on the residential mortgage market drove down the weighted average rate on this stock from 2.38 % in 2018 to 2.02 % in 2021. However, with the rise in rates observed in 2022, this weighted average climbed slightly to 2.08 % in 2022 (see the figure below, left-hand graph). Furthermore, a lengthening of maturities was observed for new loans originated by insurance companies, with the average maturity rising from 20.6 years in 2021 to 22.1 years in 2022 (see the figure below, right-hand graph).

1 Mortgage loans with underlying collateral located abroad, such as in the Netherlands, fall outside the scope of this discussion.

Interest rates and maturities at origination for Belgian mortgage loans on Belgian insurers' balance sheets



Turning to risk parameters, by the end of 2022, 57 % of the stock had a loan-to-value (LTV) ratio at origination of 80 % or lower, while 21 % had an LTV ratio in the]80 % ; 90 %] bucket and 15 % in the]90 % ; 100 %] bucket. The estimated weighted average LTV ratio on the 2022 stock amounted to 74.3 %, while the average for new 2022 production was approximately 71.3 %. With regard to the debt service-to-income (DSTI) ratio at origination, the average ratio on the stock stood at 32.6 % for the same period and at approximately 33 % for new production. Both above-mentioned risk parameters have been on a downward trend since the introduction of the Bank's prudential expectations for institutions granting mortgage loans. These expectations, which also apply to insurance companies, have successfully contributed to limiting the share of high-LTV loans and pockets of risk (expressed in terms of the LTV and DSTI ratios) in the production of insurers' new residential mortgage loans (see below).

Insurance companies' compliance with the Bank's prudential expectations

Since 1 January 2020, insurance companies have been subject to the Bank's prudential expectations for mortgage loans in the same way as credit institutions. The expectations recommend that credit institutions and insurance companies be more cautious when granting new mortgage loans, particularly with a high LTV ratio, while ensuring access to credit for creditworthy borrowers, including first-time buyers. According to the last available "comply or explain" report covering the production of Belgian mortgage loans, most insurance companies complied with the Bank's prudential expectations. The (minor) deviations observed for some of them were generally justified.

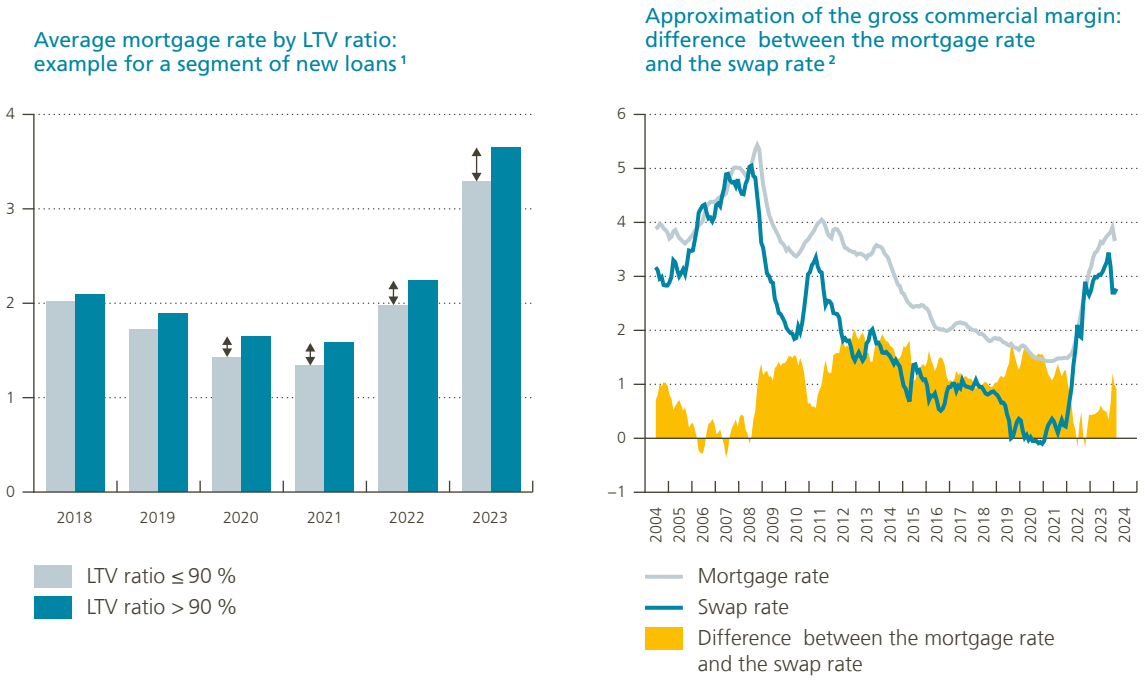
The pricing of new mortgage loans was affected by greater competition which resulted in a slower pass-through of the increase in market rates to mortgage rates

Banks continued to use pricing differentiation as a tool to steer their production towards better quality mortgages. Since the introduction of the prudential expectations, banks have adjusted their pricing policies to better reflect the risks associated with new loans and to guide their production in line with the recommendations set out therein. A greater price difference can, for example, be observed between loans with an LTV ratio above 90 % and those with an LTV ratio below 90 % (Figure 10, left-hand graph). This observation was still valid in 2023 after the surge in interest rates, in keeping with the fact that LTV standards remained tight.

Figure 10

Risk-based pricing and the commercial margin on new mortgage loans

(in %)



Source: NBB.

1 This graph shows the average interest rate on new fixed-rate loans with a maturity between]20y;25y] and DSTI between]30 %;50 %], for loans with an LTV ratio ≤ 90 % and those with an LTV ratio > 90 %. These data are sourced from the Bank's mortgage lending (PHL) survey for the banking sector.

2 The gross commercial margin earned by financial institutions on new mortgage loans is approximated by the difference between the average rate charged on new mortgage loans and the corresponding swap rate according to the period for which the mortgage rate is fixed (the swap rate is weighted by volume over the various maturities). Last observation: February 2024.

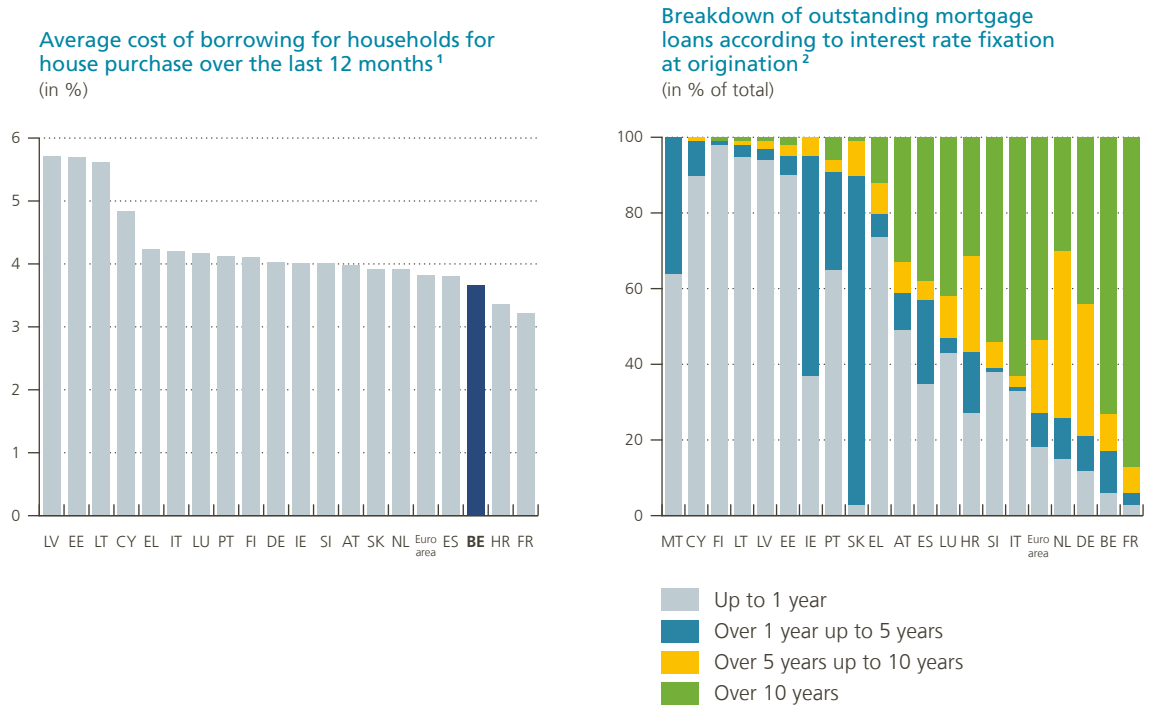
The rapid increase in market rates has nevertheless led to a fall in the commercial margin earned by banks on new mortgage loans in recent quarters, indicating that this increase was not entirely passed through to mortgage rates. Banks' average gross commercial margin on new mortgage loans, which can be approximated by the difference between the average interest rate charged on new mortgages and the corresponding swap rate, has fallen to very low levels since the second half of 2022 (Figure 10, right-hand graph). In part, this can be attributed to the speed of the interest rate rise, which increased the probability of a rise in market rates between the time of extension of the mortgage proposal and the client's acceptance thereof. Furthermore, and more importantly, competition between mortgage lenders intensified when interest rates began to rise,

as they wished to maintain their market share and keep new mortgage volumes at sufficient levels despite flagging demand. The mortgage market is traditionally highly competitive due to of the importance of mortgage lending in building long-term customer relationships. This intensified competition contributed to a slower rise in mortgage rates compared with market rates and consequently to a compression of commercial margins.

Mortgage rates in Belgium have also risen more slowly than in the euro area as a whole and are currently lower than in many euro area countries. Looking at the average cost of borrowing for house purchase across individual countries over the last 12 months, it can be seen that the interest rate charged by Belgian mortgage lenders was among the lowest of all euro area countries (Figure 11, left-hand graph). The relatively slower rise in mortgage rates in Belgium compared with other countries also helped alleviate pressure on the debt servicing capacity of new mortgage debtors, which – together with other factors such as the lengthening of maturities – contributed to the soft landing of the Belgian housing market.

Figure 11

Cost of borrowing for house purchase and interest rate fixation periods in euro area countries



Source: ECB (MIR), NBB. Last observation: February 2024.
1 All interest rate fixations.
2 Approximation based on new loans granted in the last 10 years.

The observed differences in the average cost of borrowing are in part related to differences in the mortgage rate fixation periods between countries, with Belgium being among the countries with the highest share of fixed-rate lending. Harmonised statistics published by the ECB show that 73 % of outstanding Belgian mortgages have an initial interest rate fixation period of more than 10 years (with the rate often fixed for the entire maturity of the loan), while an additional 10 % have an initial interest rate fixation period of more than five years and up to 10 years (Figure 11, right-hand graph). Higher shares are observed only in France, where they are 87 % and 7 %, respectively. In general, the average cost of borrowing for a house purchase has been higher lately in countries with predominantly variable-rate mortgages, such as the Baltic countries, Cyprus,

and Portugal. Of course, the interest rate on these contracts will also fall more rapidly if market rates start to decrease. In Belgium, the (maximum) financial penalty for early repayment of a mortgage loan (e.g. for the purpose of refinancing at a lower rate) is considered relatively low (three months' interest on the outstanding capital), meaning borrowers can opt to refinance their mortgage as soon as rates on new loans fall below the yield on outstanding contracts.

3. Household debt and pockets of risk in the mortgage stock

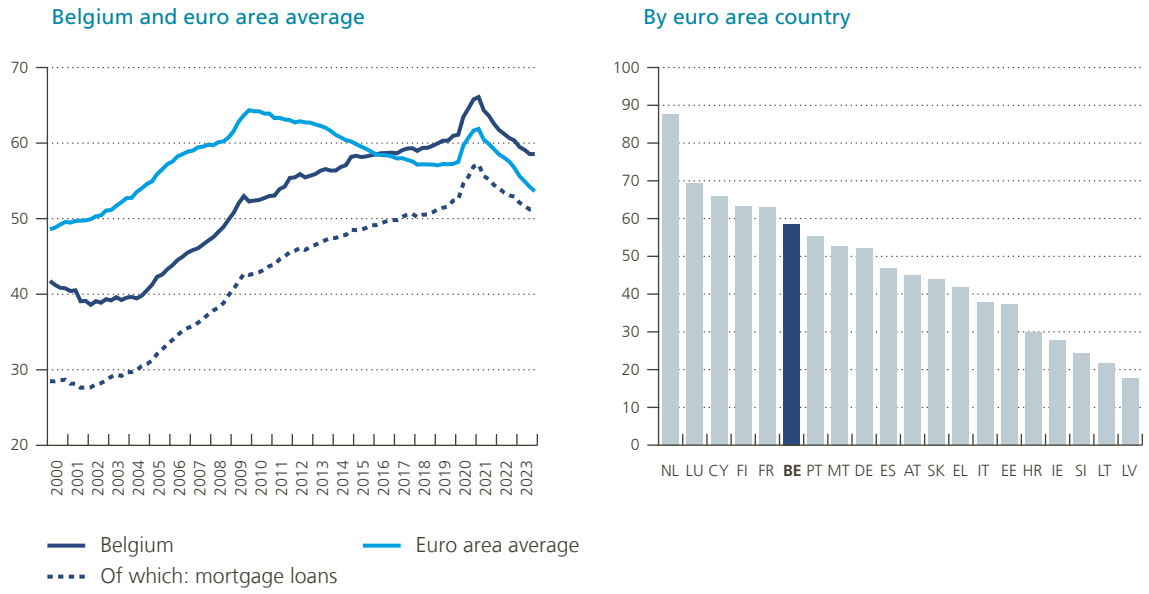
The household debt ratio declined on the back of both strong GDP growth and a slower increase in the outstanding mortgage stock

The total outstanding debt of Belgian households increased only moderately in 2023, in contrast to previous years. At the end of 2023, total household debt amounted to € 349 billion compared with € 341 billion at the end of 2022, an increase of less than 3 % or around half the growth rate observed in the preceding years. Mortgage debt is the main determinant of total household debt since mortgage loans account for the vast majority (more than 85 %) of the total financial liabilities of Belgian households. Nevertheless, despite the very significant decline in new mortgage loans (see above), outstanding debt grew slightly. This can be attributed to the fact that, as mentioned above, a large proportion of the decline in new mortgage lending was due to households deciding to maintain an existing (low-rate) mortgage when buying a new home, rather than replacing it with a new mortgage as was done in the past (when interest rates were declining). This affected the volume of new loans but not the outstanding stock. Moreover, households with excess cash might have been less likely to pay back their low-interest rate mortgages early, which helps explain observed developments in the mortgage stock.

Figure 12

Household debt ratio in Belgium and the euro area

(percentage of GDP)



Source: ECB, NBB. Last observation: December 2023.

Expressed in terms of GDP, the Belgian household debt ratio declined, due in part to exceptionally strong nominal economic growth. Debt ratio dynamics in recent years have often been explained in part by GDP volatility rather than changes in absolute debt levels, including for example around the time of the pandemic. After peaking at 66.1 % of GDP at the beginning of 2021, this ratio gradually fell to 58.6 % of GDP in the last quarter of 2023 (Figure 12, left-hand graph). The Belgian household debt ratio is therefore following the trend observed in the euro area as a whole, but is still higher than the euro area average of 53.6 % and that of many other countries (Figure 12, right-hand graph). In the past, the Belgian debt ratio was below the euro area average, but this shifted at some point as household debt levels in most countries have fallen since the 2008-2009 financial crisis, while they continued to grow in Belgium.

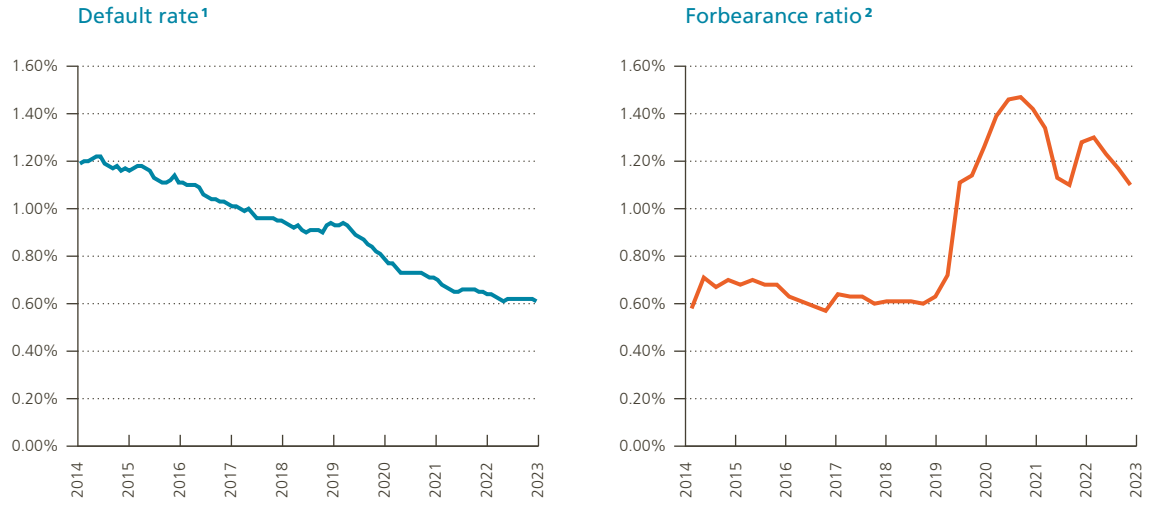
Mortgage defaults remain at a historically low level as borrowers benefit from predominantly fixed-rate mortgages and automatic wage indexation

The asset quality indicators of Belgian mortgage loans improved again in recent years, in line with the observation of an orderly downturn in the Belgian residential real estate market. The share of mortgage loans in default fell to a record low of around 0.6 % in June 2023 and has since stabilised (Figure 13, left-hand graph). Recent events, such as the coronavirus pandemic, the energy crisis and the rapid rise in interest rates, have not led to a materialisation of risks in the Belgian mortgage market so far. During these crises, the banking sector offered forbearance measures in order to avoid unnecessary defaults by otherwise creditworthy borrowers. Upon the outbreak of the pandemic, for example, households that met certain criteria could apply for a mortgage moratorium under the framework established by the Belgian banking federation; up to 6 % of mortgages benefitted from this relief at some point in time (these are not included in the forbearance figures

Figure 13

Default rate and forbearance ratio for Belgian mortgage loans

(percentage of total outstanding mortgage loans)



Source: NBB.

1 The number of mortgage loans for which payment defaults were recorded in the Individual Credit Register, expressed as a percentage of the total number of outstanding loans. Last observation: March 2024.

2 The volume of mortgage loans benefitting from forbearance measures, expressed as a percentage of the total volume of outstanding mortgage loans. Last observation: December 2023. Loans subject to forbearance measures are those for which banks have made concessions (modifications of the contract or debt refinancing) for debtors facing or likely to face difficulties in meeting their payment obligations. The forbearance ratio does not include the pandemic-related moratoria concluded under the framework established by the Federation of the Belgian Banking Sector (Febelfin), as these did not have to be automatically classified as forbearance measures pursuant to the EBA guidelines on payment moratoria[10]. The share of EBA-compliant moratoria peaked at 6 % of total outstanding Belgian mortgage loans in September 2020.

as they were excluded from the automatic classification).[10] In addition, borrower-specific debt restructuring measures were granted (outside the framework), which led to an increase in the mortgage forbearance ratio from 0.6 % to 1.5 % by September 2021 (Figure 13, right-hand graph). One year later, in September 2022, a new general moratorium for mortgage loans was introduced by the banking sector to guide their customers through the energy crisis, which led to a another – albeit slight – rise in the forbearance ratio (from 1.1 % to 1.3 %). Afterwards, the forbearance ratio began to fall again. The recent rapid increase in interest rates has, so far, not led to an increased need for mortgage debt restructuring.

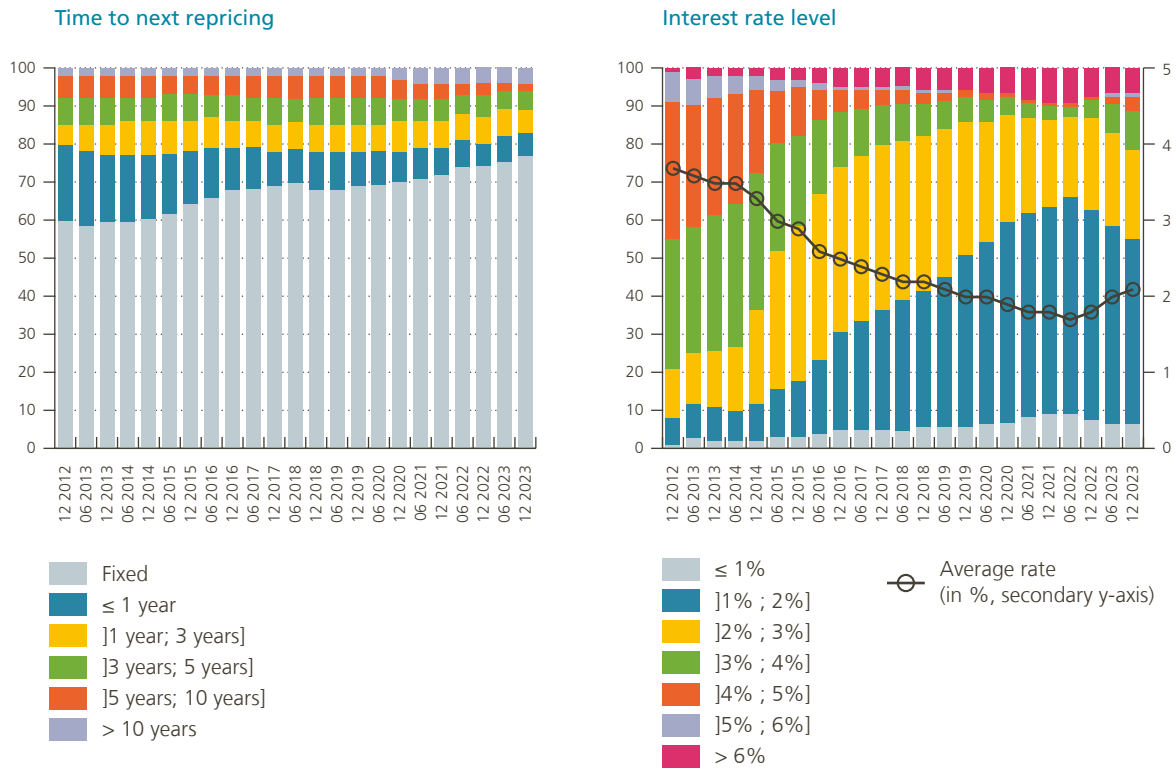
One of the main reasons default rates remained (very) low – despite the significant rise in interest rates – is that Belgian households are, in general, well protected against an increase in interest rates on their outstanding mortgage debt. This is because the vast majority of Belgian mortgage loans benefit from a fixed interest rate while, in addition, the interest rate increase for variable-rate loans is capped by law. In June 2022, just before the interest rate increase, 74 % of outstanding mortgage debt had an interest rate that was fixed for the entire maturity of the loan and 4 % of mortgage loans had a time to repricing of more than 10 years (Figure 14, left-hand graph). In addition, variable-rate loans – whose share in the total stock has been falling in recent years – benefit from strict limits, imposed by the Belgian mortgage legislation, on the maximum interest rate variation lenders are allowed to pass on to mortgage borrowers. In short, the rate charged to borrowers, reviewed on the basis of the monthly average yields on Belgian government bonds, may never exceed a level that is twice

10 EBA Guidelines on legislative and non-legislative moratoria on loan repayments applied in the light of the COVID-19 crisis (EBA\GL\2020\02, amended by EBA\GL\2020\08 and EBA\GL\2020\15) (www.eba.europa.eu).

Figure 14

Breakdown of outstanding mortgage loans by time to next repricing and interest rate level

(percentage of total outstanding mortgage loans)



Source: NBB mortgage lending (PHL) survey for the banking sector.

the initial rate. Thanks to years of (very) low interest rates, during which time new loans were concluded at low (fixed) rates and many households refinanced their outstanding loans, many borrowers were therefore able to lock in a (very) low interest rate on their mortgage for the entire remaining maturity. A breakdown of the mortgage stock by interest rate level shows that, in June 2022, 72 % of existing loans had an interest rate of 2 % or lower, of which 10 % were below or equal to 1 % (Figure 14, right-hand graph). By the end of 2023, the share of fixed-rate mortgages had risen further to 77 % of the stock, as more than nine out of ten new mortgage loans continued to be concluded at a fixed – albeit higher – rate.

Overall, the burden of higher interest expenses for households remained limited in practice, as can also be seen from the slow increase in the average interest rate on the outstanding mortgage debt. The higher mortgage rates seen since June 2022 have only affected new loans and a small share of the outstanding (variable-rate) stock. This resulted in a, thus far, very moderate increase in the average yield on the stock, from around 1.8 % in June 2022 to 2.1 % at the end of 2023 (Figure 14, right-hand graph). The rate increase was thus only very partially reflected in the interest effectively paid by Belgian households overall, and hence in the yield on the loan portfolios of Belgian mortgage lenders.

A second important factor which helped to prevent the materialisation of risks in the Belgian residential real estate market was the (sharp) rise in nominal personal income due, among other things, to the system of automatic wage indexation in Belgium. This system not only contributed to preserving household borrowing capacity for new loans, but also alleviated the burden of existing fixed-rate debt for Belgian households that took out a mortgage before the resurgence of inflation in 2022. These households indeed saw no rise in their (low) interest payments while they also benefited from higher wages.

Decreased vulnerabilities in banks' mortgage portfolios led to a downward calibration of the macroprudential capital buffer for residential real estate risks

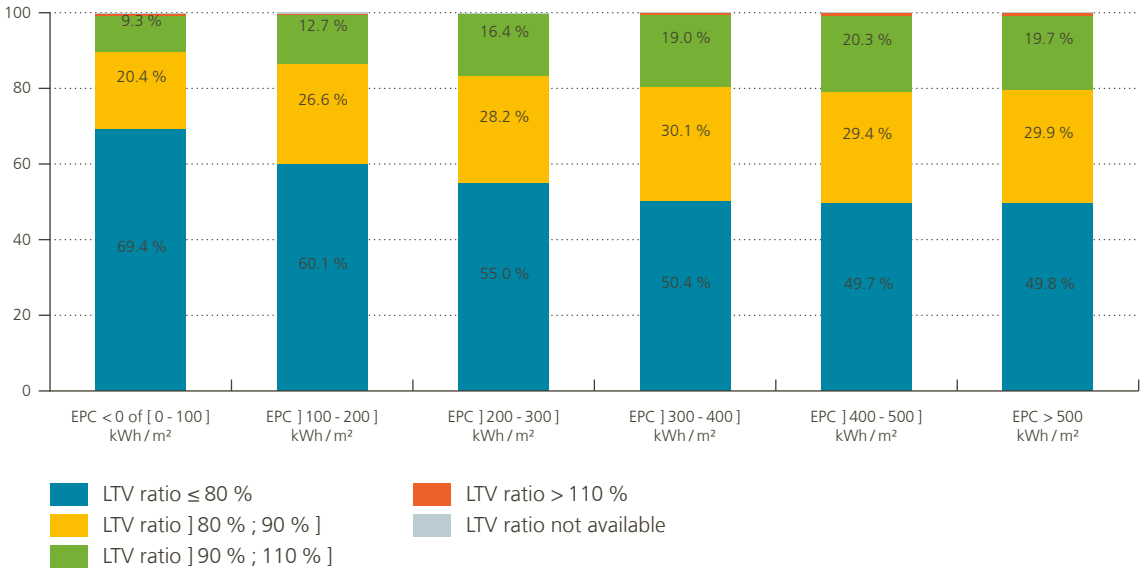
There are nevertheless still vulnerabilities in certain subsegments of the borrower population. Vulnerabilities exist, for example, for households with low levels of liquid assets whose mortgages combine multiple high-risk features, such as high LTV and DSTI ratios. At the end of 2023, 18.5 % of the total outstanding mortgage debt on banks' balance sheets had an LTV ratio of more than 90 % and a DSTI ratio above 30 % at the time of origination (Figure 16, left-hand graph). For 12.9 % of the stock, this was combined with an initial maturity of more than 20 years. These shares have, however, fallen substantially since the introduction of the Bank's prudential expectations in 2020, from more than 25 % and 15 % of the mortgage stock, respectively. Mortgages taken out by certain types of households that are potentially more vulnerable to interest rate risk constitute another pocket of risk ; this mainly concerns low-income households with a variable-rate mortgage. However, the Household Finance and Consumption Survey carried out in 2020-2021 revealed that households in the lowest gross income quantiles had a low incidence of variable-rate mortgages.

Recent observations suggest that new mortgages with less energy-efficient collateral are more often associated with weaker lending standards, revealing an additional source of potential vulnerabilities. The reporting on energy efficiency for new mortgage loans (see section 1) includes information on the link between the EPC rating and lending standards, in particular the LTV ratio. These data show that there is a negative relationship between the credit risk of borrowers in terms of the LTV ratio and the energy efficiency of the collateral, i.e. loans collateralised by property with a poor EPC rating are more likely to have a high LTV ratio (Figure 15). Banks therefore face a twofold vulnerability when it comes to such loans : when energy prices rise or when investments must be made to improve the energy efficiency of the underlying collateral, these borrowers will more quickly run into problems servicing their debt which could give rise to higher credit losses for lenders (also given the higher LTV ratios). However, the negative relationship between the EPC rating and the LTV ratio should be interpreted with caution, as such mortgages can also be accompanied by (planned) renovations that are not (yet) reflected in the EPC rating at origination. The Bank will be able to gain a better view on this matter in the future, as the reporting will be refined to include the purpose of the loan (see above).

Figure 15

Breakdown of new mortgage loans by LTV ratio per EPC[1] bucket

(in % of new loans granted in 2023)



Source: NBB mortgage lending (PHL) survey for the banking sector.

1 As per the Flemish label. As energy performance ratings are not comparable across all regions of Belgium, the energy score – an indicator that specifies the energy consumption per square meter of floor space (kWh/m²) – has been extrapolated onto the Flemish label.

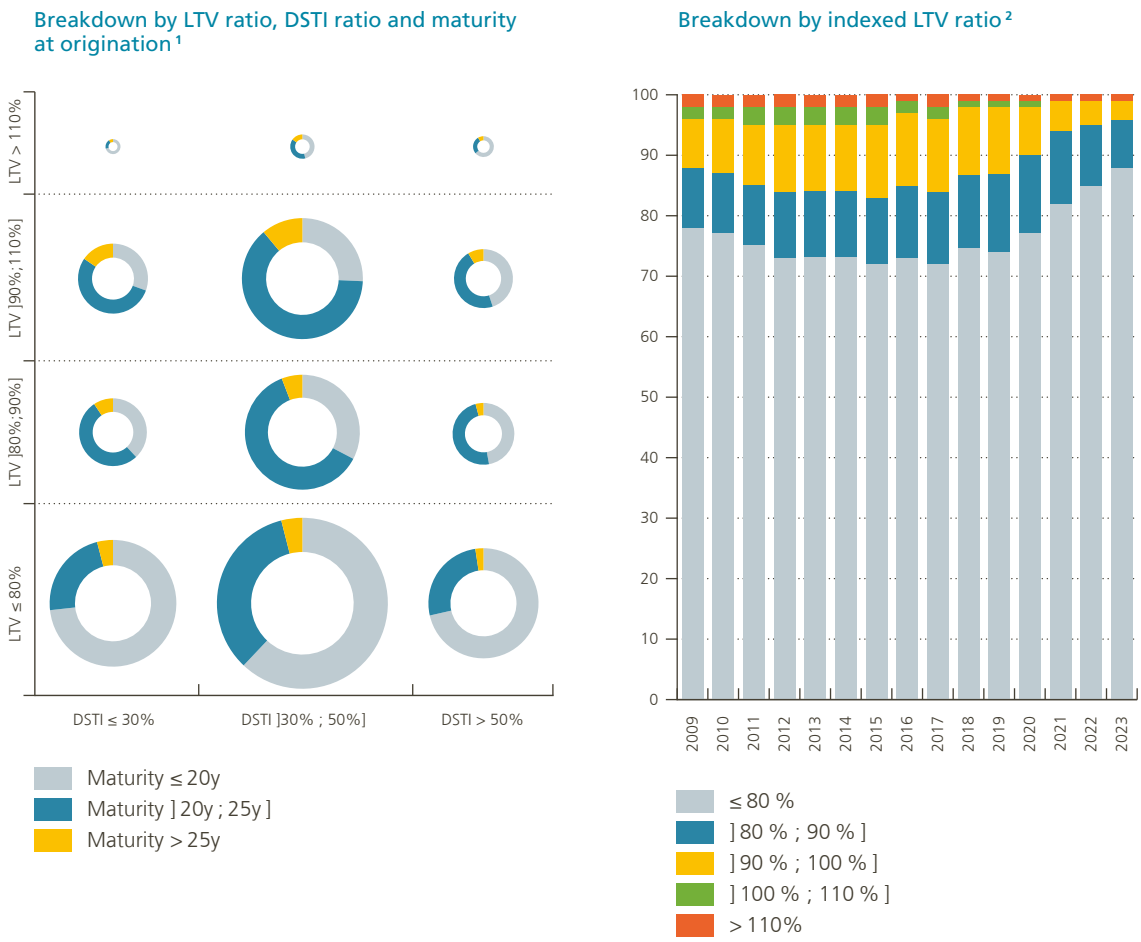
Despite the remaining presence of some "pockets of risk", the overall risk profile of mortgage portfolios has improved substantially after four years of successful application of the prudential expectations for new mortgage loans. The gradual inclusion in the stock of new loans with better credit standards at origination has resulted in a clear reduction in the risks in outstanding mortgages. This can be demonstrated, for example, by recent developments in the indexed LTV ratio of existing loans. The share of loans with an indexed LTV ratio below 80 % has substantially increased, from 74 % at the end of 2019 to 87 % at the end of 2023 (Figure 16, right-hand graph). This improvement reduces the risk of adverse movements in house prices, should they occur, causing the value of the mortgaged property to fall below the outstanding balance of the loan, meaning the lender is less exposed to losses in the event the borrower defaults. The "indexed LTV ratio" takes into account capital repayments made since origination and changes in the value of the collateral over time. The improvement in the ratio attributable to the prudential expectations is thus amplified by house price increases and the regular repayment of capital.

Following the reduction of risks in banks' mortgage portfolios and the orderly downturn observed in the residential real estate market, the Bank decided to recalibrate downwards the macroprudential capital buffer for residential real estate risks in the banking sector. This buffer has been in effect since 2013 for banks that calculate their minimum capital requirements in accordance with the internal ratings based (IRB) approach, for which internal models are used to calculate the risk-weighted assets in the mortgage loan portfolio. Since these models are calibrated on historical data for credit losses (and there has been no real crisis in the Belgian housing market), the resulting risk weights turned out to be very low. The Bank therefore introduced a specific macroprudential buffer aimed at strengthening banks' resilience to the potential materialisation of risks in the Belgian residential real estate market. Initially, the buffer consisted of a five percentage point add-on to the risk weight for domestic mortgage loans calculated with IRB models. Later, in 2018, the add-on was topped up with an additional increase in the initial internal risk weight of 33 %. From May 2022 onwards, the buffer (previously applied under Article 458 of the CRR) was transformed into a sectoral systemic risk buffer (SSyRB)

Figure 16

Breakdown of Belgian banks' mortgage stock by "pockets of risk" and indexed loan-to-value ratio

(percentage of total outstanding mortgage loans)



Source: NBB mortgage lending (PHL) survey for the banking sector.

1 The three indicators are calculated at the time of origination. The relative size of the circles reflects that of the portfolios, while the loan-to-value (LTV) ratio and the debt service-to-income (DSTI) ratio are broken down by specific intervals. In addition, each portfolio is broken down according to the initial maturity of the loans, expressed in years.

2 The indexed LTV ratio represents the loan-to-value ratio of a mortgage loan, updated to take into account the capital repayments made since origination and changes in the value of the collateral over time.

of 9 %, applied to the relevant risk-weighted assets and reserving the same amount of capital in the banking sector (around € 2 billion). In August 2023, following the reduction of risks in banks' mortgage portfolios and the orderly downturn observed in the residential real estate market, the Bank announced its decision to lower the SSyRB from 9 % to 6 % as from April 2024, leading to a reduced buffer of € 1.3 billion. It should be noted that, at the same time, the Bank decided to reactivate another macroprudential buffer, i.e. the countercyclical capital buffer. More information on this subject can be found in the Macroprudential Report.

While a disorderly correction currently seems less likely, the Bank is prepared to release this macroprudential capital buffer should there be signs of adverse developments in the Belgian residential real estate market. Such a release of the SSyRB, if necessary, would provide banks with additional room to support borrowers facing payment difficulties (i.e. debt restructuring or forbearance), absorb credit losses and continue mortgage lending. As such, it would prevent a disorderly downturn in the residential real estate market from turning into a real estate crisis.

Trying times for Belgian real estate firms and the Belgian CRE market

1. Introduction

The previous themed article on the Belgian commercial real estate (CRE) market was published two years ago when the low interest rate environment was coming to an end ("The Belgian commercial real estate market in turbulent times"). As its title implied, the article suggested that more challenging times for real estate firms and CRE investors lay ahead. The past two years have indeed been trying for these parties, as has been the case in many other countries.

While the end of monetary policy tightening and the expected drops in interest rates could bring some relief for market participants in the coming quarters, the recovery of CRE markets is likely to be slow. The pass-through of higher interest rates to the financing costs of real estate firms is not finished as debt originated during the low interest rate environment continues to mature and most, if not all, of it will have to be refinanced at higher interest rates. At the same time, the number of transactions on the CRE market will remain subdued as long as yield-seeking institutional investors continue to sit things out. Thus, for the foreseeable future, the operating environment for Belgian real estate firms and CRE market participants is likely to remain challenging.

This update of the 2022 article describes the most recent developments in the Belgian CRE market and the corresponding exposures of the financial sector. It also identifies a few points of attention for financial stability. One issue relates to the need for financial institutions to value their CRE exposures in a sufficiently conservative way and err on the side of caution given the prevailing uncertainty caused by the sharp increase in interest rates and the dearth of benchmark transactions on the market. While CRE-related equities and debt instruments that are regularly traded on financial markets have fallen sharply in value since the start of the interest rate hikes, indicators tracking the valuation of non-traded CRE assets have revealed less pronounced developments, raising questions as to how conservatively financial institutions revalue their CRE-related exposures in response to market developments. This consideration is especially relevant in cases where the book value is assumed to reflect the so-called fair or market value of CRE exposures. Another point of attention for financial stability is the potential development of a negative spiral, whereby cash-strapped real estate companies are forced to liquidate large volumes of CRE assets in thin market condition, resulting in fire sale prices that become the benchmark for valuing similar assets on the books of market participants. Consequently, in addition to reviewing the value of CRE collateral, banks should closely monitor credit risk related to their CRE loan exposures and have a pro-active approach as soon as borrowers become vulnerable. For those facing financial difficulties due to the current challenging context on the CRE market, banks should define adequate credit strategies considering the specific situations of the borrowers, including potential forbearance actions when appropriate. At the same time, banks should set aside sufficient capital in order to deal with a potential increase in credit losses on some of their real estate loans as the pass-through of higher interest rates to the borrowers of these loans continues.

This article is structured as follows. Section 2 focuses on investor transactions on the Belgian CRE market and indicators of recent developments in the price or value of Belgian commercial real estate. Section 3 zooms in

on the latest available data and recent trends in the direct and indirect CRE exposures of the Belgian financial sector, which are mainly concentrated in Belgian real estate investment trusts (landlords), insurance companies (landlords and indirect CRE exposure) and banks (indirect exposure through CRE loans). Section 4 zooms out to examine the financial position of Belgian real estate firms and includes an assessment of the extent to which Belgian banks' corporate lending is exposed to developments in the Belgian residential real estate market. In contrast to the Belgian CRE market, this market has been characterised by a soft landing, as discussed in more detail in the other themed article ("Orderly downturn of the Belgian residential real estate market reduced financial stability risks") in this report. But here as well, the number of transactions has declined substantially, generating spillover effects for construction and real estate companies active in the housing sector. Section 5 concludes with a summary of the main findings and policy considerations for financial stability.

The CRE market is characterised by a variety of stakeholders and different segments in which trends, as well as risks, may vary considerably. In line with the related Recommendations of the European Systemic Risk Board (ESRB), the Bank has therefore developed extensive monitoring using the ESRB's definition of CRE, which reads as follows: *"any income-producing real estate, either existing or under development, including rental housing, or real estate used by the owners of the property for conducting their business, purpose or activity, either existing or under construction, that is not classified as RRE, and includes social housing"*. The current monitoring framework is based on data collected from prudential reporting by Belgian financial institutions, financial accounts, annual accounts filed with the Central Balance Sheet Office, private sector sources and the Corporate Credit Register. A recent enhancement of the framework focused on the tool to monitor CRE loans granted by Belgian banks using granular data collected through the Belgian Extended Credit Risk Information System (BECRIS), which has now been linked to the annual accounts filed by borrowers with the Central Balance Sheet Office.

2. A low volume of investment transactions makes the valuation of CRE-related assets more uncertain

As in many other countries, the successive interest rate rises seen since mid-2022 have had a profound impact on the Belgian CRE market. While in 2022 a few large-scale transactions masked the impact of higher interest rates on the investment volume, last year's figures revealed the true extent of the slowdown in activity. Higher interest rates had to be matched by higher yields on the CRE capital markets, which exerted downward pressure on the value of CRE assets. However, due to uncertainty regarding future interest rate developments, the CRE revaluation process was characterised by a persistently large discrepancy between the price expectations of buyers and sellers, contributing to the sharp fall in the number and volume of transactions observed last year. Even the seasonal effect, meaning the investment volume is typically higher in the fourth quarter, did not materialise as price correction challenges continued despite the stabilisation of interest rates in the last months of the year.

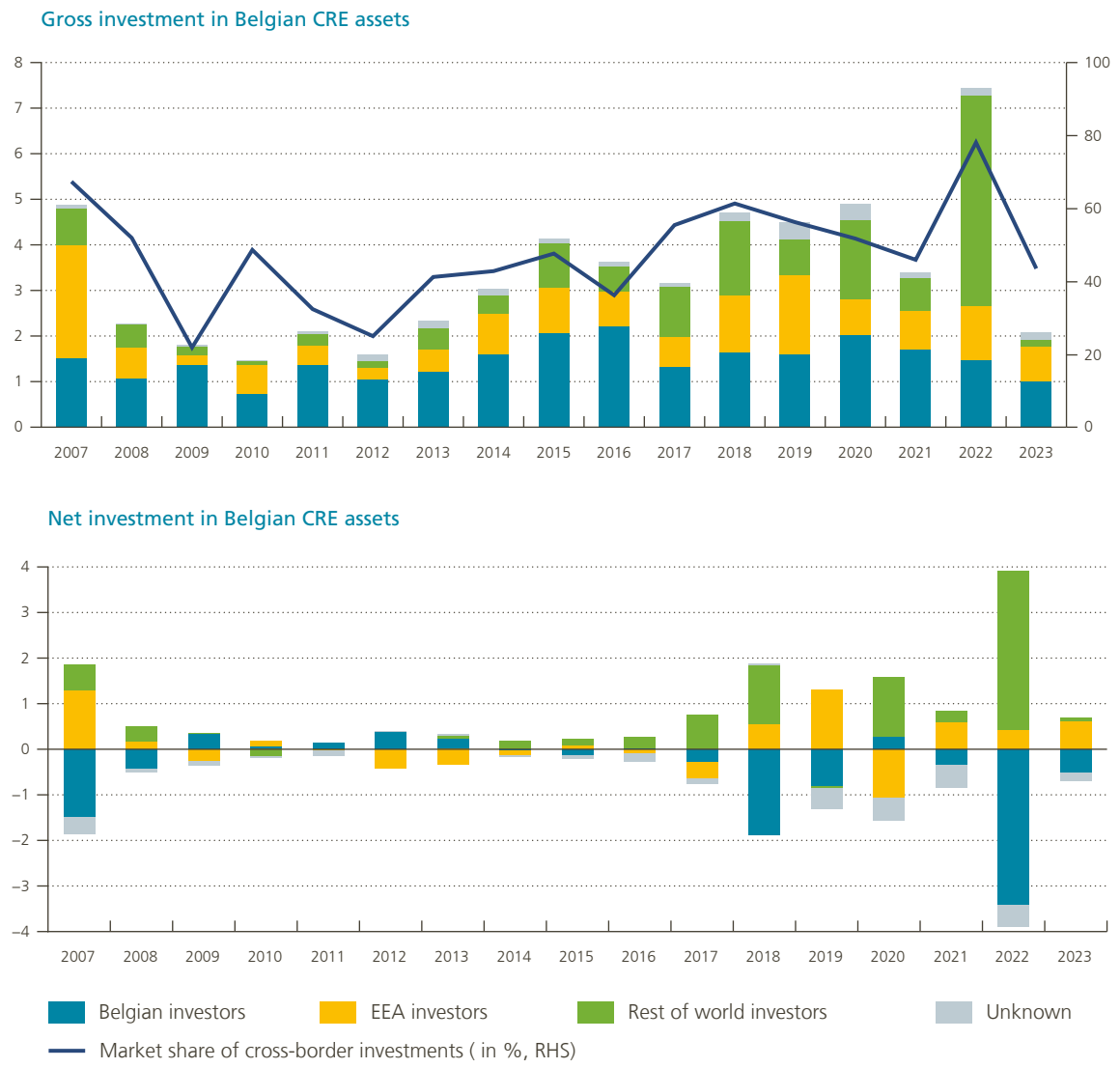
As shown in Figure 1, investment on the Belgian CRE market in 2023 barely exceeded € 2 billion according to data from Real Capital Analytics (RCA)/Morgan Stanley Capital International (MSCI). This was the lowest volume recorded since 2012. The investment volume thus remained almost 60 % below the five-year average and fell by 70 % compared with the previous year. The decline in Belgium was therefore much stronger than the 50 % fall observed on the European market overall, which can be explained in part by the fact that, in Belgium, the comparison is made with the absolute record volume for 2022. When the figures for the latter year are corrected to exclude the exceptional deal involving the former REIT Befimmo, valued at € 2.7 billion, the percentage decline for Belgium drops to 55 %, compared with the five-year average, and to 53 % from the previous year.

A closer look at the composition of investment transactions on the Belgian CRE market in 2023 shows that it deviated in several respects from the trends observed in preceding years.

Figure 1

Transactions on the Belgian CRE investment market

(in € billion, unless otherwise stated)



Source: RCA/MSCI data (own reclassifications).

The average deal volume halved compared with 2022, as hardly any large single-asset deals took place. The market was indeed dominated by transactions with an individual value of less than € 50 million. Due to higher financing costs, investors seemed to prefer buildings of lower quality and even in need of redevelopment or, in other words, deals with better "financeability", and in market segments where higher returns can be achieved.

In 2023, transactions were further characterised by shifts in the composition of CRE investors, with changes in both the geographical origin and type of investor. When interest rates were low, large institutional investors from around the world were attracted by the comparatively high risk-adjusted returns on the Belgian CRE market, in particular for office space in the Brussels Central Business District (CBD), considered more stable. But in 2023, these investors were noticeably less present on the Belgian market. Rising interest rates made other asset classes again an attractive investment alternative, and yield-seeking investors also adopted a wait-and-see approach to CRE due to slower repricing and the uncertain valuation of this asset class. With a share falling to

around 45 % compared with 60 % on average in the preceding five years, cross-border investors were no longer the largest group on the Belgian CRE investment market. Nonetheless, measured by net transaction volume, there was still a net inflow of cross-border capital into the Belgian CRE market last year.

In contrast to previous years, when cross-border investors came from different geographical regions (European Economic Area, North America, Southeast Asia), in 2023 they almost exclusively originated from the EEA, with investors from Germany, France and Spain forming the largest cohorts. Institutional investors, mainly consisting of asset managers and equity funds, remained the most significant type of non-resident investor (Figure 2).

Figure 2

Breakdown of transaction volume on the Belgian CRE investment market

(in € billion)

Source: RCA/MSCI data (own reclassifications).

Among Belgian investors, the majority of investments were made by project developers and (other) private investors, including, in particular, pure equity players such as family offices. A number of these were new participants, probably attracted by the opportunities created by current market conditions. Belgian institutional investors — mainly insurance companies and equity funds — and listed real estate investment trusts (REITs) clearly showed greater restraint in their CRE investment than in previous years. In 2023, they were mainly on the seller's side of the market.

The strong slowdown in new investment in 2023 affected almost all subsegments of the Belgian CRE market (offices, retail, industrial, etc.), with senior housing and care proving a notable exception.

The slowdown was strongest on the office market, in particular the Brussels CBD submarket, which is traditionally the most liquid subsector attracting the lion's share of CRE investment. The volume for the entire office market amounted to roughly € 900 million in 2023, or almost 75 % less than the five-year average. As a result, the share of offices in total CRE investment dropped to 40 % in 2023, compared with an average of 65 % in previous years. Part of the explanation for this is that international investors were largely absent during the past year and that the deals mostly concerned lower quality buildings and smaller volumes. However, in addition to the interest rate effect and cyclical factors in general, the office market is also affected by structural factors.

Hybrid working, the impact of which on long-term demand for office space has not yet become clear, and demand for high-quality offices that meet environmental, social and governance (ESG) criteria, including carbon neutrality, have given rise to an increasingly two-tier office market. There is a growing risk of obsolescence for properties that do not meet ESG criteria, which undoubtedly influences the risk perception for this type of property. High demand for offices that meet the strictest sustainability requirements is being driven not only by increased environmental awareness on the part of both investors and users, but also by legislative changes such as the expansion and tightening of regional regulatory requirements for the energy performance of non-residential buildings and the disclosure obligations imposed on financial market participants by the EU Sustainable Finance Disclosure Regulation. Sustainability thus seems to have become a fully-fledged criterion for offices, in addition to location, to the extent there is evidence of polarisation between green and non-green offices on top of the divide between offices in prime and non-prime locations. While the increased differentiation between the prime and non-prime market segments offers (re)development opportunities for obsolete offices, given the scarcity of "green" assets, there is a real risk of obsolete offices that are less eligible for redevelopment or repurposing seeing severe value erosion and even turning into stranded assets.

Healthcare real estate was the only type of property for which a higher investment volume was recorded last year. With more than € 500 million or 25 % of total investment, this subsector reported its highest-ever figure in both absolute and relative terms. Healthcare actually performed better than the industrial and retail segments, which are both more traditional CRE subsectors. The countercyclical nature of healthcare real estate and the growth potential it offers given population ageing explain its popularity, including among specialised non-resident investors.

In the industrial real estate subsector, the decline in investment volume compared with the five-year average was less pronounced. This type of property accounted for almost 15 % of total investment in 2023. Its relative resilience was due to the healthy fundamentals and prospects of this segment, especially given Belgium's central location and existing infrastructure. According to a recent survey conducted by the broker CBRE among Belgian and foreign investors, logistics space is set to become the preferred asset class in 2024 while offices should fall to second place.

Retail real estate accounted for 12 % of total transaction volume in 2023. The level of investment almost equaled that of 2022, mainly thanks to a portfolio transaction, but remained significantly below the five-year average, which was strongly impacted by a number of large transactions involving shopping centres in 2018.

Hotels and apartments are less important subsectors of the Belgian CRE market. Transaction volume in both types of property declined very sharply in 2023, on both an annual basis and compared with the five-year average.

While the extent of the slowdown in the primary and secondary market for Belgian CRE assets thus varied from one subsegment to another, it was material and transactions were generally moderate in size. The price signals generated in such thin, if not illiquid, market conditions should thus be interpreted very cautiously, especially having regard to the slow adjustment of yields on the CRE capital market (relative to the development of risk-free rates) and the observed discrepancy between the prices at which buyers wish to buy and those at which sellers wish to sell. Both factors point in the direction of further downward pressure on CRE prices, all other factors being equal. Should certain real estate investors have to liquidate large portfolios of CRE assets on the market (due to liquidity problems, for example), it appears likely that the market would clear at prices indicating much lower market valuations than those seen so far. Yet, to date, no such distress transactions have taken place as the main landlords have not, and are not likely to, experience liquidity pressures (given the closed-end structure of REITs and the long-term life insurance liabilities of insurance companies). Until now, Belgian banks also seem to have provided sufficient financing to real estate companies faced with liquidity challenges as a result of the reduced ability to sell (developed) CRE properties on the market.

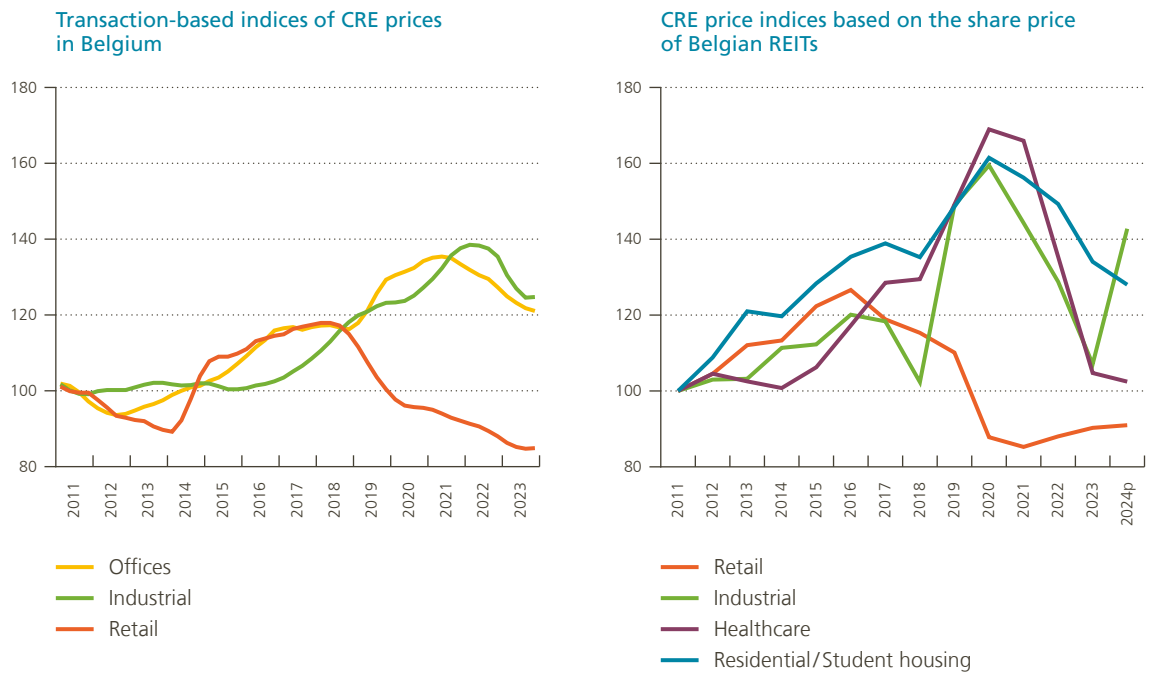
Three different benchmarks are used to measure recent developments in the value of Belgian CRE assets, based respectively on valuations of existing CRE portfolios, prices of recent transactions in the investment market, and the share prices of Belgian REITs, as quoted on the Belgian stock exchange. The ECB's (experimental) price indicators, which cannot be published, are based on valuations of existing CRE portfolios and suggest quite strong variation between the three subsegments covered (offices, retail and industrial). In particular, the evolution of the office building sub-index in Belgium is quite atypical compared with other European countries, as it was characterised by a rather flat, but generally depreciating, trend from 2011 to 2022, followed by a stronger decrease in 2023. This could have to do with the predominant weight of the non-prime segment in the index. Non-prime office space has been subject to structural adjustments for many years now, explaining its subdued price development even during the low interest rate environment. Some buildings have been withdrawn from the CRE market as a result of reconversion into residential use. This particularity of the Belgian office price index also explains why the decline in the overall ECB CRE price index in 2022 was very limited for Belgium, compared with the EU as a whole and the even larger declines seen in some other countries that had experienced earlier strong increases in prices for office space during the low interest rate period. The available data for 2023 show a stronger decline in the value of Belgian offices, in line with the developments seen in other countries. The ECB indicators for the retail and industrial subsegments reveal a more cyclical profile, with a decline in the retail segment – that started before 2020 but accelerated after the outbreak of the pandemic – and a sharp increase in the valuation of industrial CRE – during the pandemic and the low interest rate period – followed by a decline in 2022 and 2023.

The RCA/MSCI hedonic price indices measuring CRE transaction prices – correcting in principle for quality differences in the properties sold – are shown on the left-hand graph in Figure 3. They point to developments in the retail and industrial segments that, up to now, are relatively similar to those revealed by the ECB series. The transaction-based price series for office buildings shows a comparatively more cyclical development though (in line with that seen in other countries), probably reflecting the relatively high share of prime (Brussels CBD) office space in this index. For all three subsegments, the RCA/MSCI measures show relatively moderate declines in CRE prices between the end of 2022 and 2023 (by 5 %, 8 % and 4 %, respectively, for the office, retail and industrial segments). Given the relatively limited number of CRE transactions on which the 2023 data are based, these figures should be interpreted with caution and are not necessarily a correct reflection of the true market clearing price level, which is difficult to estimate given recent interest rate volatility and the wait-and-see approach of many investors. In conclusion, since the investment market largely came to a standstill in 2023, there is less (relevant) information available regarding transactions that can serve as input for transaction- or valuation-based indicators of Belgian CRE prices. The information provided by both types of indicators should thus be interpreted with caution.

Figure 3

CRE prices in Belgium based on two alternative measures

(indices 2011 = 100)



Sources: RCA/MSCI, NBB.

Given this uncertainty, the Bank's monitoring framework includes a third and complementary benchmark to assess developments in the valuation of Belgian CRE, one that is based on the share prices of Belgian REITs. The results are shown in the right-hand graph in Figure 3 and should be interpreted with caution as well, as they can be influenced by the general level of investor appetite on the equity markets and factors other than the assumed value of REITs' CRE portfolios which influence the share price of these closed-end funds. Yet given that REITs' assets mainly consist of CRE – often in a particular subsegment, depending on its business model – share price information can be used as a proxy for the value assigned by shareholders to the REIT's assets (after correction for the debt ratio on the liabilities side of the balance sheet).

3. CRE exposure of the Belgian financial sector

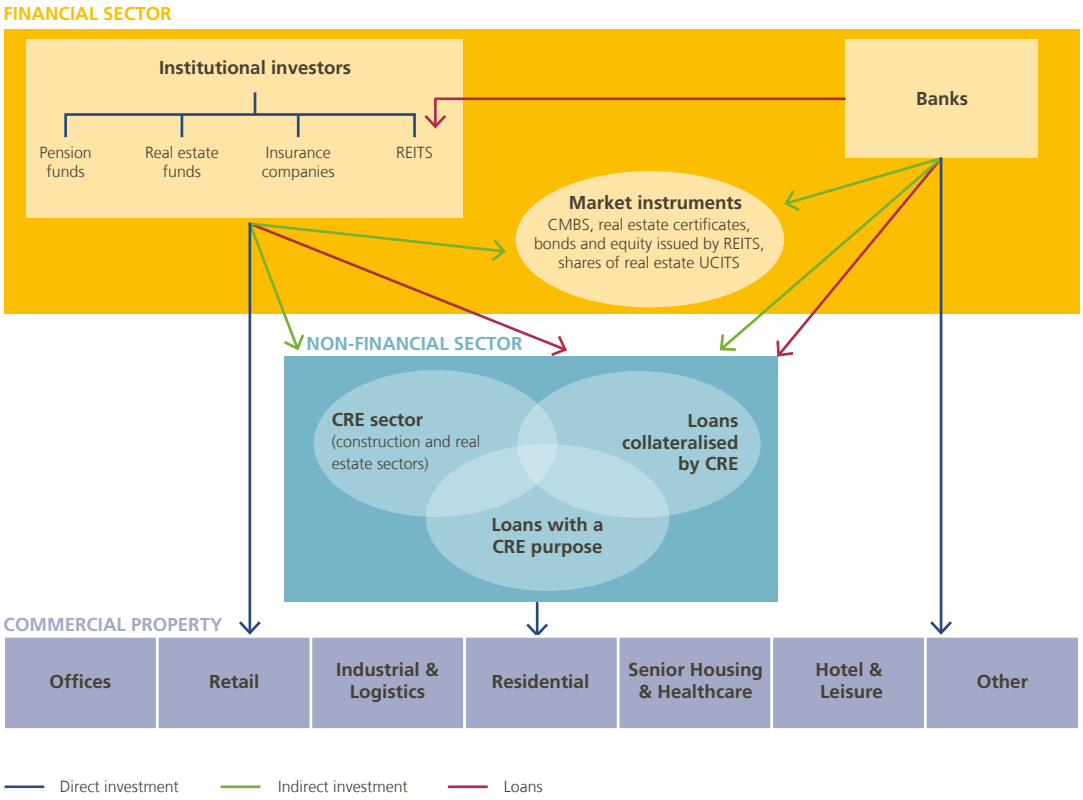
CRE markets are closely interconnected with the financial sector, warranting close monitoring of the CRE exposure of Belgian financial institutions. Since the latter can act as both borrowers and lenders and even investors when it comes to commercial real estate, the channels through which the dynamics of the CRE market can potentially affect financial stability are manifold and complex.

Figure 4 depicts the most relevant links between CRE and the Belgian financial sector.

As mentioned above, the Belgian financial sector, and more specifically institutional investors, invests directly in commercial property as an income-generating asset class. Apart from that, however, financial institutions are also indirectly exposed to CRE through a number of channels. Indirect real estate investment includes the

Figure 4

Diagram of CRE-related exposures of the Belgian financial sector



holding of securities issued by REITs or other companies active on the CRE market. Furthermore, lenders – mainly banks – grant these same companies loans for the acquisition, construction or development of CRE property. In addition to (and partly overlapping) the lending channel, a collateral channel can be distinguished: loans to companies are indeed often secured, at least in part, with commercial property.

Assessing the CRE exposure of the Belgian financial sector requires aggregating the individual exposures of different types of financial institutions. However, the (relative) importance of the direct and indirect links with the Belgian CRE market, as described above, varies considerably from one type of institution to another.

Non-bank CRE exposure

The total CRE exposure of pension funds is small compared with that of other financial institutions. At the end of 2022, the volume was slightly over € 1 billion or about 3 % of their investment assets (left-hand graph in Figure 5). This exposure mainly takes the form of indirect investment, in particular through investment funds and equities issued by real estate companies.

In contrast to pension funds, Belgian insurance companies have substantial CRE exposure. Their overall CRE exposure – both direct and indirect investment as well as loans – totaled € 25 billion or 10 % of their investment portfolio (excluding assets covering unit-linked contracts) at the end of 2023 (right-hand graph in Figure 5). Compared with the figure recorded at the start of Solvency II reporting in March 2016 (less than 8 %), the sector's

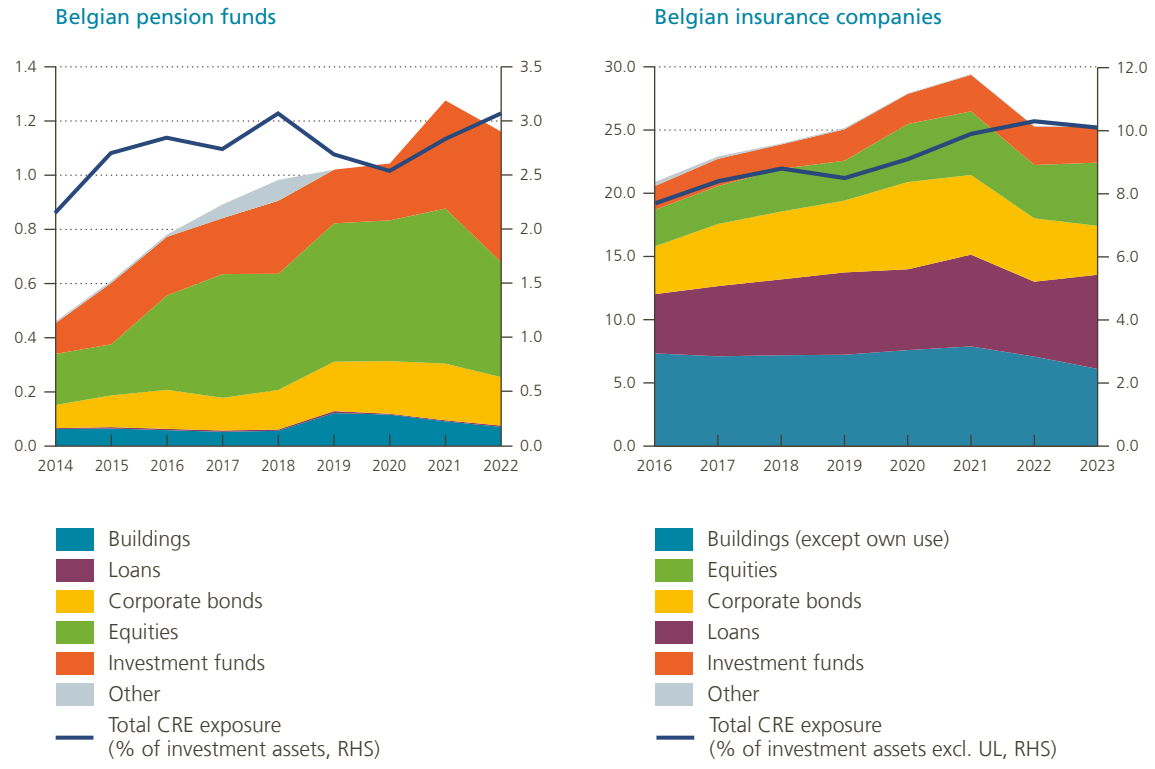
CRE exposure has thus grown in recent years. In the low-yield environment which prevailed until the end of 2021, insurance companies gradually shifted the focus of their investment strategy to alternative assets. In that regard, CRE was very appealing to them as this asset class offered attractive returns compared to more traditional investments (such as sovereign and corporate bonds) while matching the long-term duration of their liabilities. Although Belgian insurance companies made considerable direct CRE investments (i.e. in property), the growing share of CRE exposures in their portfolio was mainly attributable to indirect investment through the holding of CRE corporate bonds, shares of CRE investment funds and commercial loans granted to CRE companies.

With the raising of interest rates, CRE assets were gradually repriced on the markets. The decrease in the insurance sector's CRE exposure since the third quarter of 2022 is mainly due to these negative price effects. Indeed, a range of CRE assets (such as traded corporate bonds and listed equities) are valued at market price under the Solvency II rules. However, direct CRE investment (i.e. in property) and commercial loans to CRE companies are generally valued using alternative methods. The correct valuation of these assets is thus a point for attention in the current context and will be closely monitored and analysed further by the Bank. Financial institutions should value their CRE exposure in a sufficiently conservative way and err on the side of caution given the prevailing uncertainty caused by the sharp increase in interest rates and the dearth of benchmark transactions on the market. While regularly traded CRE-related assets have fallen sharply in value since the start of the interest rate hikes, indicators tracking the valuation of non-traded CRE assets have revealed less pronounced developments, raising questions about how conservatively financial institutions revalue their CRE-related exposure in response to market developments. This policy consideration is especially relevant in cases where the book value is assumed to reflect the so-called fair or market value of CRE exposures.

Figure 5

CRE exposure of Belgian pension funds and insurance companies

(in € billion unless otherwise stated; market value and alternative valuations)



Sources: FSMA, NBB.

1 Non-consolidated data.

At the end of 2023, the total CRE exposure of the Belgian insurance sector was composed of direct investments in properties (€ 6 billion), equities (€ 7.4 billion), corporate bonds (€ 3.9 billion), loans (€ 5 billion) and investment fund shares (€ 2.8 billion).

A granular analysis was conducted for each of these portfolios for insurance companies with high related exposures. Based on this analysis, it emerged that direct CRE investment (excluding properties for own use and based on a sample covering around € 5 billion of investments out of a total of € 7.6 billion) mainly consists of buildings located in Belgium (65 %) and neighbouring countries (30 %), in particular France (19 %), followed by Luxembourg (5 %) and Germany (4 %) (left-hand graph in Figure 6). It is also notable that Belgian insurance companies have no relevant physical exposure to the US CRE market (less than € 10 million). This analysis was also used to break down direct investment in Belgian CRE by subsegment. This breakdown is shown in the right-hand graph in Figure 6 and indicates that the properties in Belgium are mainly offices (53 %) and retail/shopping centres (32 %).

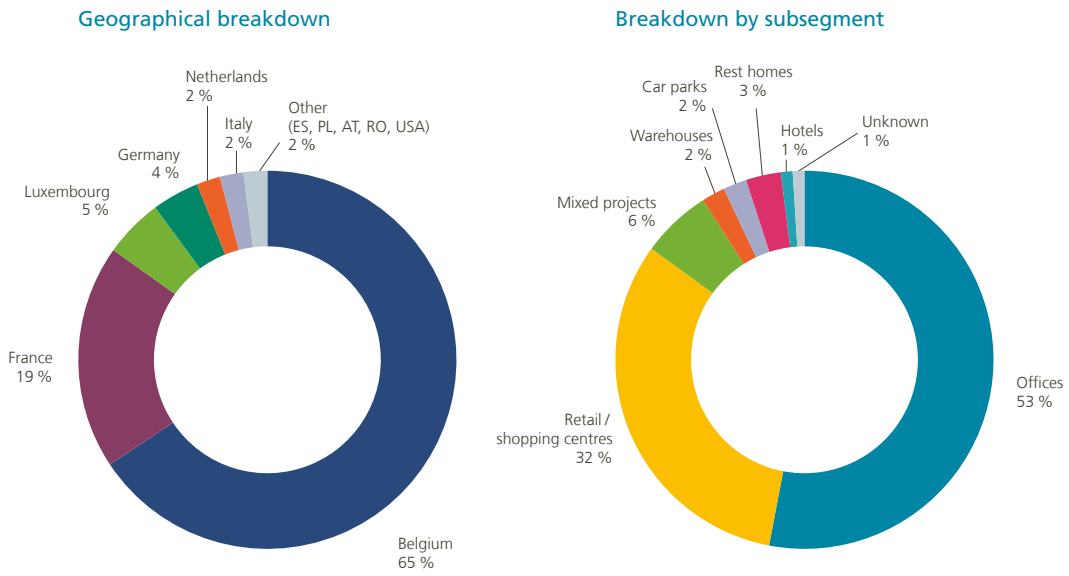
Exposure to foreign CRE markets and companies is most significant in the corporate bonds portfolio (97 % of bonds are issued by foreign CRE companies). The same holds true for exposure through commercial loans granted to CRE companies as well as through investment fund shares, as real estate funds are mostly based abroad, mainly in France (58 %), Luxembourg (27 %) and the United Kingdom (9 %). The monitoring of CRE developments abroad, especially in neighbouring countries, is therefore important when analysing insurers' CRE exposure. In contrast, a domestic bias characterises the CRE equity portfolio, where most of the investments reflect exposure to Belgian REITs.

Belgian REITs are another important investor in Belgian CRE. The CRE exposure of these listed real estate landlords is almost exclusively in the form of direct investment in CRE properties. In recent years, their real estate portfolio grew by double digits, driven by investment and revaluation. But the growth of the portfolio slowed in 2023 as a result of higher interest rates. The fair value of the sector's CRE assets rose to € 33 billion, on a consolidated basis, at the end of 2023.

Figure 6

Direct CRE investment by insurance companies [1]

(in % of the CRE property portfolio, excluding properties for own use)



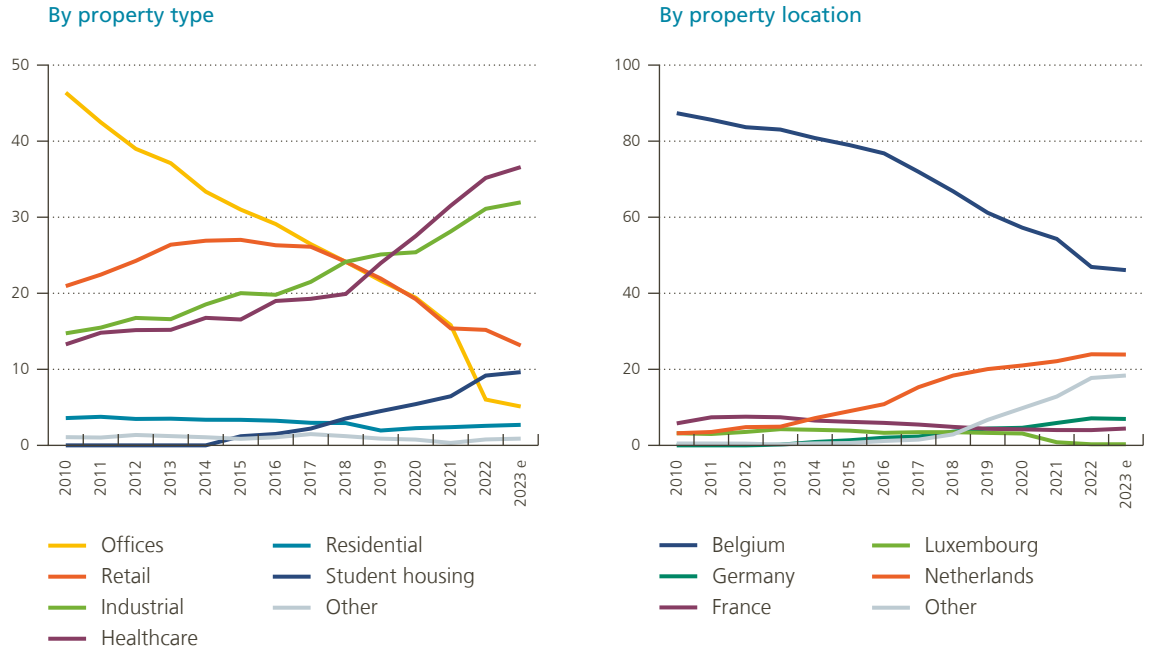
Source: NBB (Solvency II list of assets).

1 Based on data for a subsample of insurance companies.

Figure 7

Breakdown of the real estate portfolio of Belgian REITs

(in % of total)



Source: Annual reports of Belgian REITs.

REITs are subject to specific rules that include, most notably, a mandatory closed-end structure with shares listed on the Belgian stock exchange; a statutory restriction on the (consolidated) gearing ratio to 65 % and an obligation to prepare a financial plan to remain below this ceiling when the debt ratio exceeds 50 %; an obligation to pay out at least 80 % of their net income as dividends; and a requirement to diversify investment risk, with no more than 20 % of total assets invested in a single property.

Belgian REITs are very diverse in terms of their size and their thematic and geographical focus. The sector is also highly concentrated: the three largest trusts – Warehouses De Pauw (WDP), Cofinimmo and Aedifica – together accounted for almost 60 % of the overall sector portfolio at the end of 2023. Almost every REIT is currently pursuing an investment strategy that focuses on a limited number of segments of the CRE market; some even focus exclusively on a single type of property. The three largest REITs are mainly or even exclusively focused on healthcare and industrial real estate. Although other REITs are also active in both market segments, it is the predominance of the three largest trusts that determines the overall composition of the sector portfolio.

As shown in the left-hand graph in Figure 7, healthcare and industrial real estate account for an even greater share of the sector portfolio than the traditional office and retail segments, one that has grown even further in recent years. At the end of 2023, healthcare and industrial property made up almost 70 % of the portfolio, while the retail and office shares declined to 13 % and 5 %, respectively, the latter mainly reflecting the exit of Befimmo, the sector's only pure office player, following its take-over by a Canadian investor in 2022. In addition, the share of other residential real estate, i.e. excluding senior housing and healthcare, has also risen in recent years, mainly driven by the niche student housing segment. Other types of property have a negligible share.

As most REITs are niche players, they have generally pursued a growth strategy focused on geographic diversification and expansion in recent years. In addition to the shift in property type, there has been an overall

international diversification of their investment portfolio. This of course makes Belgian REITs more sensitive to developments on foreign real estate markets.

At the end of 2023, the share of Belgian properties had fallen further to 46 % of the sector's portfolio, reflecting in particular the exit of Befimmo (right-hand graph in Figure 7). With a share of around 24 %, property in the Netherlands accounted for almost a quarter of the entire portfolio. The rest of the international portfolio of REITs is widely spread across Europe. With the exception of the Netherlands and Germany (probably uncoincidentally the countries outside Belgium where all three of the aforementioned largest trusts are active), no country represented more than 5 % of the sector's portfolio.

Through their liabilities, Belgian REITs are also a substantial source of indirect exposure to CRE markets for other financial and non-financial sectors, as shown in Figure 8 based on financial accounts information. Foreign counterparties and Belgian households are the largest providers of funds to the Belgian REIT sector. This funding essentially takes the form of equities. Although due to the growing internationalisation of their investment activities, REITs take out loans abroad as well, Belgian banks are their main lenders. At the end of September 2023, lending by Belgian banks to REITs stood at € 4.7 billion. Indirect investments in securities (bonds and equities) issued by REITs, amounting to about € 0.8 billion, accounted for only a minor share of banks' exposure to REITs. Other Belgian financial sector institutions held securities – mainly equities – valued at around € 2.3 billion. Insurance companies and pension funds accounted for the largest share of these indirect investments (€ 1.4 billion).

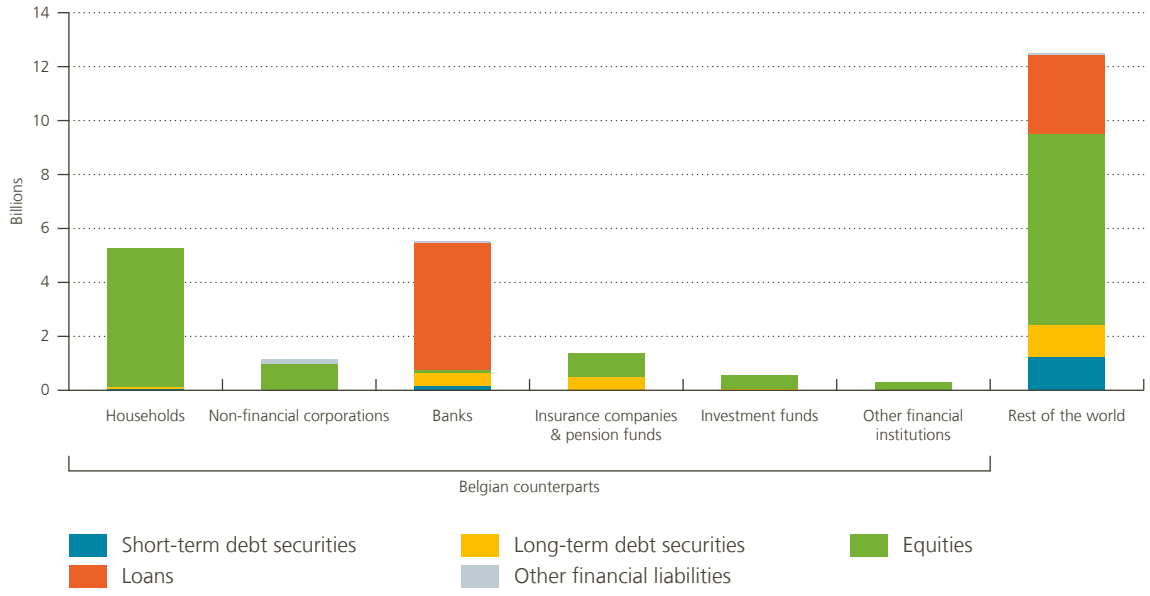
The interest rate hikes since 2022 have affected both the investments and debt servicing costs of REITs.

As regards investments and the overall debt ratio, the strict rules applicable to REITs require quarterly valuation of the real estate portfolio by an independent expert. Increased market yields thus quickly translate into a negative revaluation of the portfolio, automatically leading to an increase in the debt ratio, which is subject to a statutory ceiling of 65 % of the balance sheet total. REITs therefore focused on strengthening their balance

Figure 8

Financial liabilities of Belgian REITs by counterparty and instrument

(end of September 2023 data in € billion, market value)



Source: NBB (calculations based on financial accounts and Corporate Credit Register (BECRIS) data).

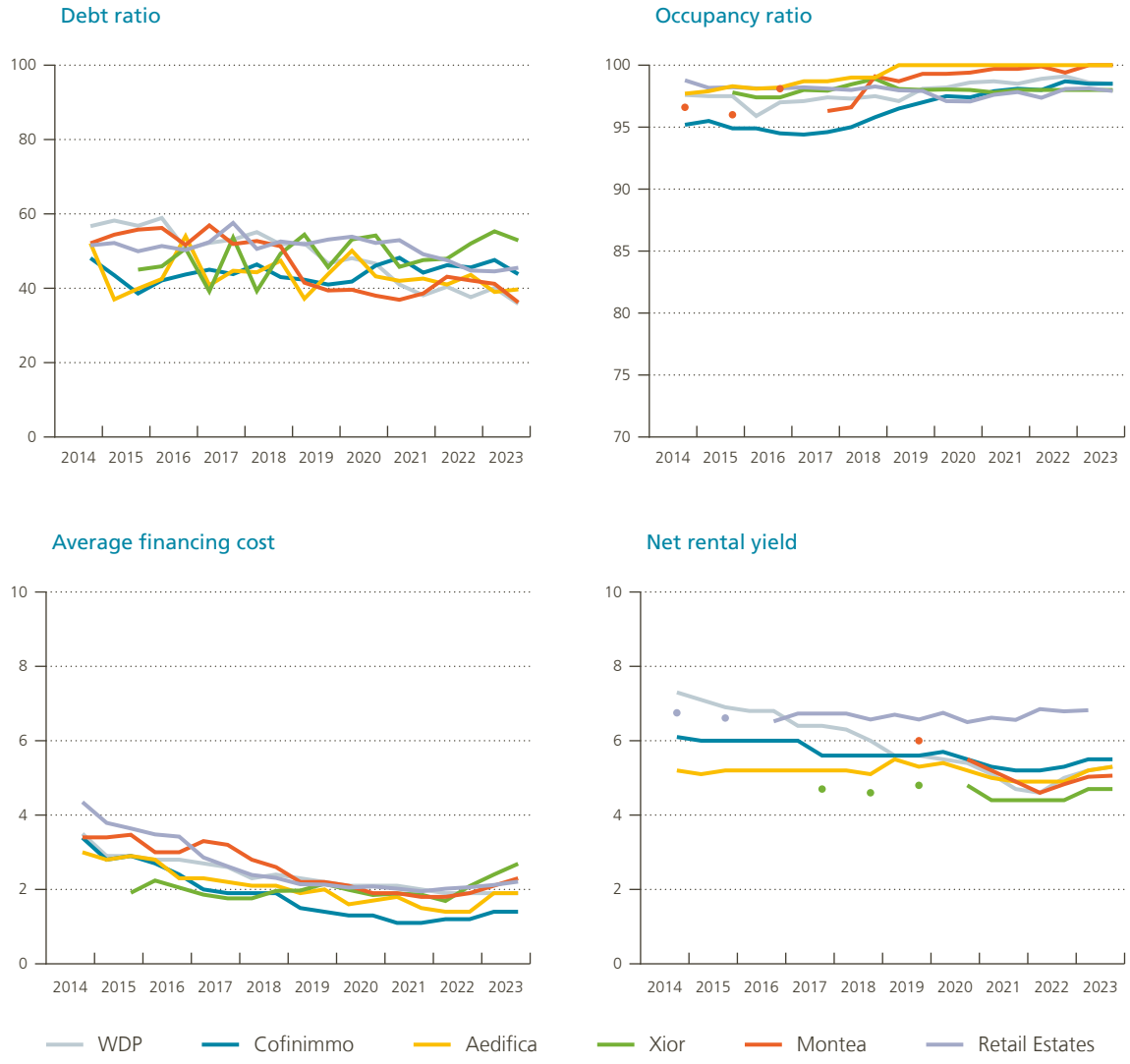
sheet in 2023 in order to keep their debt ratio under control. On the one hand, they adopted a more cautious investment attitude and downsized their portfolio. On the other hand, they strengthened their capital through optional dividends, contributions in kind and (private) capital increases. The upper left-hand graph in Figure 9 indicates in this regard that, with one exception, the six largest REITs, accounting for more than 80 % of the sector portfolio, had a debt ratio of less than 50 % at the end of 2023. For the sector as a whole, the debt ratio of individual REITs ranged from 25 % to almost 53 %.

Debt servicing costs are another transmission channel through which REITs felt the impact of higher interest rates. Statistics based on the annual accounts show in this regard that, at the end of September 2023, the market capitalisation of REITs had fallen to around € 15 billion while they had almost € 12 billion of outstanding financial debts. More specifically, the latter took the form of debt securities and, especially, loans from domestic and foreign banks. A large portion of these loans have a variable interest rate, making them vulnerable to

Figure 9

Key operational and financial figures for the six largest Belgian REITs

(%)



Source: Annual and semi-annual reports of Belgian REITs.

interest rate hikes. REITs therefore traditionally hedge their interest rate risk to a high degree and over several years using hedging instruments. As a result, the increase in the average debt servicing cost remained limited in 2023, as illustrated by the lower left-hand graph in Figure 9.

The rapidly increasing interest rates and volatile environment posed a challenge to REITs on several fronts, as reflected in the sharp declines in their share prices. Nevertheless, Belgian REITs generally reported a solid operational performance over the past year. High occupancy rates, in combination with rent indexation, contributed to growth in rental income and an increase in rental yield (right-hand graphs in Figure 9). The spread between the latter and the average financing cost therefore remained fairly large and stable.

Bank CRE exposure

Belgian banks' CRE exposure mainly takes the form of business loans. By granting loans to (financial and non-financial) corporations for the purchase, construction or development of commercial real estate or through the use of CRE as collateral for loans, banks are indirectly exposed to CRE-related risks. This section maps this exposure and provides additional information on the characteristics of these loans and their borrowers and some indications of their riskiness for lenders.

According to FINREP prudential reporting, the level of CRE exposure of Belgian banks (at the consolidated level) ranged from 24 % to 34 % of total loans to non-financial corporations (at the end of 2023), depending on the CRE definition used : € 74.1 billion in loans to firms active in the construction and real estate sectors, € 91.2 billion in loans collateralised by CRE and € 102.7 billion in CRE loans according to the ESRB definition. These are amounts reported by Belgian banks at the consolidated level and include about 20 % of non-domestic CRE loans granted via foreign subsidiaries, branches or cross-border lending.

According to granular loan-by-loan information in the Corporate Credit Register (BECRIS database) and excluding foreign loans, Belgian banks' domestic CRE loans totaled around € 81 billion, according to the ESRB definition, equivalent to 34 % of all corporate loans. This amount does not necessarily remain on the balance sheets of banks as about 19 % (€ 15 billion) of the exposure is securitised (although the bulk consists of retained securitisations). In addition, CRE loan exposure is mostly in the form of (non-revolving) loans (90 %). The remainder is in the form of revolving loans (6.7 %), financial lease agreements (2.5 %) and overdrafts (0.7 %).

A few key characteristics of this CRE loan portfolio are illustrated in Figure 10.

Of the total CRE exposure of € 81 billion, 59 % has a CRE purpose in the sense that it is directly related to financing the acquisition or construction of (commercial or residential) real estate. Among loans with a CRE purpose, about 60 % are (at least partly) also collateralised by CRE. Figure 10 also shows that the volume of loans to purchase or finance the construction of (commercial or residential) real estate has remained robust since the end of 2022. The remaining 41 % of the total CRE exposure is related to loans for other (non-CRE) purposes which are nonetheless considered CRE loans, according to the ESRB definition, as they are collateralised by CRE. Most of these loans reportedly serve to provide "working capital" or are for "other purposes" and decreased in size over the last year, especially the latter category.

Loans with a CRE purpose appear to be less subject to refinancing risk as they are characterised by generally longer maturities than those without a CRE purpose (77 % with an initial term of over 10 years for the former category compared with 48 % for the latter).

The lower graph in Figure 10 shows how the share of non-performing loans (NPLs) has evolved since the end of 2022 for the same types of CRE loans. Focusing first on loans with a CRE purpose, the percentage

Figure 10

CRE exposure of Belgian banks by purpose of the instrument

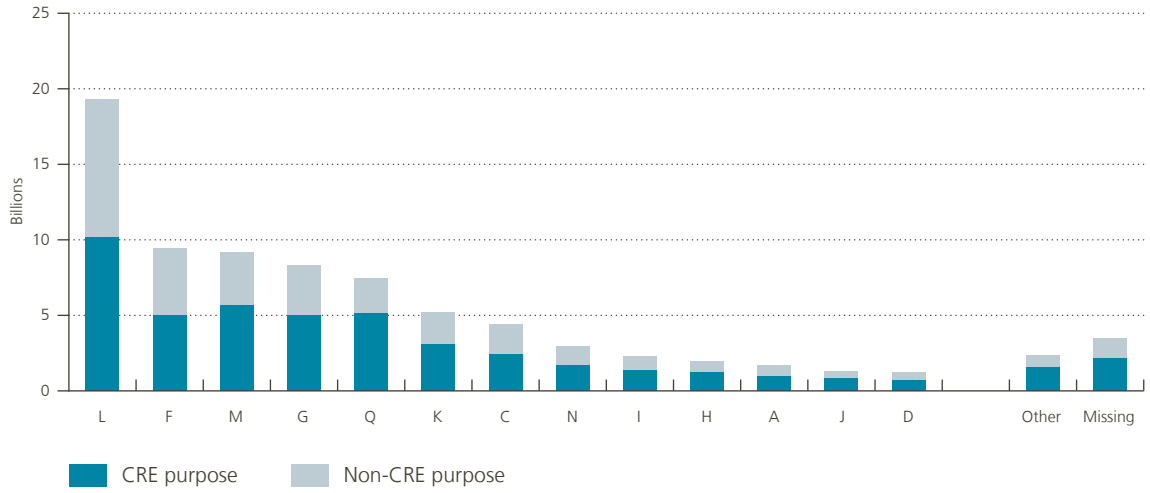
Source : Corporate Credit Register, own calculations.

of NPLs is higher for CRE construction loans than for CRE purchase loans. For loans with a CRE purpose, the percentage of NPLs held stable or slightly decreased in the course of 2023. Therefore, there are currently no clear signs of the materialisation of risk for these loans despite the unfavourable environment due to higher financing costs. However, a small increase in NPLs can be observed for the category of loans without a CRE purpose that are backed by CRE.

Figure 11 focuses on the borrower side of CRE loans in Belgium and looks at the distribution by sector. This breakdown shows that sector L (real estate activities) is by far the largest, accounting for about € 19.3 billion or 24 % of the total domestic CRE loan portfolio (€ 81 billion). It should be noted that while not all exposure to "real estate activities" meets the ESRB definition of a CRE loan, the majority does (61 %). Sector F (construction) follows with € 9.4 billion of CRE loans, an amount comparable to three other sectors: namely sectors M (professional, scientific and technical activities) with € 9.2 billion, G (trade) with € 8.3 billion, and Q (health) with € 7.4 billion. At first sight, the latter three sectors combined, whose main activities are

Figure 11

Sector breakdown [1] of the CRE exposure of Belgian banks



Source: Corporate Credit Register, own calculations (data for year-end 2023).

1 NACE codes and corresponding description:

A Agriculture, forestry and fishing
C Manufacturing
D Electricity, gas, steam and air conditioning supply
F Construction
G Wholesale and retail trade; repair of motor vehicles and motorcycles
H Transportation and storage
I Accommodation and food service activities
J Information and communication
K Financial and insurance activities
L Real estate activities
M Professional, scientific and technical activities
N Administrative and support service activities
Q Human health and social work activities

Other:

B Mining and quarrying
E Water supply; sewerage; waste management and remediation activities
O Public administration and defence; compulsory social security
P Education
R Arts, entertainment and recreation
S Other service activities
T Activities of households as employers; undifferentiated goods and services producing activities of households for own use
U Activities of extraterritorial organisations and bodies

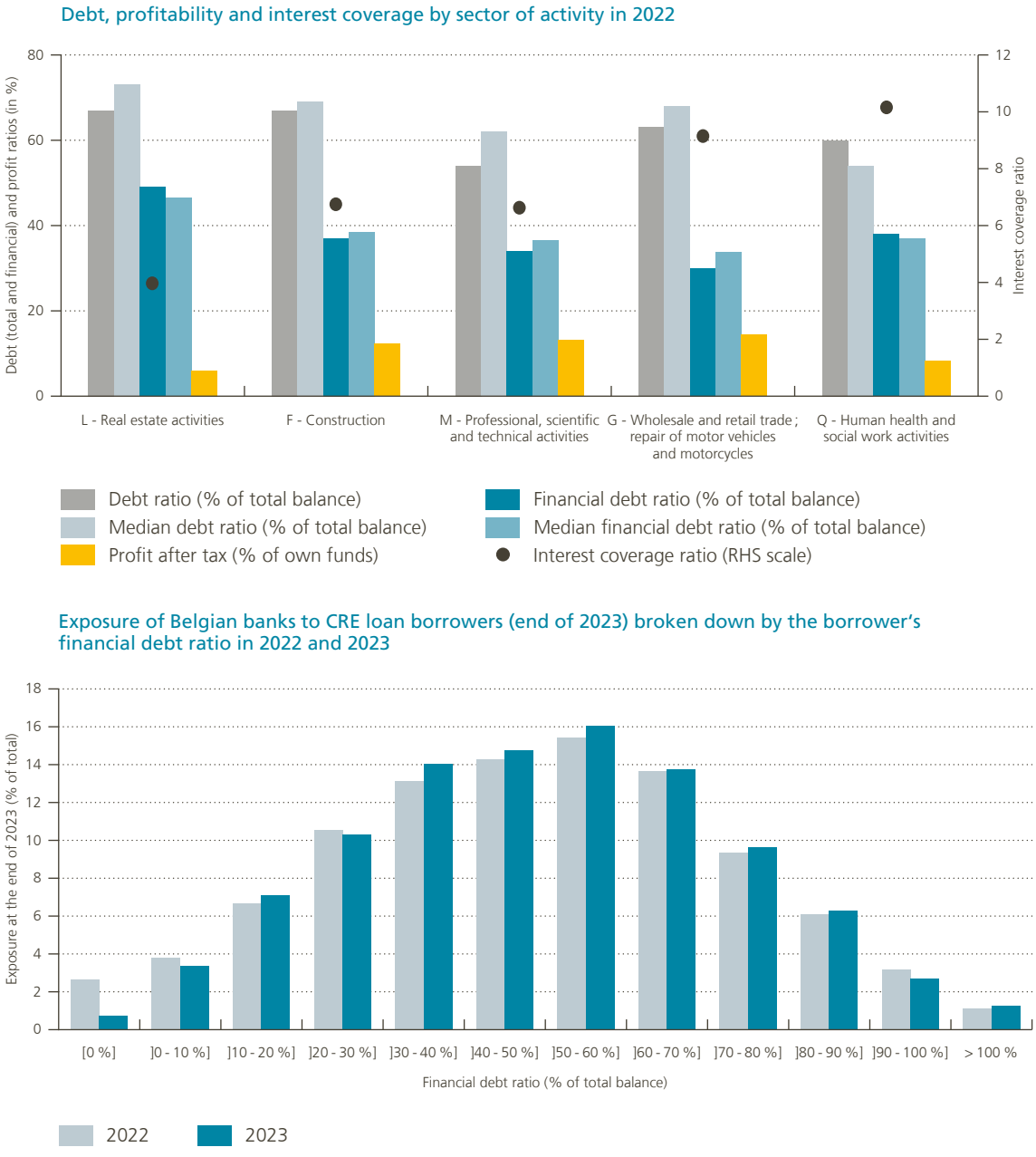
not directly linked to the CRE market, account for about one-third of the total CRE exposure of Belgian banks. The remaining € 27 billion is spread across the less prevalent sectors.

The exposure mapping based on BECRIS loan data can be enriched with an analysis that links the domestic CRE loan exposure of Belgian banks to the annual accounts filed by borrowers with the Central Balance Sheet Office (Figure 12).

The upper graph in Figure 12 shows that the average debt ratio on the balance sheet of CRE loan borrowers ranges from 50 % to 70 % in the five abovementioned sectors of activity, with indebtedness in the upper range

Figure 12

Financial ratios of borrowers of CRE loans in Belgium



Source : Corporate Credit Register, Central Balance Sheet Office, own calculations.

for sectors L (real estate activities) and F (construction). Looking at financial debt only, the average indebtedness drops to 50 % in sector L but is still markedly higher than in the other four sectors, where it ranges from 30 % to 40 %. In addition to having a higher level of indebtedness, sector L (real estate activities) is also characterised by a lower average level of profitability, as measured by the ratio between profit after tax and own funds (6 %). This is about half the average profitability in sectors F (construction), M (professional, scientific and technical activities) and G (trade). Sector Q (health) has a profitability ratio that is comparable to that of sector L (real estate activities) but includes participants that are less driven by a profit-making objective. Again, sector L stands out relative to the other four sectors in terms of its interest coverage ratio (the ratio of earnings before interest and taxes, or EBIT, to interest expense), with a result of four, meaning that, on average, a relatively large share of the earnings (one fourth) is used to pay interest on outstanding debt.

The lower graph in Figure 12 shows the breakdown of Belgian banks' exposure (at the end of 2023) to CRE loan borrowers based on average balance sheet indebtedness for 2022 and 2023. The analysis is based on a fixed sample of corporations whose 2023 annual accounts were available on the cut-off date for this publication. Although the size of the sample was limited (many firms had not yet filed their annual accounts for 2023), it reveals a small shift towards higher borrower indebtedness in 2023 compared with 2022. If not well managed by firms, the increasing indebtedness of borrowers of CRE loans – exacerbated by the current higher interest rate environment – could give rise to an issue of debt sustainability and consequently increase the vulnerability of Belgian banks to these loans.

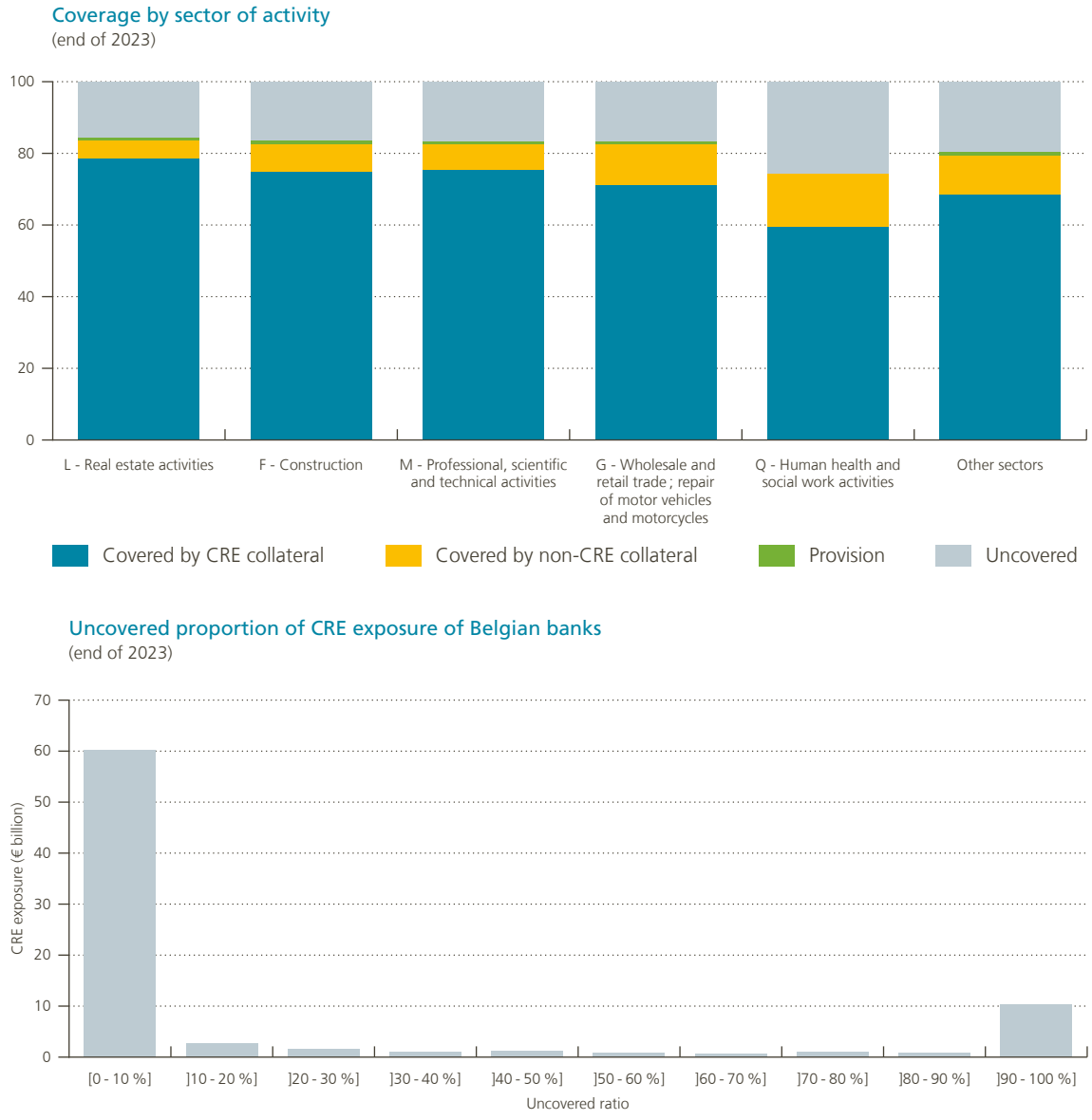
An important mitigating factor for bank credit risk is the fact that a relatively high percentage of CRE loans are secured by collateral consisting mainly, but not exclusively, of a mortgage or authorisation to mortgage CRE (a so-called "mortgage mandate"). Again focusing on the same five sectors of activity, the upper graph in Figure 13 shows that the share of CRE loans covered by some type of collateral or credit risk provision reaches an average of close to 85 % of the value of the loans, except in sector Q (health) where coverage is 75 %. These figures imply that, in normal circumstances, Belgian banks should be able to recover a large share of the value of the loan by selling the collateral in the event of default. However, should a commercial real estate crisis arise with many borrowers simultaneously facing financial difficulties, banks could struggle to recover the amounts backed by CRE collateral, as CRE market conditions would be challenging, impairing the ability to sell a large number of properties at a fair price. In this case, unexpected losses could emerge for the banking sector. In this regard, the lower graph in Figure 13 shows that the relatively high average backing of CRE loans by collateral actually hides a bimodal distribution where, at one end, most loans (about € 60 billion) are substantially or fully covered by the value of the collateral while, at the other end, about € 10 billion of CRE loans are barely covered or not covered at all by collateral. This points to the potential presence of pockets of risk, especially when combined with high indebtedness and/or low profitability on the part of borrowers. Banks should therefore closely monitor this exposure as significant unexpected losses could arise in the event of a large number of defaults in the CRE loan portfolio.

In the current context characterised by a CRE market slowdown and where debt sustainability could deteriorate for some borrowers, the question of the appropriate valuation by banks of the collateral used to back CRE loans is therefore a point for attention. Banks should make sure that the value of the collateral used in their risk exposure calculations corresponds to its actual value in the event it has to be recovered. This recovery value fluctuates in line with market developments. As explained in section 2, market developments show lower valuations for Belgian CRE assets as a result of higher interest rates. In current market conditions, banks should thus analyse the value at which CRE collateral is recorded and adjust the value where necessary. This should be done in a sufficiently conservative way, erring on the side of caution given the prevailing uncertainty caused by the sharp increase in interest rates and the dearth of benchmark transactions on the market.

Another point of attention for financial stability is the potential development of a negative spiral, whereby cash-strapped real estate companies are forced to liquidate large volumes of CRE assets in thin market condition, resulting in fire sale prices that become the benchmark for valuing similar assets on the books of market

Figure 13

Coverage of CRE loans of Belgian banks



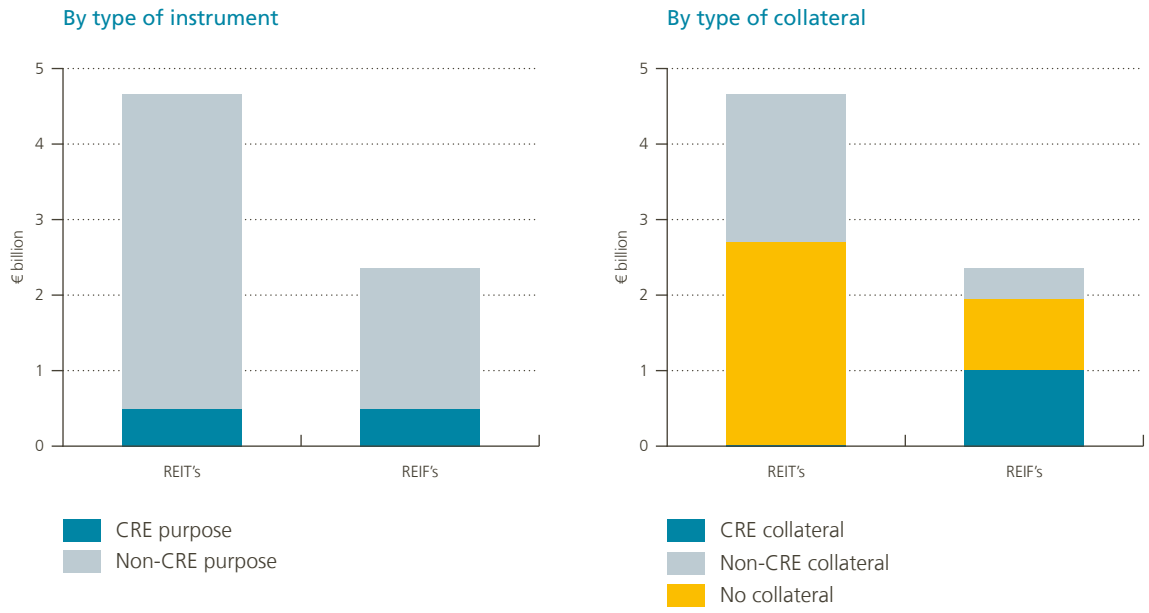
Source : Corporate Credit Register, own calculations.
Note : In the lower graph, the uncovered share is calculated per borrower and bank.

participants. Consequently, in addition to reviewing the value of CRE collateral, banks should closely monitor credit risk related to their CRE loan exposures and have a pro-active approach as soon as borrowers become vulnerable. For those facing financial difficulties due to the current challenging context on the CRE market, banks should define adequate credit strategies considering the specific situations of the borrowers, including potential forbearance actions when appropriate. At the same time, banks should set aside sufficient capital in order to deal with a potential increase in credit losses on some of their real estate loans as the pass-through of higher interest rates to the borrowers of these loans continues.

Other key actors on the CRE market are REITs and real estate investment funds (REIFs). Belgian banks' total exposure to REITs and REIFs amounts to € 4.7 billion and € 2.4 billion, respectively (Figure 14). Only 11 %

Figure 14

Exposure of Belgian banks to Belgian REITs/REIFs (end of 2023)



Source: Corporate Credit Register, own calculations.

of loans to REITS and 46 % of loans to REIFS match the ESRB definition for CRE exposure. In fact, it turns out that most loans granted to these companies are not used for the acquisition of commercial property and are not secured by CRE-type collateral. Instead, many loans to REITs and REIFs serve to provide working capital, finance or refinance debt or are for other purposes. There is hardly any exposure to REITs in the form of loans secured by CRE-type collateral (due to legal restrictions). Instead, about 60 % of such loans are backed by no collateral at all, and the remaining 40 % is secured by other types of collateral. For REIFs, about 40 % of banks' total loan exposure is backed by CRE. Given that the business of REITs and REIFs is obviously sensitive to developments on the CRE market, banks' exposure to these companies is relevant when analysing their CRE loan portfolios. In addition to lending to REITs, banks also have CRE exposure to these trusts through their holdings of the securities issued by them. However, as mentioned above, this indirect exposure is quite small.

4. Potential spillovers from the residential real estate market

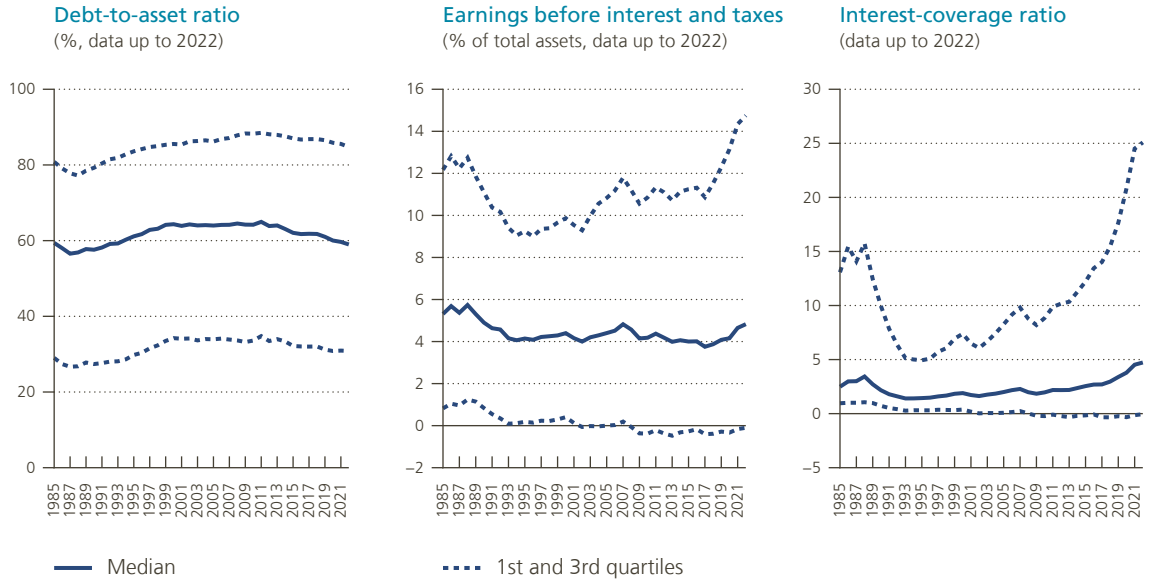
This section focuses on spillovers from the residential real estate (RRE) market and the share of Belgian banks' exposure to real estate firms that could potentially become more vulnerable in the event of a shock to the RRE market. While the lower level of transactions on the Belgian RRE market could spill over to bank loans to Belgian real estate companies that are mainly active in the Belgian housing market (development or construction), the risk of reverse spillover effects from the Belgian CRE market to the Belgian residential real estate market is mitigated by the fact that residential real estate (housing) is a rather limited segment of the Belgian CRE investment/landlord market (in contrast with other countries where CRE landlords play an important role in the domestic housing market).

The assessment of potential spillovers from the RRE market to the corporate lending portfolio of Belgian banks is based on the assumption that a shock to the Belgian housing market could impact the risk profile of corporate loans via two channels: the company's activity and/or the real estate securing the loan.

Firms that are active in the Belgian housing market (through construction or other real estate activities) are sensitive to shocks to the residential real estate market and may have to cope with lower turnover and/or rising losses in the event of a housing crisis (or a significant slowdown in the number of transactions on the housing market). For banks, this would eventually translate into a higher probability of default on certain loans to such companies. Moreover, the initial shock could be amplified through its negative impact on the real economy, given the significant share represented by both markets in the value added of the Belgian economy (13.4 % of GDP) and employment (7 % of the active population). On the other hand, many construction and real estate firms improved their financial situation during the period of low interest rates and are now better able to cope with adverse shocks (Figure 15).

Figure 15

Financial ratios of construction and real estate firms



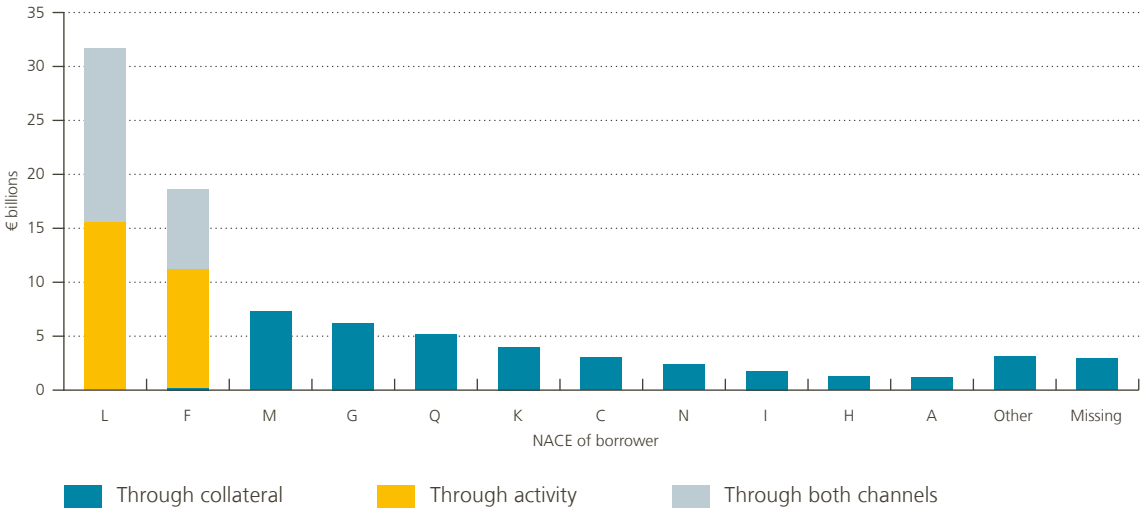
Source: Central Balance Sheet Office, own calculations.

In addition to this default channel, a shock to the real estate market could trigger a price correction for the properties used as collateral to secure corporate loans.

Based on BECRIS data, it is estimated that 38 % of all corporate loans (€ 89 billion at the end of 2023) are potentially vulnerable to spillovers from the residential real estate market through one or both of the abovementioned transmission channels. Of these vulnerable exposures, € 24 billion (27 %) could be impacted through both the borrower's activity and the collateral used, € 38 billion (43 %) only through the collateral, and the remaining € 27 billion (30 %) only through the company's activity. It should be noted that most of the loans identified as vulnerable to spillovers also match the ESRB definition of CRE exposure (€ 67 billion out of € 89 billion) and thus form part of the CRE loan exposure reviewed in the previous section. This also shows that, depending on the issue, it may be worth moving away from the ESRB definition to include certain exposures and exclude others.

Figure 16

Sector breakdown [1] of Belgian banks' exposure potentially vulnerable to spillovers from the RRE market (end of 2023)



Source: Corporate Credit Register, own calculations.
1 See footnote 1 in Figure 11 for the list of NACE codes and corresponding descriptions.

The sectoral breakdown in Figure 16 shows that the bulk of corporate loans vulnerable to RRE spillovers is to companies active in sectors L (real estate) and F (construction) and to a lesser extent to those active in sectors M (professional, scientific and technical activities) and G (trade). In the event of a shock to the residential real estate market, additional provisions may be needed to cover losses on these loans.

The share of corporate loans potentially vulnerable to spillovers from the housing market has remained broadly stable since the end of 2022.

5. Conclusion

While it is important to be careful when drawing general conclusions given the very heterogeneous composition of the CRE markets, the various participants in these markets and the many and varied ways in which financial institutions incur direct and indirect exposure to CRE-related assets, it is clear that the ending of the lengthy period of very low interest rates, which began in 2022, has been a very challenging time for Belgian real estate firms, one that has tested the resilience of the Belgian CRE market. While the end of monetary policy tightening and the forthcoming falls in interest rates could bring some relief for market participants in the coming quarters, the operating environment for Belgian real estate firms and CRE market participants is likely to remain challenging for the foreseeable future.

Given the considerable exposure of the Belgian financial system to CRE-related assets, this stressful period raises a few points of attention for financial stability.

One issue relates to the need for financial institutions to value their CRE exposures in a sufficiently conservative way by erring on the side of caution given the prevailing uncertainty caused by the sharp increase in interest rates and the dearth of benchmark transactions on the market. While regularly traded CRE-related equities and

debt instruments have seen their value fall sharply since the start of the interest rate hikes, indicators tracking the valuation of non-traded CRE assets have revealed less pronounced developments, raising questions as to how conservatively financial institutions revalue their CRE-related exposures in response to market developments. This consideration is especially relevant in cases where the book value is assumed to reflect the so-called fair or market value of CRE exposures.

A second point of attention for financial stability is the potential development of a negative spiral, whereby cash-strapped real estate companies are forced to liquidate large volumes of CRE assets in thin market condition, resulting in fire sale prices that become the benchmark for valuing similar assets on the books of market participants. Consequently, in addition to reviewing the value of CRE collateral, banks should closely monitor credit risk related to their CRE loan exposures and have a pro-active approach as soon as borrowers become vulnerable. For those facing financial difficulties due to the current challenging context on the CRE market, banks should define adequate credit strategies considering the specific situations of the borrowers, including potential forbearance actions when appropriate. At the same time, banks should set aside sufficient capital in order to deal with a potential increase in credit losses on some of their real estate loans as the pass-through of higher interest rates to the borrowers of these loans continues.

While the recently activated countercyclical capital buffer (see the macroprudential report for more information) enhances the resilience of Belgian banks to unexpected losses on their large CRE loan portfolios, the Bank will continue to monitor developments in this field very closely and assess whether additional measures are necessary. In this connection, particular attention will be paid to the valuation practices applied by financial institutions to non-traded CRE exposures. It will be necessary to learn from recent observations in this area and remediate any shortcomings going forward, especially where the book value is assumed to reflect the so-called fair or market value of CRE exposures.

The Belgian fintech ecosystem

Sarah Cheliout*

At the government's request, the Bank carried out a study of the Belgian fintech sector in 2023. In addition to mapping the fintech ecosystem and assessing its economic importance, the study identified the key characteristics of companies active in this field. It found that the sector is currently composed of two main subsegments: fintech companies offering business-to-business (B2B) solutions, particularly to the financial sector ("tech4fin companies"), and those offering payment-related solutions. It also identified several horizontal factors that can help facilitate the further development of the ecosystem and highlighted the complementary role played by various non-financial sector actors as well as the synergies that could be enhanced within the ecosystem.

Introduction

Against the backdrop of rapidly evolving digital technologies and the associated innovative opportunities in the area of financial services, fintech could cause disruptive changes, meaning that developments in this field warrant close monitoring.

The digitalisation of the financial sector is now a reality. The digital revolution has radically changed how banks, insurance companies and payment institutions provide services and how they operate. Retail customers and firms have become increasingly adept at using digital solutions to make saving, borrowing, investing and paying easier and faster. Fintech companies generate financial innovations and can be both partners and competitors to financial incumbents.

The fintech sector is still small compared with the traditional financial sector, but it could grow rapidly and create challenges for policymakers. From a financial stability perspective, various factors need to be considered. On the one hand, fintechs can help mitigate financial risks and deepen and diversify financial markets. On the other hand, they could amplify operational risks and possibly induce risk-taking behaviour.[1] Considering its potentially disruptive impact, fintech could lead to a profound and rapid transformation of the financial sector and therefore requires appropriate monitoring, supervision and regulation to harness the benefits while adequately mitigating the risks.

As fintech could become a strategic sector for the Belgian economy, it merits the attention of the authorities. To establish an initial objective basis and following a request by the government, the Bank carried out a study

* The project was conducted with Françoise Guebs and in collaboration with Christophe Piette and Jeroen Lamoot.

1 See inter alia Financial Stability Board (2017), Financial Stability Implications from FinTech Supervisory and Regulatory Issues that Merit Authorities' Attention, June; Serhan Cevik (2023), The Dark Side of the Moon? Fintech and Financial Stability, IMF Working Paper WP/23/253, December; Selim Elekdag, Drilona Emrullahu, Sami Ben Naceur (2024), Does FinTech Increase Bank Risk Taking?, IMF Working Paper WP/24/17, January.

of the sector in 2023. Its aim was to map the various segments underpinning the sector, assess their economic importance and identify the main financial markers of fintech companies. The study also identified the various cross-cutting axes around which fintechs gravitate within their ecosystem, as well as possible levers and facilitators.

Fintech is a broad concept

Various definitions of the term fintech exist. In this article, the definition of the Financial Stability Board[2] is used, according to which fintech is "financial innovations that integrate digital technologies, leading to new products, services and applications, but also new business models or new processes, having a material effect on the financial sector or on the provision of financial services".

This definition encompasses a wide range of innovative financial products and services, including banking apps, investment chatbots and personal finance management dashboards. New or novel payment services offered by fintechs include the issuance of virtual pre-paid cards, cashback programmes and loyalty programme services. On the insurance side, online claims management and the underwriting of on-demand insurance embedded in online purchases are examples of new digital financial services provided by fintech firms.

The advantages for the (non)financial firms offering such new services are multiple and include access to a broader network of potential clients, allowing them to benefit from economies of scale. Digitalisation also introduces the possibility to break down ("atomise") the value chain of financial services and launch new products, generating additional revenue for banks and payment institutions. Finally, the use of cloud services to scale underlying infrastructure, the optimisation of cost and risk management strategies through automated processes, and the removal of friction from payment and settlement services are examples of how fintech applications can enhance operational efficiencies.

For purposes of this article, the word "fintechs" refers to firms offering or developing digital financial innovations, products or services for retail or business customers. A variety of firms falls under this definition. They may be from different sectors (financial[3] or non-financial firms or purely technological businesses) and of different sizes (start-ups, small and medium-sized enterprises or large financial institutions, so-called "incumbents"). They may be licensed by the competent supervisor – the NBB or the FSMA in Belgium (e.g., an online commercial bank or a crowdfunding platform) – or not (e.g., an IT start-up developing tools to detect anomalies in transactions and anti-fraud solutions or one providing a digital identity to seamlessly authorise connections and sign financial transactions).

The digital technologies developed by fintechs can be adapted and modulated in order to be applied across various sectors: the financial sector then becomes only one of a large range of potential customers. Moreover, several waves of technological innovations and applications have already taken place. Some have even peaked and are past maturity.

With that in mind, the customary scope of the supervisory focus is extended in this analysis to cover non-financial fintech start-ups. The universe of fintech firms can be thought of as an ecosystem, with a continuum of digital financial services supplied by an eclectic fabric of companies.

2 Financial Stability Board (2017), Financial Stability Implications from FinTech Supervisory and Regulatory Issues that Merit Authorities' Attention, June.

3 The definition of an "innovative financial incumbent" used in this analysis is based on the results of surveys carried out by the FSMA and the NBB of banks and insurance companies, which shed light on institutions with the highest digital maturity scores. It should be noted that suptech tools at the NBB and the FSMA, developed or used nationally or cooperatively at European level, fall outside the scope of this analysis.

Methodology – a primer on the fintech firm-level database

The NBB's study focused on the domestic market, in line with the scope of the Bank's prudential supervisory remit. It resulted in the compilation of a comprehensive database, created in stages:[4]

- Multiple lists of Belgian companies were merged into a single one. The initial list included financial institutions, banking partners and subsidiaries active in the fintech sector, identified by the NBB and the FSMA. This was complemented by a list provided by industry associations and ultimately by the addition of firms identified by the three regional governments of Belgium.

- Subsequently, data were cross-checked (removing duplicates and correcting for VAT number, the key used to link with Central Balance Sheet Office data).

- The third step involved the establishment of a taxonomy of fintech subsegments in order to classify each firm. Building on existing international taxonomies and standards[5], a simplified meta-taxonomy framework was developed to structure and describe the main segments of Belgian fintechs. Each firm was then assigned to one or more categories, based on a grid of keywords relating to the products and services they offer on the market.[6] Seven main subsegments were identified (see box 1).

- Finally, the database was linked to data in the Central Balance Sheet Office to analyse and determine the profile of fintech firms in the different segments. The resulting raw sample was composed of 248 firms. Excluding those for which no data were available (such as foreign firms without a Belgian VAT number), the list was narrowed down to 162.

Quantitative analysis and mapping of the ecosystem

This quantitative analysis enabled the ecosystem to be mapped and a profile of its firms to be drawn up. The mapping of the ecosystem identified two main segments. The first is the provision of business-to-business (B2B) digital financial solutions, particularly to the financial sector ('tech4fin") (34 % of fintechs). This large, heterogenous group consists mainly of SMEs, many with a strong IT-driven profile. The second segment is engaged in the provision of payment services (20 % of fintechs) and is comprised of major international players developing innovative services in open finance. The other segments are online deposits, lending and capital raising (12 %), RegTech and WealthTech (10 % each), and Insurtech (9 %). Fintechs providing crypto and blockchain solutions account for a mere 5 % of the population.

The fintech sector is of limited (direct) economic importance and is influenced by a handful of large payment service providers. To assess the economic importance of the sector, selected key variables were considered:

4 This approach is subject to a number of working hypotheses. Specifically, the sample of firms consisted of those known and identified by supervisors, industry associations and regional governments. Only Belgian and foreign firms with their registered office in Belgium were considered (foreign entities without a Belgian VAT number were thus not taken into account), thereby possibly limiting the effective population of fintech firms serving the Belgian market. Conversely, the definitions and scope of the market capture a broad range of segments, possibly overestimating its size. As for the taxonomy, many business models are difficult to label, with at times diverging views between supervisors and the market. Lastly, this exercise only captures an image at a given point in time: rapid changes in technology, business models and entries/exits could give rise to a need for new data vintages over time.

5 See Basel Committee on Banking Supervision (2018), Sound Practices – Implications of fintech developments for banks and bank supervisors, February; CCAF, ADBI, FinTechSpace (2019). ASEAN FinTech Ecosystem Benchmarking Study. Cambridge, UK; Financial Stability Institute (2020), Policy responses to fintech: a cross-country overview, FSI Insight on policy implementation No 23, January; German Federal Financial Supervisory Authority (BaFin) website on fintech business models.

6 Based on publicly available information on firms' websites.

the number of companies, employment and value added. For comparison purposes, the sector whose activities are the most similar to fintech, namely the IT sector, was used as a reference point.

The fintech sector is largely made up of SMEs and start-ups (companies younger than five years). Their entry in recent years has been stimulated by legislative changes, such as the second Payment Services Directive in January 2018 ("PSD2"), and opportunities and innovations in emerging segments (RegTech, blockchain, etc.).

BOX 1

Taxonomy of the main fintech market segments in Belgium

The following market segments were elaborated based on international standards and using a grid of keywords from Belgian Fintech firms' products and services available on the market:

i. Online deposit and savings services provided by online and direct banks, neobanks, crowdfunding platforms and peer-to-peer lending platforms.

ii. Payment, compensation and settlement services, including e-funds, peer-to-peer transfers, cross-border money remittances and open banking.

iii. Insurtech, including the distribution and underwriting of activities through portals and digital brokers and customised "on-demand" insurance.

iv. WealthTech, namely digital platforms offering investment portfolio and management services, including automation of the provision of financial advice on investment products and of the client interface through the use of algorithms (robo-advice and robo-management).

v. Digital tools to support the provision of services by financial incumbents (so-called "tech4fin") and B2B solutions, including IT software to improve the network infrastructure of financial services, secure portal identification, optimised data classification processes and risk modelling tools, liquidity management and forecasting.

vi. RegTech or digital applications used for regulatory compliance and reporting purposes by financial or non-financial institutions, e.g. solutions to combat money laundering (AML), know your customer (KYC), environmental, social and governance (ESG) reporting, and Basel III compliance.

vii. Crypto & blockchain, meaning architecture solutions in the field of distributed ledger technology (DLT), blockchain networks and cryptography solutions, rather than virtual money exchange platforms.[1]

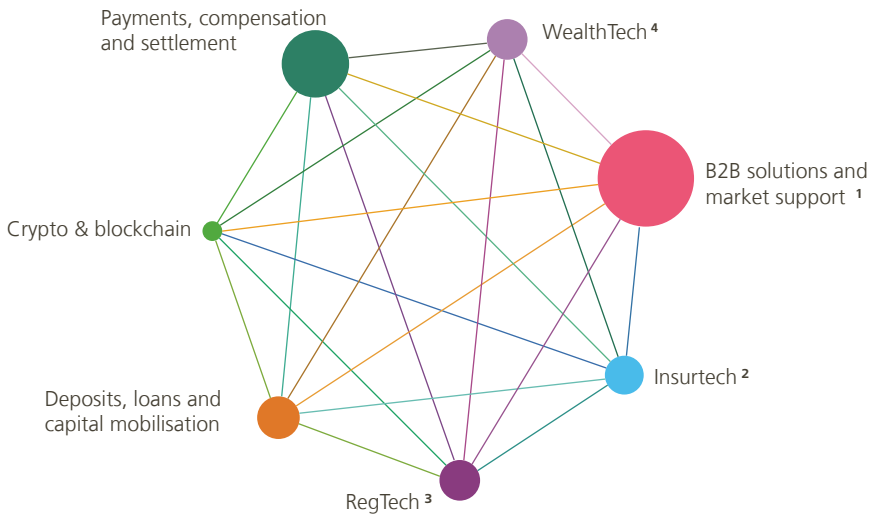
A number of technologies underpin all of these categories, such as the cloud, AI, machine learning algorithms and big data analytics.

1 No such firms were licensed in Belgium at the data collection cut-off date.

Figure 1

Schematic mapping of the Belgian fintech ecosystem

(the size of the circles is proportionate to the number of firms in each segment)



Source: NBB.

1 B2B (business-to-business): all digital solutions designed for business-to-business financial relations or processes.

2 InsurTech: digital solutions and innovative business models for the distribution (comparison portals, digital brokers) and/or underwriting of insurance products and services (mobile insurance applications, integrated online insurance, on-demand cover and peer-to-peer insurance).

3 RegTech: digital applications for regulatory compliance and reporting by financial and non-financial institutions.

4 WealthTech: digital investment portfolio management platforms, including the automation of financial advice on investment products and client interface using algorithms (robo-advice and robo-management).

Broadly speaking, the overall economic importance of fintech remains limited.[7] Employment in the sector has been growing, but was below 6 000 full-time equivalents in 2021, and is concentrated in large groups providing payment or financial market infrastructure solutions (68 % of the sector's employment). In terms of value added, the fintech sector represents only a small fraction of the total value added of all Belgian non-financial corporations (0.3 % in 2021). Here, too, the payments' segment, dominated by a few large players, accounts for the lion's share (78 % of the sector's value added).

Quantitative profile of fintech firms: innovative and usually externally financed

The study used financial variables from the annual accounts, e.g. level of productivity, types of assets held and financing sources, to determine a profile for fintech firms. The sample of fintech firms consisted mostly of IT companies and financial auxiliaries.[8] Despite relatively similar levels of labour productivity compared with the IT sector, fintechs are characterised by higher labour costs. This is due to a skilled workforce with relatively

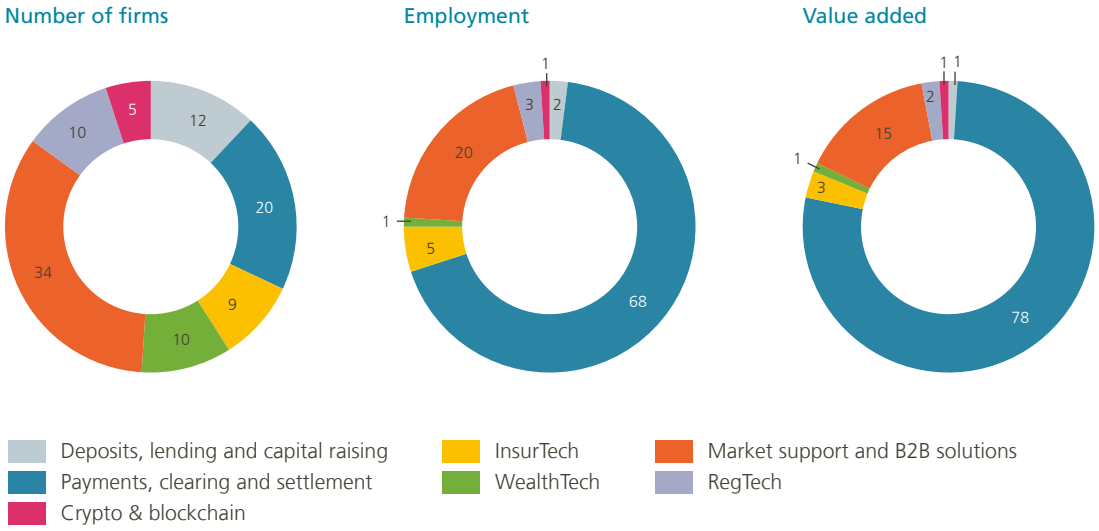
7 Only the direct economic impact of fintech firms is considered here. "Indirect" positive effects from the value added created by the financial innovations embedded in business processes are not included in this analysis. A "who-to-whom" exercise (supplier-customer relations) was carried out but was not conclusive given the limited size of the sample and the disproportionate influence of large firms. Moreover, second and third round effects are fairly difficult to capture, particularly in the market support and B2B fintech subsegment which includes many IT and consultancy firms engaged in sub-contracting and fourth-party outsourcing arrangements, thereby complicating supply chain traceability.

8 Based on the ESA 2010 classification of institutional sectors and NACE codes.

Figure 2

Key economic variables by subsegment of the fintech sector

(% of the total sector)



Source: NBB.

higher wages, which translates into a higher wage share. Moreover, most fintechs are innovative: in 2021, 65 % of firms in the sample reported holding intangible assets on their balance sheet (including software and other R&D expenditures), compared with 13 % of firms in the IT sector.

Fintechs rely on various types of financing: external equity, bank loans, non-bank debt (subordinated debt and bonds) and internal financing (reserves). Equity financing is significant in the fintech sector as the percentage of firms that carried out capital increases over the financial year was substantially higher (27 % of fintech start-ups and 31 % of other fintech firms over the period 2019-2021) compared with the control group in the IT sector (7 % and 6 %, respectively). Such injections of equity capital may come from various sources (funds invested by their mother companies, business angels, venture capital, etc.). Fintechs also tend to have more diversified external financing sources, i.e. both bank and non-bank loans, and for higher amounts than IT firms on average.

However, while fintechs have access to a wide range of external sources of financing, their relatively weaker profitability (compared with the IT sector) inhibits their use of internal resources for financing purposes, which typically relates to the intrinsically young and/or innovative profile of such firms. In short, they do not generate enough cash by selling their products and services to self-finance. Many of them are engaged in the development of specialised digital technologies and hold strategic intangible assets, which may possibly be sold down the road to a financial institution or a larger fintech firm.

Looking more closely at fintech start-ups, many benefit from government aid and other subsidies. Moreover, their early-stage business development and weak profitability require them to raise equity through, for example, (pre)seed fundraising.

BOX 2

Stylised facts from the quantitative analysis

#1. The fintech sector represents only a fraction of Belgian economic activity; employment is growing but remains concentrated in large payment service providers.

#2. The sector consists of many start-ups, with entrants stimulated by legislative changes (PSD2) and new opportunities in certain segments (RegTech, crypto, etc.).

#3. Fintechs are knowledge-intensive firms; their intangible assets have the potential to generate capital gains, making them attractive to investors.

#4. Fintechs have access to diversified external sources of financing; in contrast for many of them, internal financing possibilities remain limited due to low profitability.

Qualitative analysis

The qualitative analysis brought to the fore the diversity within the ecosystem and identified key levers that can be used to foster its development and attract opportunities. The qualitative analysis complemented the quantitative findings. Interviews were carried out with representatives from the fintech ecosystem,[9] aimed at testing the initial findings and determining which factors enable or impede the ecosystem's growth. A few horizontal themes emerged from this exercise.

Talent and research, combined with entrepreneurial skills and mastery of risk management techniques, are the building blocks of success for Belgian fintechs. The strengths identified included high, recognised skills in software coding and engineering, IT architecture and data science within renowned Belgian universities and spinoffs active in cybersecurity, cryptography and quantum computing. However, gaps in local talent were also identified (e.g. as regards IT developers). Entrepreneurial skills are another important aspect: sufficient attention should be paid to articulating commercial needs so as to complement the strong fundamental research basis in Belgium. Without being confined to fintechs, this touches on the use of technology transfers to promote innovation in general. Successful fintechs demonstrate sufficient knowledge of and expertise in risk management, compliance, governance, capital requirements and operational resilience to meet the (more) stringent standards normally applicable in the financial sector, making it an absolute requirement for start-ups to partner with a financial incumbent (see below).

Second, the specific structure of the Belgian fintech ecosystem is shaped by its relatively small size and the presence of international financial institutions and highly digitalised banks and insurance companies that already serve, to some extent, end customers. This naturally tilts the ecosystem towards B2B and tech4fin services rather than B2C. This does not mean, however, that growth in the ecosystem will remain confined to this particular segment. Indeed, a small market is not necessarily a disadvantage, as long as the company's strategy and products respond to unmet needs of the financial sector (within or outside Belgium), and its risk and

9 Interviews were conducted between May and October 2023.

regulatory compliance management and business model are sufficiently agile, resilient and robust. Belgium may also be a good test market before attempting to penetrate larger European markets. However, the geographic proximity of major financial centres and other fintech hubs could lead to competition and divert investment and opportunities away from the country.

The presence of leading international financial actors on the Belgian territory has facilitated partnerships with local fintechs. However, the challenge lies in ensuring that these forms of cooperation lead to the effective diffusion of innovations across the Belgian fintech ecosystem and to widespread benefits, even though large financial firms necessarily pursue the objective of providing their international services in a technologically neutral way.

Achieving a critical mass of Belgian scale-ups is more challenging. The incorporation of these entities into the value chains of larger players can have a significant influence on their market expansion. In keeping with their risk-averse nature, incumbents seeking to partner with fintechs tend to favour scale-ups that demonstrate adequate risk management and operational resilience, and typically prefer full acquisition so as to mitigate outsourcing risks.

During the interviews, concentration in the Belgian banking sector was mentioned. The trend towards exclusivity in partnership agreements could limit the scale-up potential of start-ups, particularly in the tech4fin segment. In addition, the partnership dynamics of foreign banks with local fintechs are influenced by the governance policies applicable to the head office abroad. Finally, procurement processes, both public and private, were also indicated as being complex in Belgium.

Third, the funding of the ecosystem's growth is bolstered by established Belgian venture capital (VC) firms, private equity houses, and public and public-private equity and investment funds. These agents are key to financing fintech start-ups, along with business angels focusing on the early stages of development. Moreover, various forms of (direct or indirect) public sector support, investment subsidies and grants contribute to the growth of start-ups (see above).

However, scale-up funding is subject to limitations, particularly when it comes to large-scale financing rounds (e.g. investments of above €5 million). To overcome these barriers and scale up, fintechs rely on multiple domestic funding sources and also reach out to international markets. The international pursuit of funds may nevertheless require fintechs to relocate their decision-making centre to the investor's market. This will not necessarily result in capital flight, provided the fintech remains tied to its home ecosystem. The international search for funding not only influences the market and business development of scale-ups but also provides them with networking and product placement opportunities and enables them to acquire a reputation as having a sustainable and credible business model.

Finally, the ecosystem's growth is influenced by the dynamics among various key stakeholders: financial incumbents, venture capital firms, accelerators, venture studios, tech clusters and university spinoffs. This interconnectedness fosters an environment conducive to growth. The interviews revealed that venture capital firms (VCs) and business angels with international clout and a proactive approach are key enablers (as suggested in the quantitative analysis by the amount of equity investment in fintech firms). Accelerators and incubators provide start-ups with coaching and support to develop sustainably and act as intermediaries by putting start-ups into contact with VCs. However, they do not work exclusively with fintechs and are active in many technological segments. Belgium's central location in the EU and the presence of the EU regulatory authorities in the country constitute another advantage, facilitating business within the European market and leveraging international networking opportunities.

Addressing the fragmentation observed in the ecosystem is a critical issue. A holistic approach, encompassing funding pools, tax policy and support structures such as tech accelerators and dedicated physical offices to promote networking, would significantly enhance the ecosystem's cohesion and efficiency. Fostering a unified "community" of interconnected key actors would facilitate the creation of a robust network in which firms'

BOX 3

Stylised facts from the qualitative analysis

#1. Talent and research, combined with entrepreneurial skill and a mastery of risk management techniques, are the building blocks of success for Belgian fintechs.

#2. The presence of leading international financial actors on the Belgian territory has facilitated partnerships with local fintechs. However, achieving a critical mass of scale-ups is more challenging.

#3. The funding of the ecosystem's growth is bolstered by established Belgian venture capital firms, private equity players, and public and public-private equity and investment funds. Access to international funding appears necessary for further expansion.

#4. The ecosystem's growth is influenced by dynamics among various key stakeholders: financial incumbents, VCs, accelerators, venture studios, tech clusters and university spinoffs. This interconnectedness fosters an environment conducive to growth.

#5. Belgium's central location within the EU is another advantage. However, addressing the fragmentation observed in the domestic ecosystem is a critical issue.

business models, development stages and risk profiles are matched with appropriate capital and funding sources. Such a strategy could help to catalyse deals, partnerships and growth opportunities, particularly for scale-ups so as to reach a critical mass. Moreover, leveraging the expertise of seasoned entrepreneurs in the field would provide invaluable mentorship opportunities and pivotal support to promote the ecosystem's branding and international position.

Policy considerations

During the interviews, the importance of a regulator that is receptive to innovation, simplification and clarity was mentioned. A regulator open to dialogue with the sector was unanimously welcomed; more mixed views were expressed on sandboxing.

A clear regulatory framework is essential to guide the industry through the digital transformation and incentivise new activities while adequately capturing and monitoring emerging risks (the "same activity, same risk, same regulation" principle). This entails ensuring consumer protection and addressing privacy and security concerns. The potential benefits of digital finance – such as efficiencies in cross-border payments and settlement (wholesale CBDCs, DLTs), open finance, the growth of embedded and customised financial solutions, data collection and value creation, and compliance with reporting requirements (ESG) – can best be reaped in a well-defined regulatory environment. Key accompanying legislation, either adopted (DLT Pilot Regime, MiCA, DORA, instant payments, European Single Access Point, AI Act) or proposed (PSD3/PSR, FIDA, the strategy on supervisory data in EU financial services, the digital euro), is a step in the right direction and should be further leveraged.

Supervisory preparedness for digital financial technologies should be further pursued. This task is a challenging one as the traditional boundaries of oversight are becoming increasingly blurred. The modularity of digital solutions (e.g., application programming interface or API) allows them to be applied across many sectors (including the financial sector). Seeing the full picture becomes even trickier as technologies are cross-border and new financial products and services are created along a fragmented value chain. In such an ecosystem, the supervisory authorities must adapt to capture all relevant risks and set prudent corresponding requirements.

Conclusion

The mapping exercise identified the actors and sectors in which fintech activity in Belgium is concentrated. Business-to-business (B2B) solutions, particularly for the financial sector (tech4fin), and payment-related solutions stand out. Despite the sector's modest size, its growth potential and integration with digital finance present new opportunities. The study also described the importance of several horizontal levers in the ecosystem and the complementary role played by various actors in fostering a unified "community" that can leverage these interconnections for mutual benefit.

Some segments may already have reached maturity while others still have potential waiting to be unlocked. Segments such as pay tech, FMI technologies and trust tech could represent key sectors, leveraging the presence of international incumbents in Belgium and innovations in the fields of AI, cybersecurity, quantum cryptography and computing. Emerging domains, such as climate-related risks, wholesale and specialised InsurTech, are other untapped opportunities.

In order for young innovative firms to be able to build partnerships, a robust business model is paramount. The addition to the ecosystem of their agile and innovative solutions that address unmet market needs, while demonstrating a solid understanding of the financial world, codes and risks, also bolsters firms' prospects. The right support and connections as they scale up are crucial.

The success of the Belgian fintech ecosystem hinges not only on the availability of skills and talent, but also on the development of digital and physical infrastructure to help overcome outdated legacy IT systems. Ensuring interoperability with other global digital standards is essential for the seamless development of digital financial services (in blockchains, DLT, etc.).

This study provides insight into the underlying principles governing the Belgian fintech ecosystem and contextualises its keys to success. Inspiration and valuable lessons can be drawn from other successful fintech hubs to complement this analysis.

Derivatives through the lens of EMIR and supervisory data

Saif Ben Hadj
Riemer Faber
Pablo Rovira Kaltwasser
Patrick Van Roy

Introduction

On 7 February 2024, a political agreement was reached, under the Belgian presidency of the Council of the European Union, on the latest update to the European Market Infrastructure Regulation (EMIR).

EMIR is the regulation governing derivatives in the European Union (EU); its aim is to increase transparency and reduce risk in derivatives markets. EMIR was adopted in 2012 to address concerns that came to light in the aftermath of the 2008 global financial crisis. A lack of transparency in derivatives markets had allowed unobserved concentrations of risk to accrue, which led to spillover effects during the crisis.

Following these events, the G20 proposed reforms for the purpose of achieving five main objectives: (1) the central clearing of standardised derivatives, (2) the trading of standardised derivatives on exchanges or electronic platforms, (3) the imposition of higher bank capital requirements for non-centrally cleared derivatives, (4) the implementation of minimum margin requirements for such derivatives, and (5) mandatory reporting of over-the-counter (OTC) derivatives to trade repositories.

In the European Union, the objective of strengthening bank capital requirements was achieved through the Capital Requirements Regulation (CRR) and the Capital Requirements Directive (CRD) while the other objectives were incorporated into EU law through EMIR.

In 2017, a first amendment to EMIR, formally known as the EMIR Regulatory Fitness and Performance Program (EMIR Refit), was adopted. EMIR Refit aimed to simplify the original regulation and make it more efficient. Key changes included modifications to the clearing obligation and the reporting requirement, as well as the introduction of a distinction between "smaller" and "larger" counterparties in order to reduce the administrative burden on the former. Following the exit of the UK from the EU, EMIR was substantially amended for the second time in 2019. This version (referred to as EMIR 2.2) introduced a risk-based tiering system for non-EU central clearing counterparties (CCPs), granted the European Securities and Markets Authority (ESMA) direct supervision over systemically important CCPs and revamped EU CCP supervisory arrangements. The 2024 update of EMIR, also known as EMIR 3.0, is intended to further bolster the robustness of the financial system by addressing, among other issues, excessive reliance on systematically important third-country CCPs.

The implementation of EMIR has had a significant impact on the organisation of derivatives markets and the counterparties involved, with financial institutions investing in IT infrastructure, compliance and collateral management. Competent authorities, including the National Bank of Belgium (NBB), are responsible for ensuring that supervised entities comply with the requirements of EMIR. To meet this objective, the NBB has invested significant human and IT resources in the performance of its supervisory role and carries out analyses with respect to derivatives.

This article discusses recent developments relating to EMIR and describes how EMIR data can be used for the purpose of monitoring financial stability. Section 1 provides an overview of EMIR and its subsequent updates. Section 2 uses EMIR data to present selected statistics on the derivatives exposure of Belgian banks and insurance companies. Section 3 focuses on the use of interest rate derivatives by Belgian banks and insurance companies and how the market value of these derivatives has changed during the recent period of rising interest rates. Section 4 zooms in on energy and commodity derivatives, which were a particular area of interest in 2022 when energy and commodity prices rose very strongly. Section 5 sets out the conclusion.

1. EMIR

This section provides a brief overview of EMIR and its amendments.

EMIR (2012)

EMIR is based on three main pillars:

- **Clearing:** Counterparties to standard OTC derivative contracts must clear transactions through a recognised CCP.
- **Reporting:** Counterparties that enter into derivatives contracts must report transaction details to an EU-approved trade repository. This includes information on counterparties, notional amounts, transaction prices, maturity, clearing, valuation and collateralisation.
- **Risk mitigation:** For non-CCP-cleared derivatives contracts, counterparties must use specific risk mitigation techniques such as daily valuation, portfolio compression, reconciliation, collateral requirements and capital adequacy.

EMIR applies to all European counterparties regardless of whether they are financial institutions or not. The clearing obligation applies only to standard OTC interest rate derivatives and credit default swaps, while the reporting obligation covers all classes of derivatives and applies to both intra-group and extra-group transactions in all currencies, both exchange traded and over the counter.[1]

EMIR Refit (2017)

EMIR has had a significant impact on both the organisation of the derivatives market and counterparties themselves. To eliminate the disproportionate compliance costs imposed by EMIR on market participants – particularly non-financial counterparties, small financial counterparties and pension funds – the European Commission adopted in 2017 a first amendment to the regulation, which entered into force in 2019.

1 Exchange-traded derivatives (ETD) have highly standardised terms and features. For these derivatives, regulated exchanges require that a CCP provide clearing services and regulatory safeguards to investors. Over-the-counter derivatives constitute bilateral agreements between the counterparties and, as such, tend to have less standardised features.

The key provisions of EMIR Refit included:

- **Definitions:** Emir Refit updated the definition of financial counterparty (FC) in relation to investment funds and central securities depositories and introduced the new category of "small financial counterparty".
- **Clearing threshold:** EMIR Refit modified the threshold calculation procedure and clearing obligations for non-financial counterparties and adjusted the mandatory clearing times for certain derivatives contracts.
- **Clearing exemption:** EMIR Refit extended the clearing exemption for pension schemes to certain OTC derivatives for two years, with the possibility of further extensions, and revised the reporting obligations to reduce the burden and clarify responsibilities.

EMIR 2.2 (2019)

Following the exit of the UK from the EU, EMIR was updated again in 2019.

EMIR 2.2 introduced a risk-based tiering system for CCPs located outside the EU. This system distinguishes between systemically important third-country CCPs, which are directly supervised by ESMA, and less systemically important CCPs. EMIR 2.2 also introduced a number of changes to the supervisory arrangements for EU CCPs, such as improvements to the EMIR supervisory colleges and the creation of a standing CCP Supervisory Committee within ESMA.

EMIR 3.0 (2024)

In December 2022, the European Commission published the third major proposal to amend EMIR (EMIR 3.0). This proposal aims to improve the attractiveness of EU central counterparties in order to reduce over-reliance by EU entities on clearing services provided in the United Kingdom and to foster the resilience of central clearing counterparties in the EU. In January and early February 2024, under the Belgian presidency of the Council of the European Union, the European co-legislators and the Commission worked out a compromise, which was approved by the Council on 14 February and by the European Parliament shortly thereafter. The key features of this compromise are summarised below.

Active account requirement: Financial and non-financial counterparties that are subject to the clearing obligation will be required, under certain conditions, to open an active account with an EU CCP. This qualitative requirement is complemented by a quantitative requirement that a minimum proportion of certain euro and Polish zloty denominated OTC derivative transactions be cleared through the active account.

Enhanced transparency: Clearing members and clients providing clearing services for both EU CCPs and non-EU CCPs will be required to inform their clients of the option to clear a derivatives contract through an EU CCP, including the cost the client would have to pay for this option. In addition, clearing members and clients providing clearing services will be required to provide straightforward information to their clients about how margin models work, including in situations of stress, and the implications of such events on the margins clients are requested to post.

Regulation of CCPs: A number of provisions are introduced to simplify the authorisation process for CCPs and approval of the extension of CCP services and activities, such as the creation of a fast-track procedure for the authorisation of additional services or activities by a CCP that do not increase its level of risk.

Other changes introduced by EMIR 3.0 include:

- the introduction of a reporting obligation for the weekly derivatives positions of non-financial companies subject to the clearing obligation;

- the introduction of a clearing exemption for derivatives initiated and concluded in the context of post-trade risk reduction services;
- changes to the methodology used to calculate the clearing thresholds;
- a permanent exemption from the risk management procedures for single stock options and equity index options not cleared by the CCP;
- the possibility for CCPs to accept public, public bank and commercial bank guarantees in their collateral pool.

As part of their EMIR reporting obligations, institutions provide trade repositories with daily information on individual derivatives contracts. The NBB collects this information in an EMIR database and uses it, together with other data sources (such as supervisory reporting), for financial stability monitoring purposes. The following sections set out several examples of the use made by the Bank of EMIR data.

2. Assessment of the derivatives exposure of Belgian banks and insurance companies

EMIR data are used to compile descriptive statistics on the exposure of Belgian banks and insurance companies to derivatives.

At the end of December 2023, Belgian banks had significantly higher notional derivatives exposure (€2.4 trillion) than insurance companies (€49.6 billion).[2] Two main factors explain this finding. First, banks use derivatives to hedge maturity gaps in their (loan) portfolios; this is an intrinsic characteristic of the banking business (see the next section). Second, banks often act as intermediaries when providing financial services to, in particular, non-financial corporations that wish to hedge their risk, by serving as the derivative counterparty, while simultaneously hedging this position with another financial institution (a so-called back-to-back hedge).

Figure 1 provides a breakdown of the most common derivatives used by Belgian banks and insurance companies. Interest rate derivatives (swaps, forwards and options)[3] are the most commonly used derivatives by Belgian banks (77.3 %) and insurers (75.9 %). As can be seen, interest rate swaps represent the largest share by far (72.9 % for banks and 57.6 % for insurance companies), followed by currency swaps (7.4 %) and currency forwards (6.0 %), in the case of banks, and by interest rate forwards (12.9 %) and currency forwards (8.0 %), in the case of insurance companies.

Since interest rate derivatives are the most commonly used by banks and insurance companies in Belgium, the figures presented in the remainder of this section focus exclusively on this type of derivative.

Most interest rate derivatives (IRDs) of Belgian banks and insurers tend to have a relatively long maturity. As can be seen from Figure 2, 51 % of banks' IRDs have an original maturity of longer than five years. This figure is quite similar for insurance companies, at approximately 50 %. IRDs with an original maturity of between one and five years make up approximately 33 % of the IRD portfolios of banks and insurers. Only 3.3 % of their IRDs have an original maturity of three months or less.

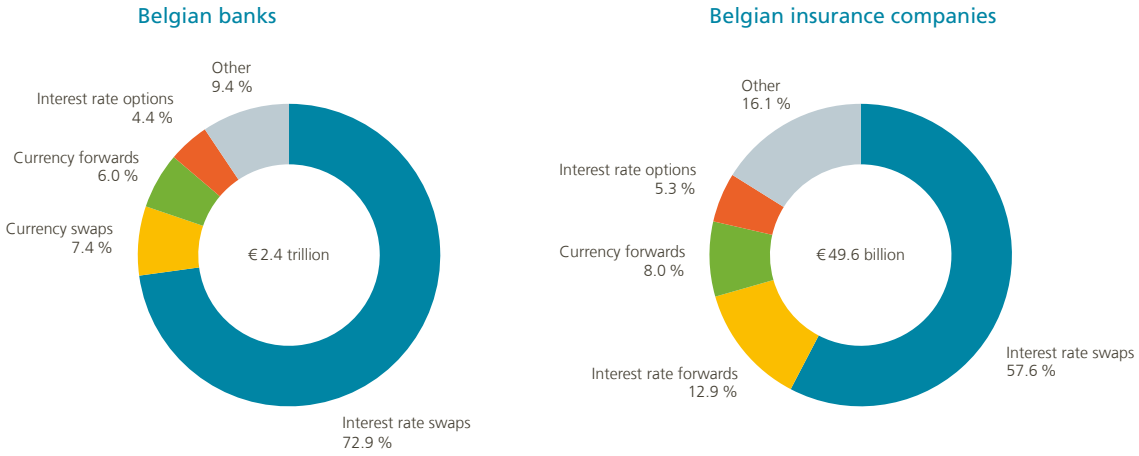
2 Total notional values are calculated as the sum of the entity-specific notional values (and hence include the same contract twice if two of the entities trade with each other).

3 A swap is a derivatives contract between two parties to exchange cash flows or other financial instruments over a specified period of time, based on predetermined conditions such as interest rates or currencies. A forward is a customised contract between two parties to buy or sell an asset at a specified price on a future date, used to hedge against price fluctuations for the underlying asset. An option grants the buyer the right to buy or sell an underlying asset at a specified strike price on or before a certain date, in exchange for the payment of a premium.

Figure 1

Notional amounts of derivatives held by Belgian banks and insurance companies, broken down by type of derivative

(%, end of 2023)

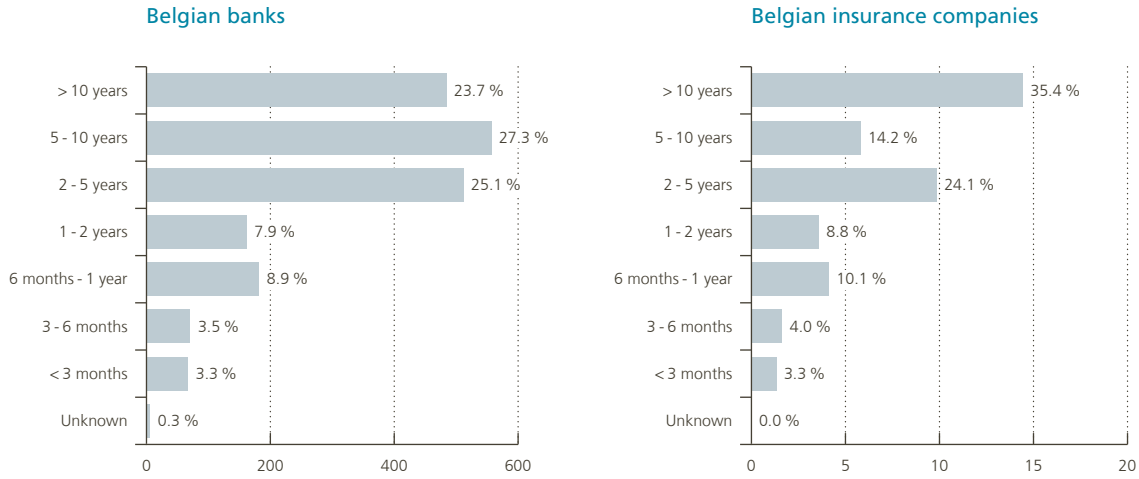


Source : NBB (EMIR reporting).

Figure 2

Breakdown of the interest rate derivatives of Belgian banks and insurance companies by original maturity bucket

(notional values ; in € billion and in % of total, end of 2023)



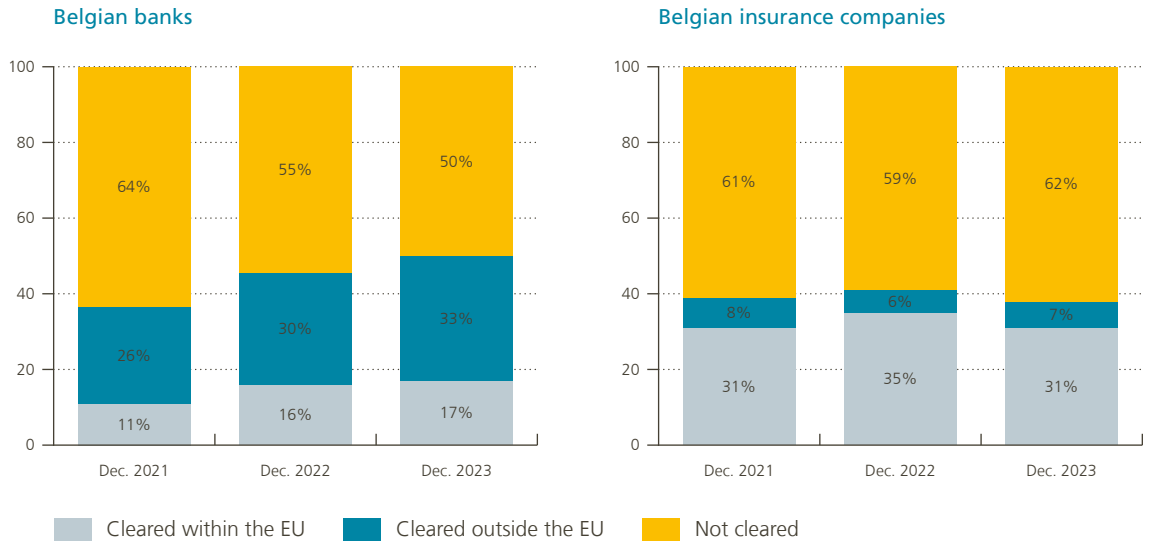
Source : NBB (EMIR reporting).

One of the main requirements of EMIR is the obligation to clear the most standardised, and therefore liquid, IRDs and credit derivatives with a central clearing counterparty. Figure 3 illustrates the share of outstanding IRDs centrally cleared by banks and insurance companies in Belgium. At the end of 2023, approximately 50 % of the outstanding IRDs of banks were centrally cleared whereas this was the case for approximately 40 % of the outstanding IRDs of insurance companies. This difference can to a large extent be explained by the fact that

Figure 3

Breakdown of the interest rate derivatives of Belgian banks and insurance companies by clearing status

(% of notional value, end of 2023)



Source: NBB (EMIR reporting).

insurance companies typically clear fewer derivatives through CCPs than banks, due to their specific regulatory environment, business model and risk management practices.

Two additional observations can be drawn from this figure. First, and in line with the policy objective of achieving a high degree of central clearing, the share of bank IRDs that are cleared is increasing (+14 percentage points between the end of 2021 and 2023). A substantial proportion of Belgian bank IRDs that were not cleared at the end of 2023 relates to intragroup transactions, the majority of which benefit from an exemption from the central clearing obligation granted by the supervisor (in this case, the NBB), a possibility that is provided for by EMIR if certain conditions are met.[4] Second, banks clear more IRDs outside the EU (33 %) than within (17 %), whereas the reverse holds true for insurers (7 % versus 31 %). However, when considering the absolute figures for both sectors combined, the majority of IRD clearing still occurs outside the EU. EMIR 3.0 therefore aims to impose stricter regulatory requirements on the location of clearing activities, potentially centralising these activities within the EU to enhance financial stability and oversight (see above).

Concentration is an additional important factor when assessing the potential risks to financial stability associated with derivatives. In general, greater concentration, whereby a small number of counterparties account for a large share of notional amounts, increases the risks to financial stability in the event of a failure or disruption at one or more of these entities. However, the identity of the counterparties also matters as CCPs are less vulnerable than non-CCPs.[5]

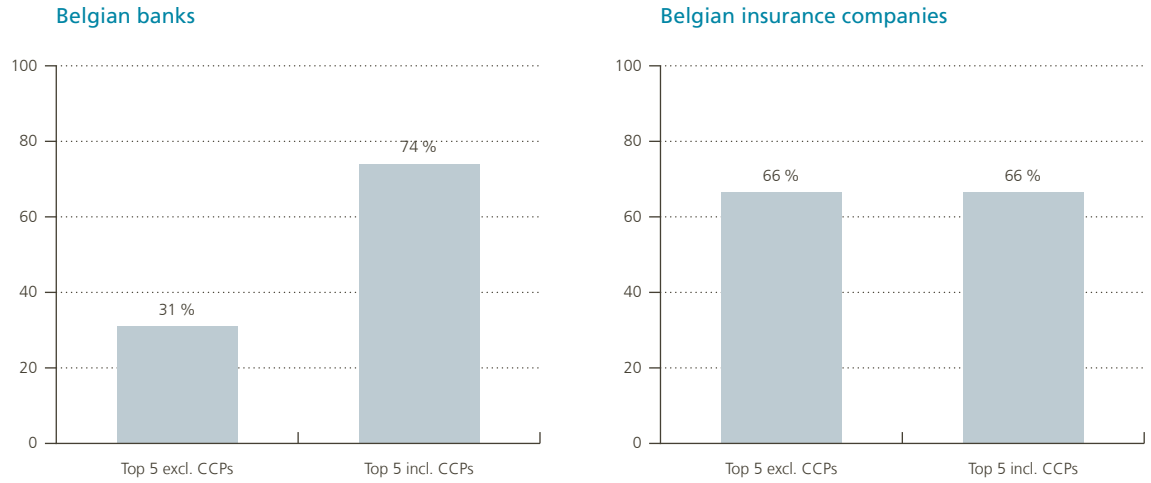
4 These conditions require among other things that risk management procedures be adequately sound, robust and consistent with the level of complexity of the transaction and that there be no impediment to the prompt transfer of own funds or the repayment of liabilities between the counterparties (see Regulation (EU) No 648/2012).

5 This is because CCPs act as intermediaries for several buyers and sellers in the derivatives market, taking on the risk of default by either party. By centralising trades, CCPs manage and pool risk, making it easier to offset or mitigate through various risk management practices. In addition, the waterfall structure of CCPs ensures that losses are absorbed in a predetermined order, thereby minimising their risk exposure and that of their participants.

Figure 4

Share of the five largest counterparties of the interest rate derivatives held by Belgian banks and insurance companies

(% of notional value, end of 2023)



Source: NBB (EMIR reporting).

Figure 4 shows the share of IRD notional amounts held by the five largest counterparties of Belgian banks and insurance companies, excluding and including CCPs.

For banks, the share of IRD notional amounts held by the five largest counterparties increases from 31 % without CCPs to 74 % when they are included, reflecting the clearing requirement for OTC interest rate derivatives imposed by EMIR. Interestingly, of the five largest counterparties, three are either parent or subsidiary companies of a banking group. This finding, which is true regardless of whether CCPs are included or not, can be attributed to the fact that IRDs are often used for risk management purposes, allowing banking groups to manage their interest rate exposure more effectively by reallocating risk among entities within the group. For insurance companies, 66 % of their derivatives exposure is concentrated in the hands of their five largest counterparties, regardless of whether CCPs are included or not. This underscores the previous observation that a majority of the outstanding IRDs of insurers are not cleared through central counterparties.

Overall, the data from Figure 4 indicate that the majority of IRDs held by Belgian banks and insurance companies are concentrated among a few, very significant counterparties (some of which are CCPs in the case of banks), with many counterparties holding relatively small positions.

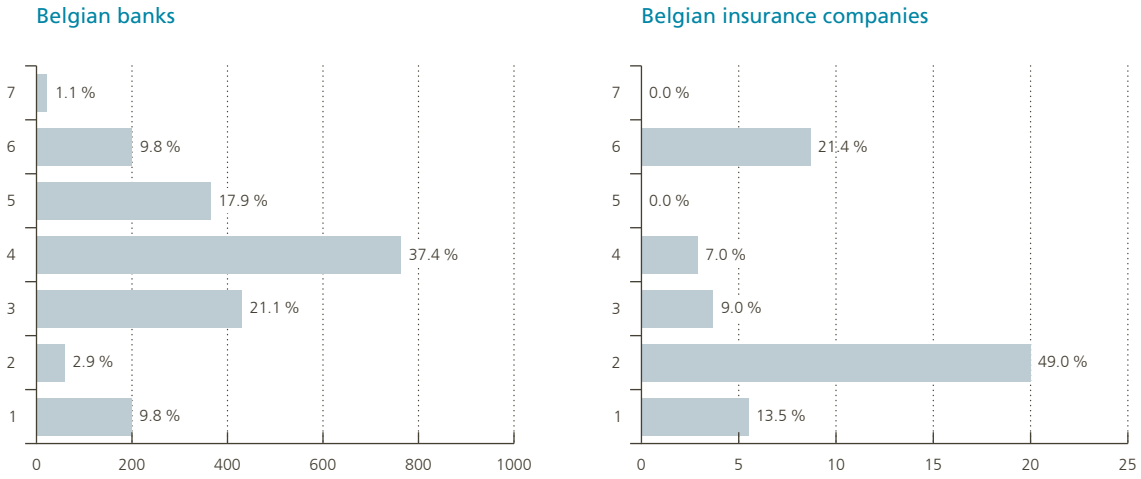
Below the interconnectedness of IRD counterparties and Belgian banks and insurance companies is examined. While concentration data sheds light on the extent to which derivatives risk is consolidated among a small number of counterparties, interconnectedness, on the other hand, refers to whether these counterparties are connected to multiple banks or insurance companies, thereby potentially spreading risk.

As shown in Figure 5, interest rate derivative counterparties are connected to between one and seven Belgian banks, with the median number of bank connections per counterparty reaching four (or 37.4 % of banks' IRD notional amounts). For insurance companies, the number of connections ranges from one to six, with the median number of insurance company connections per IRD counterparty being two (or 49.0 % of insurers' IRD notional amounts). Given that most interest rate derivatives are reported by a very limited number of Belgian

Figure 5

Number of Belgian banks and insurance companies to which interest rate derivatives counterparties are connected

(notional values; in € billion and in % of total, end of 2023)



Source: NBB (EMIR reporting).

banks and insurance companies, these figures point to substantial connections between IRD counterparties (some of which are CCPs) and Belgian financial institutions.

Overall, the high level of interconnectedness illustrated in Figure 5 aligns with the significant concentration revealed by Figure 4. This is partly due to the consolidated nature of the IRD counterparty "industry", as demonstrated in particular by CCPs, which benefit from strong network effects, meaning the higher the degree of transaction concentration, the higher the amount that can be netted. However, such interconnection in a concentrated network also heightens the potential for contagion effects, since a failure or disruption at one or more of these IRD counterparties could spread widely and have a substantial impact on the Belgian financial system.

The strategies and mechanisms employed to mitigate counterparty risk in the derivatives market include collateral and margin requirements. Typically, parties to a derivatives contract must post collateral upfront, which can be used to cover losses if they fail to meet their obligations. Margin requirements, which dictate the amount of collateral that must be posted, can vary based on the perceived risk exposure of the counterparty and the nature of the derivative. The following section presents some statistics on the collateral posted by Belgian banks and insurance companies to cover changes in the net market value of their interest rate derivatives.

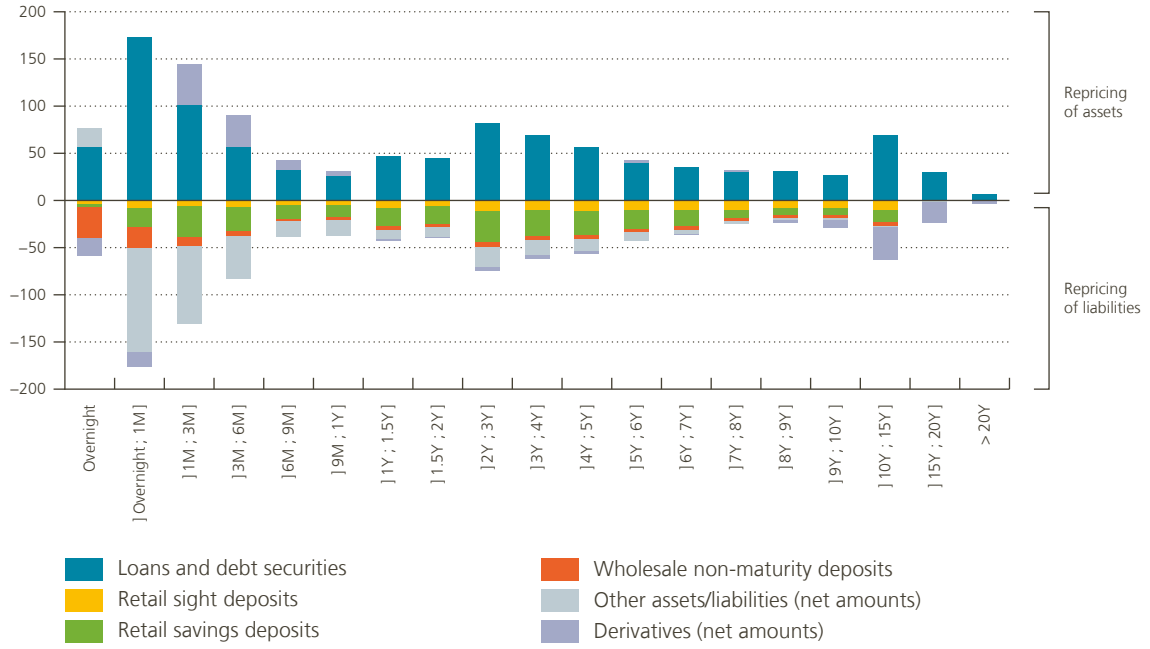
3. Impact of rising interest rates on the market value of derivatives

This section explores the impact of the rising interest rates seen since 2022 on both the market value of interest rate derivatives traded by banks and insurance companies and the amount of collateral they are required to post. As EMIR reporting is still relatively new, this analysis is based on supervisory reporting data which cover a longer time span. It is prefaced by a recap of why and how banks and insurance companies use interest rate derivatives for risk management purposes.

Figure 6

Maturity schedule for notional repricing cash flow of assets and liabilities in the banking book

(consolidated data for the six largest banks, after considering modelling assumptions, September 2023, in € billion)



Source : NBB (STE IRRBB reporting).

Belgian banks tend to have a rather high exposure to interest rate risk. On the assets side, they hold a relatively large volume of assets whose interest rates are fixed for a long period of time, such as mortgage loans. On the liabilities side, these assets are mainly financed by (retail) sight and savings deposits with no contractual maturity or repricing date (so-called "non-maturity deposits"). As a result, Belgian banks tend to have a relatively wide maturity gap between their assets and liabilities which makes them vulnerable to repricing risk arising from timing differences in changes in interest rates for instruments on both sides of the balance sheet. As shown in the previous section, banks hedge this risk using a substantial volume of interest rate derivatives.

The use of interest rate derivatives to hedge interest rate risk is further illustrated in Figure 6. This chart reveals how the Belgian banking sector manages interest rate risk in the banking book, showing the notional amounts of assets, liabilities and derivatives according to their remaining term to maturity, at which time the interest rate for the position will be adjusted to market conditions. In the case of positions with an interest rate fixed for the entire term, the notional amount is placed in the repricing bucket when the position reaches maturity. The chart shows that banks try to keep the net gap between the asset and liability positions in the different repricing buckets at a low level, so as to reduce (net) exposure to interest rate changes. Derivatives are also used to reduce these gaps, notably in longer-term buckets where the interest rate risk on fixed-rate mortgages is mitigated by payer swaps.[6]

These interest rate derivatives are managed in a dynamic way by banks – using payer and receiver swaps, the latter also being used to close previous payer swap positions – but, overall, they result in a net payer swap

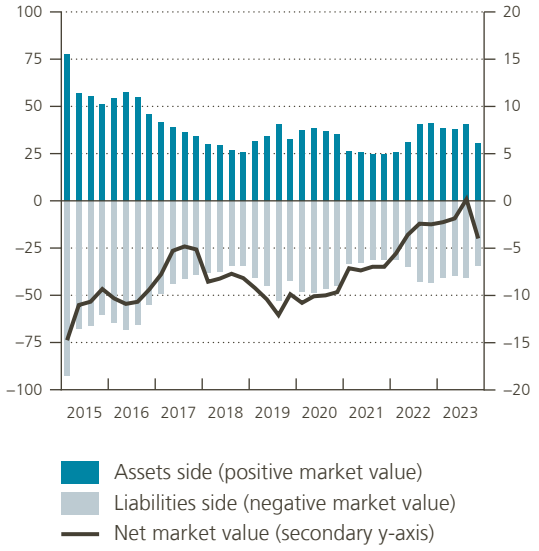
6 A payer swap entails paying a fixed amount and receiving variable interest. A receiver swap entails paying variable interest and receiving a fixed amount. Hence, a swap agreement between two parties is a payer swap for one and a receiver swap for the other.

Figure 7

Market value of interest rate derivatives held by Belgian banks and insurance companies and level of long-term interest rates

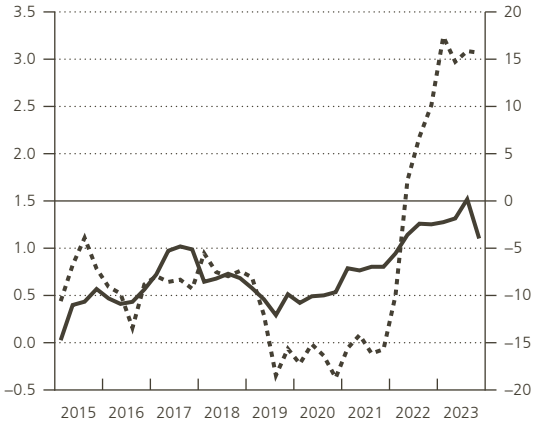
(market value in € billion and long-term interest rates in %, consolidated data)

Belgian banks



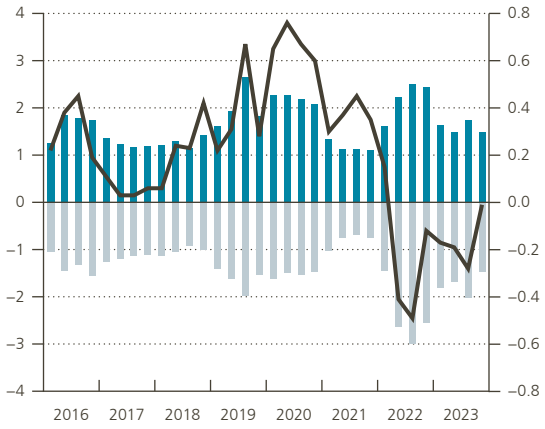
Assets side (positive market value)
Liabilities side (negative market value)
Net market value (secondary y-axis)

Belgian banks
(comparison with long-term interest rates)



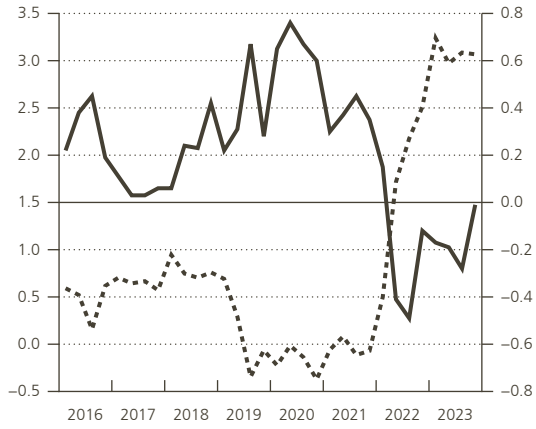
Belgium 10-year reference rate (y-axis)
Net market value (secondary y-axis)

Belgian insurance companies



Assets side (positive market value)
Liabilities side (negative market value)
Net market value (secondary y-axis)

Belgian insurance companies
(comparison with long-term interest rates)



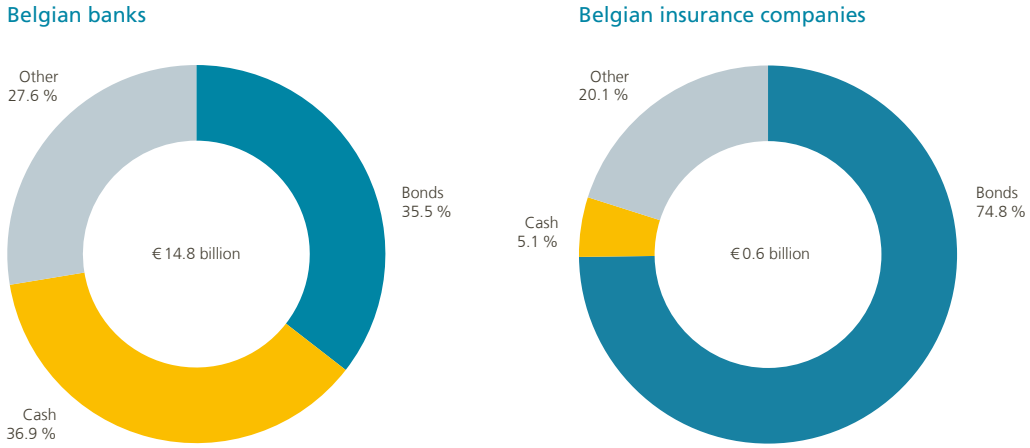
Belgium 10-year reference rate (y-axis)
Net market value (secondary y-axis)

Source: NBB (Finrep and QRT reporting).

Figure 8

Total collateral provided by Belgian banks and insurance companies for derivative transactions, broken down by type

(%, end of 2023)



Source: NBB (Finrep and QRT reporting).

position for the banking system, whereby Belgian banks pay interest at a fixed long-term rate to the derivative counterparty and receive interest at a floating short-term rate in return. Of course, when interest rates rise, the floating-rate leg of these interest rate derivatives will generate higher income, while the fixed-rate leg remains at the same level until the end of the contract. The upper charts in Figure 7 confirm that hedging by Belgian banks against a rise in interest rates paid off in the form of a significant net increase in the market value of interest rate derivatives up to the third quarter of 2023.[7]

Unlike banks, the liabilities of insurance companies usually have longer maturities than their assets, as liabilities are based on long-term contracts. Derivatives, in particular interest rate swaps, are an important tool used by insurers to mitigate the risks inherent in their long-term business. The use of interest rate swaps by insurance companies typically results in a net receiver swap position, whereby they pay interest at a floating rate to the derivative counterparty and receive interest at a fixed rate in return. While these swap contracts benefit from a fall in interest rates, the opposite is true when interest rates rise. The lower charts in Figure 7 confirm that, following the recent rise in interest rates, Belgian insurance companies saw a significant net decrease in the market value of their interest rate derivatives.[8]

Higher interest rates affect the market value of interest rate derivatives and consequently may lead to changes in the collateral that needs to be posted with the counterparty holding the positive market value of the contract. Generally speaking, the Belgian banking sector is likely to experience a positive net liquidity inflow when interest rates rise, as it will have to post less collateral with interest rate derivative counterparties than before. In contrast, insurance companies are generally on the opposite side due to the lengthy maturities of their liabilities and corresponding net receiver swap position, which helps close the gap with the duration of their assets. However, since the insurance sector uses interest rate derivatives less extensively than the banking sector, the impact of higher interest rates on the value of the collateral that insurance companies need to post is relatively limited.

7 The correlation between the level of long-term (10-year) interest rates and the net market value of IRDs is strongly positive (72.7 %) for banks.
8 The correlation between the level of long-term (10-year) interest rates and the net market value of IRDs is strongly negative (–83.6 %) for insurance companies.

Figure 8 indeed confirms that, by the end of 2023, the value of the collateral posted by insurance companies for derivative transactions (€0.6 billion) was significantly lower than that posted by Belgian banks (€14.8 billion). Although substantial, the value of collateral posted by banks has fallen from the period before the interest rate rises, having totalled €21.8 billion at the end of 2021. Figure 8 further shows that the most common types of collateral posted by Belgian banks and insurance companies are liquid assets (cash and bonds).[9]

In sum, an important conclusion that can be drawn from the above analysis is that, although large margin payments could theoretically pose financial risks, Belgian banks have had to post less collateral in the wake of recent interest rate rises, while the collateral posted by Belgian insurance companies has remained limited. The liquidity risk associated with the use of interest rate derivatives remains however a point of attention for the NBB, particularly in the Belgian insurance sector given the heterogenous use of IRDs by insurance companies and the associated margin calls.

4. Commodity derivatives and the energy crisis

This section focuses on the exposure of the Belgian financial sector to commodity derivatives, both directly (through the holding of such derivatives) and indirectly (through their exposure to counterparties holding such derivatives).

Commodity prices increased and became more volatile in the aftermath of the Covid-19 pandemic. Russia's invasion of Ukraine aggravated these developments and resulted in a period of extremely high and volatile commodity prices. A visible consequence of this was the global energy crisis that followed the surge in, among others, electricity and gas prices, but the prices of, for example, wheat and metals (nickel) also experienced strong fluctuations. To illustrate these extreme price movements, Figure 9 shows the daily spot price of electricity. At its peak in August 2022, the price was 20 times higher than at the start of 2020. More recently, prices for electricity and many other commodities have returned to the levels seen before the start of the war in Ukraine.

Derivatives are used to trade commodities and hedge commodity prices. For example, an oil company can use a futures contract to sell a barrel of oil at a given price at a specific point in time in the future (the notional value of the contract is the current market price of the barrel). Similarly, an electricity retailer that sells consumers electricity at a fixed retail price but purchases electricity at the spot price can insure itself against future cost increases by entering into a swap contract in which, at specific times in the future, it pays a fixed amount and receives the spot price for a megawatt-hour of electricity.

When commodity prices are in turmoil, the market value of a derivatives contract (that is, the sum of the present values of all amounts a party expects to pay and receive in the future) can suddenly change substantially. For example, after Russia's invasion of Ukraine and the subsequent increase in electricity prices, the abovementioned swap contract would be substantially more valuable for the electricity retailer and substantially more costly for its counterparty. Basically, the invasion caused an unexpected loss for the electricity retailer's counterparty (it should be noted, however, that this counterparty could be exposed to electricity prices in other ways than just this contract and that the overall impact of the invasion on it could thus differ).

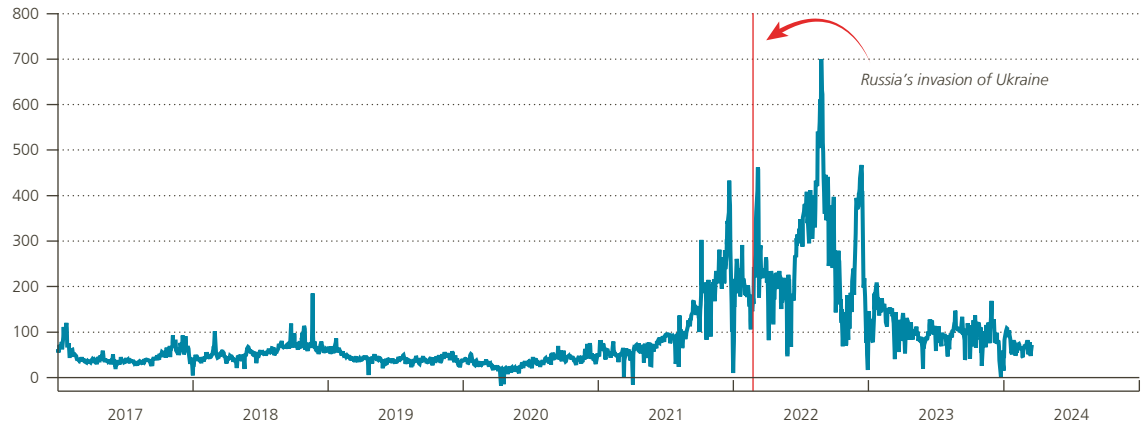
Furthermore, strong swings in commodity prices affect the collateral a party provides to ensure it can fulfil its obligations should it default. Contracts regularly provide for the exchange of variation margin and initial margin. The variation margin typically covers the market value of the contract, and changes in the value are

9 For insurance companies, the breakdown of collateral provided for derivatives is extrapolated based on the total breakdown of collateral.

Figure 9

Daily spot prices of electricity

(in € per megawatt-hour)



Source : Refinitiv.

exchanged daily. The initial margin covers the costs of default arising in the period between the final payment of variation margin and the liquidation or hedging of the contract. In general, higher and more volatile commodity prices lead to more extreme collateral requirements which are more difficult to predict. Usually, a party must provide variation margin in cash at short notice, which can give rise to liquidity risk.

Entities with large losses on commodity derivatives and considerable short-term collateral requirements can pose a threat to financial stability. Therefore, in particular since the turmoil on commodity markets, the NBB closely monitors commodity derivatives to prevent risks on commodity markets (in particular, risks related to the energy sector) from spilling over to the financial sector. The EMIR dataset is an important source of information for these analyses as it contains daily information on individual commodity derivatives.

Direct exposure

The direct exposure of the Belgian financial sector to commodity derivatives was relatively limited during the energy crisis. For example, in February 2023, about a year after Russia's invasion of Ukraine, the total notional value of commodity derivatives reported by Belgian parties was €25.9 billion. Only €0.5 billion (2 %) of this amount was in the hands of banks and insurers (see Figure 10). By comparison, the total value of the assets of banks and insurers is approximately €1 500 billion. This shows that Belgian banks engage in a limited amount of trading and hedging on their own behalf, but also that their role as an intermediary to assist clients is limited. In fact, Belgian non-financial firms with a substantial amount of commodity derivatives tend to have contracts with foreign banks (if they have contracts with a bank). Energy products account for somewhat less than half of the notional value of the commodity derivatives held by banks and insurers (see Figure 10).[10]

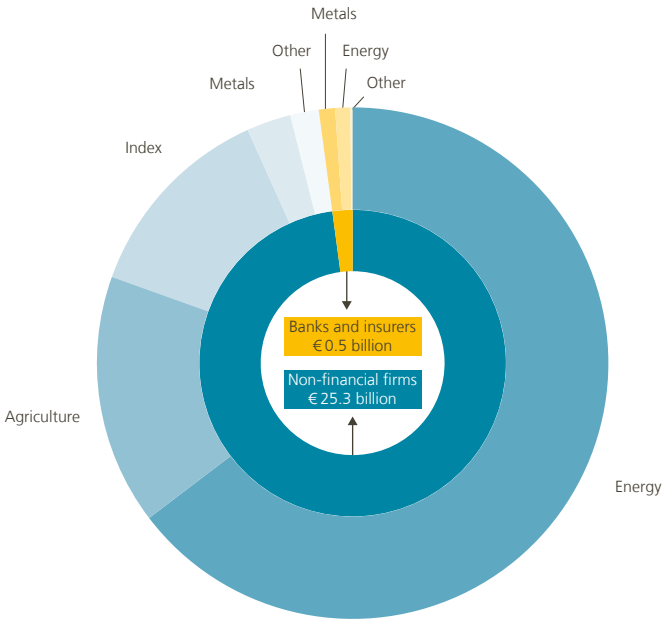
During the period of turbulence on the commodity markets, the NBB regularly used these and other statistics to monitor the direct exposure of banks and insurers to commodity derivatives.

10 The exposure of financial and non-financial firms to commodity prices may be larger than the reported figures as derivatives are not the only way in which entities can be exposed to commodity prices (for example, they can also own commodities directly).

Figure 10

Notional value of commodity derivatives (€25.9 billion) by reporting sector (inner ring) and commodity type (outer ring)

(data for 7 February 2023)



Source: NBB (EMIR reporting).

Indirect exposure

Banks may be indirectly exposed to commodity derivatives if their clients are not able to pay back loans due to losses on commodity derivatives or liquidity shortages. Non-financial firms hold €25.3 billion in commodity derivatives. These firms are active in various sectors, including energy, food (both production and trading), transport and industrial inputs. About two-thirds of the commodity derivatives owned by non-financial firms relate to energy products. The remaining one-third are for agricultural products and metals, among other products (see Figure 10). A large share of commodity derivatives are held by a small number of non-financial firms. It appears that some non-financial firms actively changed their derivative positions during the crisis. For example, some strongly increased the number of contracts over time.

Indirect exposure to commodity derivatives appeared manageable for banks during the energy crisis, mainly because the total notional amount was relatively small. Furthermore, supervisory data show that the loan exposure of Belgian banks to the energy sector has been moderate and stable over time. In the first quarter of 2023, 4 % of all loans to non-financial firms were to those operating in the Belgian and foreign energy sector.

In addition to the volume of commodity derivatives, various other factors impact the indirect exposure of banks, including the following. First, highly concentrated ownership of commodity derivatives could give rise to a situation whereby a small number of non-financial firms bear a large proportion of the total losses on commodity derivatives and default on their bank loans, instead of, for example, a situation where a large number of firms all sustain a relatively small loss and are able to pay back their loans.

Second, a large share of commodity derivatives are traded over the counter instead of on an exchange. Over-the-counter derivatives may be subject to less strict collateral requirements and thus give rise to larger losses for a non-financial firm should its counterparty default. These losses could impact the firm's ability to meet its bank loan payments.

Third, a substantial share of Belgian commodity derivatives are contracts between Belgian firms and foreign firms belonging to the same conglomerate (i.e., intragroup contracts). A foreign firm may serve as an intermediary and pass a contract on to, for example, a foreign bank, but it is also possible for the foreign firm to act as the ultimate counterparty in the transaction. In any case, conglomerates may constitute a first line of defence in the event of losses, thereby possibly reducing the likelihood of firms defaulting on their bank loans. However, intragroup contracts may be backed by less collateral than contracts between firms that do not belong to the same conglomerate, which would increase the risk for banks.

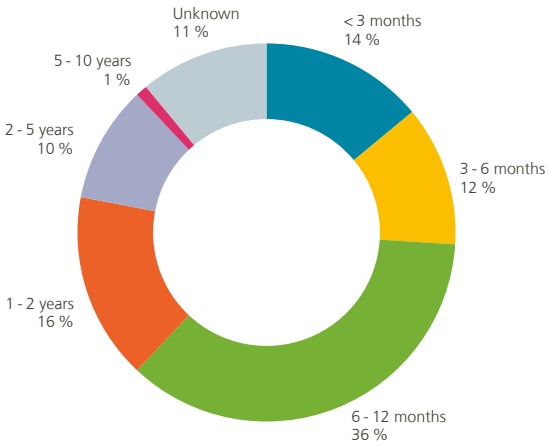
Fourth and finally, shortly after Russia's invasion of Ukraine in February 2022, over 60 % of commodity derivatives had a residual maturity of up to a year (see Figure 11). Contracts with a remaining duration of more than two years were uncommon, and contracts with a remaining duration of more than five years were rare. Hence, at the end of 2023, of the contracts that started before or just after the invasion, most had ended and been replaced with new ones for which the start of the war was known information. Most issues caused by commodity derivatives outstanding around the time of the invasion should have materialised by then.

Despite moderate risks for financial stability, the large movements in commodity prices had a substantial impact on the outcomes of derivatives contracts for some non-financial firms. An in-depth look at the data of some firms shows that the market value of their derivatives contracts moved closely in line with the prices of the contract commodities. Depending on their position, for some firms the market value greatly increased following Russia's invasion of Ukraine, while for others the market value fell substantially. These extreme market valuations faded away when commodity prices returned to their pre-war levels and contract payments to their old values. Another contributor to less extreme market values was that, over time, existing contracts came closer to maturity (under the abovementioned swap contract, for example, fewer future payments were left) or reached maturity and were replaced with new contracts based on the latest information. Similarly, firm-level data show that some firms had to post – while others received – large amounts of collateral after Russia's invasion

Figure 11

Residual maturity of commodity derivatives (shortly after Russia's invasion of Ukraine)

(data for 1 April 2022, contracts are weighted by notional value)



Source : NBB (EMIR reporting).

of Ukraine (both initial margin and variation margin). The variation margin closely followed the market value, meaning some firms provided large amounts of cash at peaks in the market value. Variation margin payments retraced along with commodity prices, so that firms no longer had to provide large amounts of cash to meet collateral requirements and liquidity risks subsided substantially.

5. Conclusion

Past financial crises have demonstrated that derivatives can amplify or even trigger financial instability. Therefore, regulation and high-quality data on derivatives trading is essential to ensure effective, evidence-based supervision of derivatives and thus financial stability.

EMIR, the main regulation on derivatives in the EU, plays an important role in achieving these objectives. Under the Belgian presidency of the Council of the European Union, an agreement to update EMIR was reached, aimed at improving the attractiveness of EU central counterparties. Key aspects of the update include the requirement to have an active account with an EU CCP, greater transparency for the services offered by EU CCPs, and a simplification of central counterparty regulation.

The NBB uses data from EMIR reporting as well as derivatives data from other sources, such as supervisory reporting data, for financial stability monitoring purposes. This article provides examples of the use made of these data by the NBB : the compilation of statistics on the derivatives exposure of Belgian banks and insurance companies, assessment of the impact of rising interest rates on interest rate derivatives, and a study of the role of commodity derivatives during the recent energy crisis.

These cases shed light on how derivatives data can contribute to a better understanding and supervision of derivatives markets. Going forward, the NBB will continue to monitor derivatives markets for these and other reasons, in order to maintain financial stability.

Statistical annex

List of tables

Tables relating to Belgian credit institutions

Tables relating to Belgian insurance companies

Table 1

Number of Belgian credit institutions

	2017	2018	2019	2020	2021	2022	2023
Credit institutions governed by Belgian law with Belgian majority shareholding	14	14	14	15	16	16	16
Credit institutions governed by Belgian law with foreign majority shareholding	19	18	17	16	14	14	13
EU Member States	12	11	9	8	6	6	6
Other States	7	7	8	8	8	8	7
Belgian branches of foreign credit institutions	54	56	54	51	51	50	51
EU Member States	46	48	48	45	45	45	47
Other States	8	8	6	6	6	5	4
Total	87	88	85	82	81	80	80

Source: NBB.

Table 2

Key figures

(data on consolidated basis)

	2016	2017	2018	2019	2020	2021	2022	2023
A. Large banking groups								
Balance sheet total (in € billion)	849.7	839.6	847.0	888.2	959.3	975.7	983.5	980.8
Customers' holdings (in € billion)	575.7	595.3	598.2	623.3	654.0	672.5	712.7	708.6
Loans and advances to customers (in € billion)	485.9	506.3	531.4	555.7	551.6	578.0	626.4	636.0
Risk asset ratio (in %)	17.5	17.8	17.7	17.6	19.2	19.8	19.1	18.2
Net after tax results (in € billion)	4.8	5.2	5.3	5.6	3.5	6.4	6.7	8.2
Return on average assets (in %)	0.6	0.6	0.6	0.6	0.4	0.6	0.7	0.8
Return on average equity (in %)	9.4	9.4	9.2	9.6	5.9	10.0	10.2	12.5
Cost-income ratio (in %)[1]	56.5	56.9	59.9	57.7	60.1	59.4	60.2	58.1
B. Total of Belgian credit institutions								
Balance sheet total (in € billion)	1 021.9	993.8	993.2	1 047.8	1 132.0	1 150.9	1 158.7	1 156.3
Customers' holdings (in € billion)	686.6	708.5	717.5	751.8	796.2	821.3	858.7	856.9
Loans and advances to customers (in € billion)	565.8	590.2	618.5	648.9	647.7	679.2	728.7	740.3
Risk asset ratio (in %)	18.8	19.0	18.8	18.8	20.3	20.4	20.1	19.6
Net after tax results (in € billion)	5.7	5.9	5.6	6.1	4.3	7.8	7.6	9.3
Return on average assets (in %)	0.6	0.6	0.5	0.6	0.4	0.7	0.7	0.8
Return on average equity (in %)	9.1	8.9	8.0	8.7	5.9	10.2	9.9	12.1
Cost-income ratio (in %)[1]	58.4	58.2	61.2	59.5	61.2	60.4	61.0	58.4

Source: NBB.

1 As from 2020, some specific expenses have to be booked separately in the prudential reporting, which has resulted for some banks in a break in the series.

Table 3

Belgian banks' funding structure and liquidity ratios

(consolidated end-of-period data; in € billion, unless otherwise stated)

	2016	2017	2018	2019	2020	2021	2022	2023
Total liabilities	1 022	994	993	1 048	1 132	1 151	1 159	1 156
Deposits	725	736	745	797	884	917	915	906
Central banks	23	29	26	26	87	89	54	16
General governments	24	26	27	27	30	29	32	35
Credit institutions	105	89	85	95	70	69	69	103
Other financial corporations	76	85	79	85	93	93	98	111
Non-financial corporations	133	132	140	149	163	175	184	185
Household deposits	364	374	389	415	442	461	479	456
Debt securities issued	106	106	98	91	86	83	88	97
Certificates of deposits	35	40	30	23	14	12	18	26
Covered bonds	24	23	28	26	28	26	24	28
Other debt securities issued	48	43	40	42	43	45	46	43
Derivatives	67	49	43	51	53	39	54	42
Other liabilities[1]	51	28	31	31	29	29	21	25
Equity	72	75	76	78	80	83	81	85
Liquidity coverage ratio (in %)	140	138	145	141	182	184	158	153
Net stable funding ratio (in %)						142	133	127
Customer loan-to-deposit ratio (in %)	94.9	95.5	97.5	95.9	89.0	89.6	92.0	93.9
Asset encumbrance ratio (in %)[2]	11.6	12.5	13.0	12.1	17.1	17.9	12.7	13.3

Source: NBB.

1 Including, among other tax liabilities, liabilities included in disposal groups classified as held for sale, short positions, and provisions and liabilities for defined benefit obligations.

2 Asset encumbrance ratio as defined in the Commission Implementing Regulation (EU) No 2015/79 (paragraphs 9-11 of Annex III).

Table 4

Main components of Belgian banks' income statement

(consolidated data, in € billion)

	2016	2017	2018	2019	2020 [1]	2021	2022	2023
Net interest income	14.82	14.11	14.41	14.62	14.19	14.35	15.30	18.08
Non-interest income	7.62	8.94	8.25	8.48	7.87	7.63	7.94	8.09
Net fee and commission income [2]	5.63	5.62	5.58	5.57	5.59	6.43	6.55	6.67
(Un)realised gains or losses on financial instruments [3]	1.50	0.86	1.22	0.53	0.01	0.56	0.80	0.21
Other non-interest income	0.50	2.46	1.46	2.39	2.27	0.64	0.59	1.22
Total operating income (bank product)	22.44	23.05	22.66	23.10	22.06	21.98	23.24	26.16
Total operating expenses (–)	13.11	13.42	13.89	13.74	13.49	13.28	14.18	15.28
Staff expenses (excluding commissions paid to bank agents)	6.47	6.74	6.84	6.77	6.51	6.20	6.37	6.80
General and administrative expenses (including depreciation)	6.64	6.68	7.05	6.97	6.99	7.08	7.81	8.48
Gross operating result (before impairments and provisions)	9.33	9.63	8.81	9.36	8.57	8.71	9.06	10.88
Total impairments and provisions (–)	1.76	0.67	0.83	1.26	3.12	0.23	1.11	0.75
Impairments on financial assets at amortised cost [4]	0.90	0.41	0.61	1.05	2.77	0.19	0.84	0.60
Impairments on other financial assets	–0.04	–0.07	–0.01	0.01	0.02	0.00	-0.01	0.00
Other impairments and provisions	0.90	0.34	0.23	0.20	0.32	0.03	0.28	0.15
Other components of net operating income [5]	0.37	0.29	0.26	0.25	0.50	1.78	1.99	2.35
Net operating income	7.94	9.25	8.20	8.35	5.96	10.25	9.94	12.49
Tax and extraordinary profit or loss	–1.56	–2.64	–2.00	–1.78	–1.26	–2.02	–1.86	–2.70
Total profit or loss on discontinued operations	0.03	–	–	–	–	–	0.00	0.00
Net profit or loss including minority interest	6.41	6.61	6.20	6.57	4.70	8.23	8.08	9.78
p.m. Net profit or loss (bottom-line result)	*5.75*	*5.95*	*5.60*	*6.12*	*4.26*	*7.76*	*7.62*	*9.34*

Source: NBB.

1 As from 2020, some specific expenses have to be booked separately in the prudential reporting, which resulted for some banks in a shift of these expenses between several lines of the income statement. This led to a breach in the series of non-interest income, other non-interest income, total operating income, general and administrative expenses and total operating expenses.

2 Including commissions paid to bank agents.

3 This item includes the net realised gains (losses) on financial assets and liabilities not measured at fair value through profit or loss, the net gains (losses) on financial assets and liabilities held for trading and designated at fair value through profit or loss, and the net gains (losses) from hedge accounting.

4 Data for the years before 2018 relate to impairments on loans and receivables (under IAS 39).

5 Other components of net operating income comprise the share in profit or loss of associates and joint ventures accounted through the equity method, and the profit or loss from non-current assets, disposal groups classified as held for sale not qualifying as discontinued operations, and the negative goodwill recognised immediately in profit or loss.

Table 5

Number of Belgian insurance companies

	2016	2017	2018	2019	2020	2021	2022	2023
A. By the location of their registered office								
Belgium [1]	73	68	69	68	66	64	64	61
European Economic Area [2]	45	46	46	45	37	34	35	37
Rest of the world [3]	0	0	0	0	0	0	0	0
Total	**118**	**114**	**115**	**113**	**103**	**98**	**99**	**98**
Free service provision [4]	999	917	1 095	1 118	1 123	961	768	780
B. By specialisation [5]								
Life insurance	22	20	16	16	14	12	11	10
Non-life insurance	70	67	72	71	64	62	64	66
Life and non-life insurance	24	25	24	24	23	21	22	21
Reinsurance companies	2	2	3	2	2	3	2	1
Total	**118**	**114**	**115**	**113**	**103**	**98**	**99**	**98**

Source: NBB.

1 Companies with their registered office in Belgium comprise the Belgian subsidiaries of foreign companies.

2 Belgian branches of companies with their registered office in another E.E.A. country.

3 Belgian branches of companies with their registered office outside the E.E.A.

4 Provision of insurance services without an establishment in Belgium.

5 Including the Belgian branches of foreign insurance companies.

Table 6

Main components of insurance companies' assets

(data based on annual statutory accounts, in € billion)

	2015	2016	2017	2018 [1]	2019 [1]	2020	2021	2022 [2]
Investments	259.7	261.4	263.9	272.8	290.6	295.8	304.1	297.7
All activities with the exception of class 23	229.2	229.6	228.2	236.8	246.1	249.8	252.1	251.7
Shares	13.3	13.5	14.1	14.3	15.5	16.5	19.4	20.6
Debt securities	171.1	171.4	169.2	168.1	174.7	174.2	172.2	168.9
Land and buildings	3.0	2.9	2.8	2.8	2.7	2.7	2.4	2.1
Mortgage loans	10.8	11.7	12.7	13.6	16.7	17.6	17.5	17.3
Investments in affiliated undertakings	18.6	17.2	17.6	25.7	22.4	23.0	23.7	24.7
Others	12.5	13.0	11.8	12.3	14.2	15.9	16.9	18.1
Class 23	30.4	31.8	35.8	36.0	44.6	46.1	52.0	46.0
Shares	18.5	19.9	23.6	23.6	32.0	34.7	42.6	39.3
Debt securities	10.9	10.9	11.1	11.5	11.5	10.4	8.6	6.5
Others	1.0	1.0	1.0	0.9	1.0	0.9	0.7	0.3
Reinsured part of technical provisions	9.4	7.2	6.3	6.1	9.7	17.1	22.4	27.9
Claims and other assets	17.1	16.3	14.1	14.6	18.9	19.2	19.8	21.4
Total	286.1	284.9	284.4	293.5	319.3	332.1	346.3	347.0

Source: NBB.

1 Large changes in 2018 and 2019 are mainly attributable to the inclusion of new companies in the reporting scope.

2 At the cut-off date of this report, 2023 BGAAP data were not yet available.

Table 7

Main components of insurance companies' liabilities

(data based on annual statutory accounts, in € billion)

	2015	2016	2017	2018 [1]	2019 [1]	2020	2021	2022 [2]
Own funds	14.4	13.5	13.0	19.5	22.4	22.6	22.6	23.5
Technical provisions	242.6	243.4	245.1	243.7	262.3	269.7	277.6	276.1
Life insurance (with the exception of class 23)	175.3	173.5	171.9	170.6	172.2	170.9	169.5	168.2
Class 23	30.5	31.8	35.8	36.0	44.6	46.1	52.0	46.0
Non-life insurance	28.5	29.4	28.8	28.5	34.0	40.9	43.5	48.0
Others	8.3	8.8	8.6	8.6	11.4	11.8	12.7	13.9
Reinsurance companies' deposits	6.4	4.2	3.3	3.5	3.9	4.0	8.2	9.3
Creditors' claims	20.3	20.3	20.1	22.7	26.3	30.9	31.2	32.3
Other liabilities	2.6	3.5	2.9	4.2	4.4	5.0	6.5	5.8
Total	286.1	284.9	284.4	293.6	319.3	332.1	346.3	347.0

Source: NBB.

1 Large changes in 2018 and 2019 are mainly attributable to the inclusion of new companies in the reporting scope.

2 At the cut-off date of this report, 2023 BGAAP data were not yet available.

Table 8

Components of the income statement of insurance companies

(data based on annual statutory accounts; in € billion, unless otherwise stated)

		2015	2016	2017	2018 [1]	2019 [1]	2020	2021	2022 [2]
A. Technical account in life insurance									
Net premiums written		15.1	14.4	14.4	15.3	16.3	15.3	16.2	14.3
Claims paid	(–)	19.7	18.7	17.6	16.7	17.1	18.0	17.5	17.1
Change in the provisions for claims	(–)	2.0	1.4	1.3	0.6	–6.4	–0.6	–5.4	9.3
■ all life insurance classes excluding class 23		1.4	0.6	0.2	3.0	–10.7	–1.2	–9.8	16.9
■ adjustments on class 23		0.6	0.7	1.1	–2.4	4.3	0.6	4.4	–7.6
Premiums after insurance costs		**–6.6**	**–5.7**	**–4.4**	**–0.8**	**–7.3**	**–3.3**	**–6.7**	**6.4**
Net operating expenses	(–)	1.7	1.6	1.7	1.7	1.7	1.8	1.8	1.8
Result before investment income		**–8.3**	**–7.3**	**–6.1**	**–2.5**	**–9.0**	**–5.1**	**–8.5**	**4.6**
Net investment income		8.5	8.3	7.6	3.7	10.3	6.1	9.9	–3.0
■ all life insurance classes excluding class 23		7.9	7.6	6.4	6.1	6.0	5.5	5.5	4.6
■ adjustments on class 23		0.6	0.7	1.1	–2.4	4.3	0.6	4.4	–7.6
Technical result life insurance		**0.2**	**1.1**	**1.4**	**1.3**	**1.3**	**1.0**	**1.5**	**1.5**
B. Technical account in non-life insurance									
Net premiums earned		12.7	12.7	12.7	12.8	15.1	15.6	16.6	18.0
Claims paid	(–)	8.0	8.2	7.8	8.1	9.7	9.4	10.9	11.9
Change in the provisions for claims	(–)	0.7	0.5	0.6	–0.3	–0.6	–0.5	–0.3	–0.7
Premiums after insurance costs		**4.0**	**4.0**	**4.3**	**4.4**	**4.9**	**5.8**	**5.4**	**5.4**
Net operating expenses	(–)	3.7	3.8	3.9	3.9	4.7	5.0	5.1	5.3
Result before investment income		**0.3**	**0.2**	**0.4**	**0.6**	**0.1**	**0.8**	**0.3**	**0.1**
Net investment income		1.3	1.2	1.2	1.1	1.2	0.8	1.1	1.1
Technical result non-life insurance		**1.6**	**1.4**	**1.6**	**1.7**	**1.3**	**1.6**	**1.3**	**1.3**
C. Non-technical account									
Total technical result life and non-life insurance		1.8	2.5	3.0	3.0	2.5	2.6	2.8	2.8
Residual net investment income		0.3	–0.2	0.4	1.0	0.6	1.0	0.8	1.5
Other and exceptional results and taxes		–0.9	–1.0	–1.1	–0.8	–0.9	–1.0	–1.0	–0.5
Net result		**1.2**	**1.3**	**2.3**	**3.2**	**2.3**	**2.6**	**2.6**	**3.8**
p.m. Return on equity (in %)		*8.2*	*9.8*	*17.6*	*16.4*	*10.3*	*11.4*	*11.3*	*16.0*

Source: NBB.

1 Large changes in 2018 and 2019 are mainly attributable to the inclusion of new companies in the reporting scope.

2 At the cut-off date of this report, 2023 BGAAP data were not yet available.

National Bank of Belgium
Limited liability company
RLP Brussels – Company number: 0203.201.340
Registered office: boulevard de Berlaimont 14 – BE-1000 Brussels
www.nbb.be

Publisher

Steven Vanackere
Executive Director

National Bank of Belgium
Boulevard de Berlaimont 14 – BE-1000 Brussels

Contact for the publication

Jo Swyngedouw
Deputy Director
Prudential Policy and Financial Stability

Tel. +32 2 221 44 75 – Fax +32 2 221 31 04
jo.swyngedouw@nbb.be

Cover and layout: NBB CM – Prepress & Image

Published in May 2024