

Financial Stability Report 2023



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Macroprudential Report

Introduction

The Act of 25 April 2014 officially designated the National Bank as Belgium's macroprudential authority. By virtue of this mandate, the Bank closely monitors developments in the financial sector, particularly focusing on the detection of potential risks that could endanger the stability of the financial sector. When such systemic risks occur, the Bank has the power to take the necessary macroprudential measures to prevent these risks from developing further and to reduce the vulnerability and exposure of the financial sector thereto. These measures include not only the use of instruments that come under the direct competence of the Bank but equally the publication of recommendations to other authorities with the power to take specific action. On an annual basis, the Bank explains in its Macroprudential Report how it has fulfilled its role as guarantor of the stability of the financial system.

This Macroprudential Report gives an overview of the Bank's macroprudential policy and sets this policy in the context of macroeconomic and macrofinancial developments characterised by stubbornly high inflation and a marked tightening of monetary policy on the one hand, and by a period of turmoil in financial markets amid concerns about the vulnerabilities of certain parts of the US and Swiss banking sectors on the other. Developments linked specifically to the Belgian financial sector and credit and real estate cycles are examined in detail in the Financial Stability Overview contained in the 2023 Financial Stability Report.

The first two chapters of this Report examine the impact on the financial sector of high inflation and rising interest rates, as well as of the serious problems experienced by certain banks since March. The third chapter focuses on the Belgian financial sector. The fourth chapter provides an overview of Belgium's macroprudential policy in this uncertain economic context. Finally, the last chapter of this Report includes a series of macroprudential recommendations.

1. Impact of high inflation and rising interest rates

After years of low or even negative interest rates, the operating environment for the financial sector was characterised, among other things, by a rapid and significant rise in interest rates. In 2022, the strong recovery in the wake of the coronavirus pandemic was followed by a new period of economic turbulence, which propelled inflation beyond expectations and ensured that it remained at an elevated level. Russia's invasion of Ukraine exacerbated pre-existing tensions in the energy markets, mainly through the imposition of mutual economic sanctions by Western countries and Russia. In particular, a substantial increase in the price of natural gas, and consequently of electricity, was initially the main driver of the rapid rise in inflation in Europe.

Inflation put pressure on purchasing power and governments introduced a series of measures to reduce the energy bills of households and businesses, or to offset their increase, such as the renewed extension of the social energy tariff or the lowering of the VAT rate. Automatic wage indexation was able to limit the impact

of high inflation on the financial situation of households, but put additional pressure on businesses, which also and simultaneously faced an increase in their energy bills.

Since then, energy prices decreased and returned to levels more comparable to those before the invasion of Ukraine, but the level of underlying inflation continued to rise until March as more and more producers began to pass through, at least in part, their higher costs to sales prices.

The rapid and persistent rise in inflation forced many central banks to tighten monetary policy. For example, the ECB gradually raised its policy rates by 375 basis points starting in July 2022, bringing the deposit rate to 3.25 % in May 2023. Long-term market rates also increased significantly but less sharply, which contributed to a flattening (and even a slight inversion) of the yield curve at the end of April 2023.

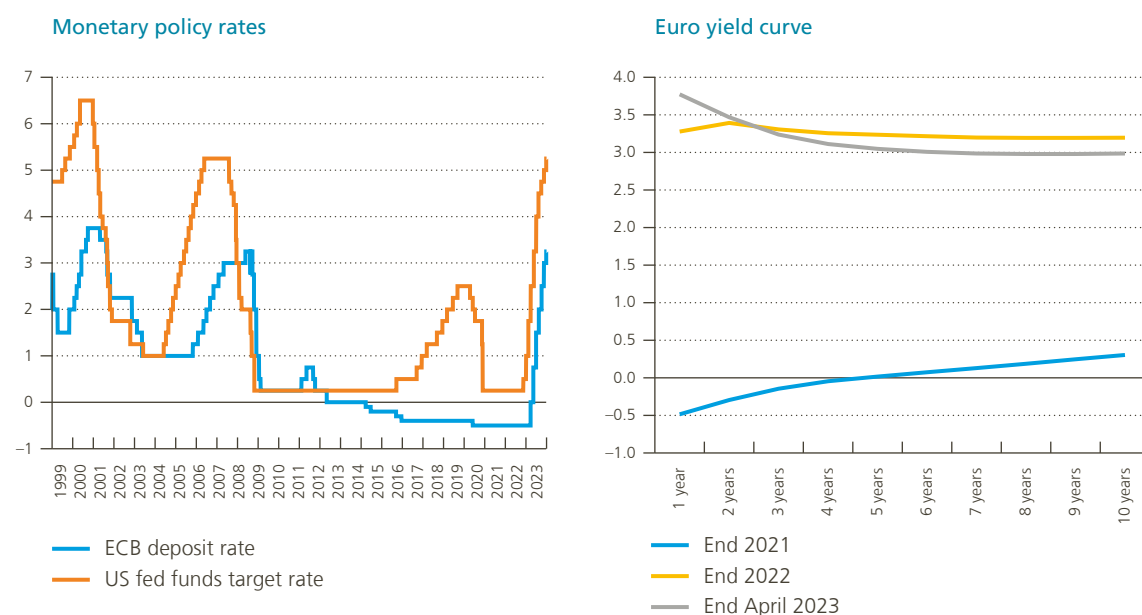
Against the background of persistent inflation and rising interest rates, the economy began to slow markedly starting in the summer of 2022, without however leading to a recession. According to current economic projections, economic growth in the euro area is expected to reach, on average, 1.0 % in 2023 in the baseline scenario. For the financial sector, however, this will be – at least in the short term – a less favourable period, especially in terms of volume of activity. The projections for this baseline scenario are still subject to a relatively high degree of uncertainty, which increased starting in March 2023, due to the financial market turmoil (see below).

The sharp rise in risk-free interest rates weighed on the valuation of equity and bond markets. Overall, however, price corrections in the traditional financial markets generally proceeded in an orderly fashion.

Rising interest rates have also led to a turning point in the credit and real estate cycles. In the early months of 2023, annual growth in loans to households and businesses began to decline. This was especially the case for mortgage loans. On a monthly basis, the average volume of new mortgage loans in the first four months

Chart 1

Policy rates and risk-free yield curve



Source: Refinitiv.

of 2023 amounted to some € 2.7 billion, which was around 25 % lower than the average observed during the corresponding period over the previous five years. On an annual basis, nominal residential real estate prices slowed from over 8% in the first quarter of 2022 to less than 4% in the fourth quarter. In real terms, residential real estate prices fell by nearly 6% on an annual basis in the fourth quarter. Moreover, the price differential between energy-efficient and less energy-efficient houses has increased. All these elements indicate that the Belgian residential property market is tending to cool down after years of very strong dynamic growth.

2. Impact of financial market turmoil

The severe problems faced by three US banks – Silicon Valley Bank, Signature Bank and Silvergate Bank – in the first half of March 2023, due to major outflows of deposits, triggered a new period of turmoil in financial markets and the financial sector. These banks had many vulnerabilities. In the case of Silicon Valley Bank, the business model and funding sources were characterised by a particularly high degree of concentration. Moreover, the vast majority of deposits held with this bank were not covered by the Federal Deposit Insurance Corporation (FDIC). These factors contributed to depositors' distrust in their bank following the sale of an asset portfolio. This in turn triggered further forced sales of assets at a loss. To break this vicious cycle, the US government eventually assumed control of the bank's business. Significant deficiencies in the management of interest rate risk were not corrected in time, due to the relaxation since 2018 of supervision of US banks with balance sheets of less than \$ 250 billion.

In the US, the government therefore had to intervene decisively by providing cover for all deposits held with these banks and introducing a new liquidity programme to mitigate the risk of contagion to other players, especially regional banks, including First Republic Bank. Despite this government intervention, market sentiment remained fragile and the following weeks were characterised by strong deposit outflows from a number of regional banks to larger banks and money market funds. At the end of April, First Republic Bank had to be rescued as an initial support from a consortium of other banks in the form of deposits failed to stabilise depositors' trust in the financial position of the bank. First Republic Bank was taken over by the FDIC and then sold to JP Morgan.

In Europe, Credit Suisse, which had initially strengthened its liquidity by borrowing a significant amount from the Swiss central bank, was taken over by its rival UBS, as announced on Sunday 19 March. Credit Suisse also showed vulnerabilities, having been involved in a number of problematic cases in the past (Archegos, Greensill) and having recorded repeated losses, despite various restructuring phases over the past few years. To ensure the success of the takeover by UBS, extraordinary liquidity measures and a guarantee from the Swiss federal government in case of losses reaching certain thresholds were also foreseen. One of the specific features of the deal that was struck was that, while the shareholders were compensated – in part – to the tune of three billion Swiss francs, the Swiss Financial Market Supervisory Authority (FINMA) decided that the so-called Additional Tier 1 (AT1) securities had to be fully written down, as contractually stipulated in case certain specific events, such as the granting of exceptional public aid, occurred. These AT1 securities, typically held by institutional investors, are perpetual bonds that can be converted into shares under certain conditions. Following the 2008 global financial crisis, these securities were issued en masse, under a new regulatory framework designed to shift the burden of any major problems within a bank from the public authorities to its creditors. FINMA's decision led to a de facto reversal of the creditor hierarchy expected by the market. In the wake of this decision, the competent authorities of the European Union and the euro area made it clear that they intend to follow the normal creditor ranking if a case such as Credit Suisse were to occur. However, the write-down of Credit Suisse's AT1 securities was a reminder that these securities could be used to support losses in severe cases. These developments drove up of funding costs for banks. This was particularly the case for AT1 securities, but also for other types of funding.

In the days that followed the takeover, against a backdrop of great nervousness in the financial markets, Deutsche Bank's share price underwent major corrections following a sharp rise in credit default swaps, a financial product that provides a kind of insurance against an institution's default. Other than the various restructurings it went

through, Deutsche Bank bears little resemblance to Credit Suisse. Deutsche Bank is a much more robust and profitable institution, which is a key difference from Credit Suisse. A broad consensus quickly emerged that the correction in Deutsche Bank's share price had taken place against a background of great nervousness, that the rise in credit default swaps was due to a limited number of positions in a relatively illiquid market, and that these developments should therefore not be seen as a sign that investors were questioning its good fundamentals.

The fact that the problems of US banks and Credit Suisse did not spill over to euro area banks is a testament to their resilience and the size of their capital and liquidity buffers.

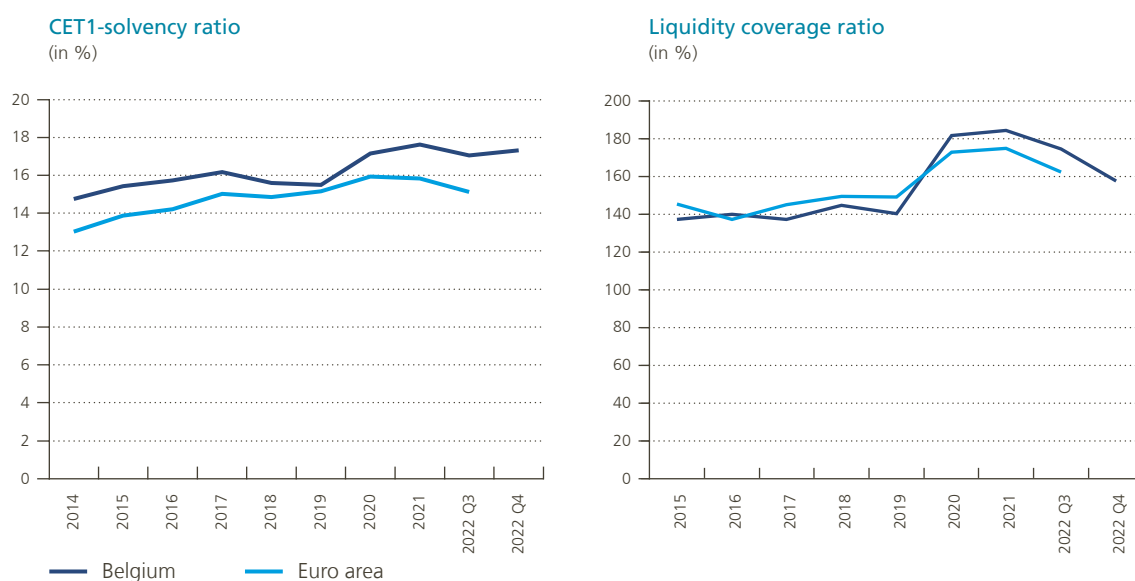
The Belgian financial sector proved to be very resilient to the events in the US and Swiss banking sectors. It did not have significant exposures to these institutions. This resilience also reflects the major differences between Belgian banks and the US and Swiss institutions that had to be supported.

3. The Belgian financial sector

The Belgian financial sector has a solid solvency position and is therefore able to absorb potentially large shocks. Belgian banks' CET1 ratio, a key indicator of solvency, stood on average at 17.3 % at the end of 2022, which is well above both the European average (15.1 % on average at the end of September 2022) and the minimum solvency requirements. Belgian banks thus have ample free capital buffers, which amounted to around € 20 billion at the end of 2022. The stress tests conducted in 2021 for all European banks underlined the robustness of Belgian banks against any major shocks and confirmed that they are among the strongest banks in Europe. Of the € 75 billion regulatory own funds available to the Belgian banking sector, only € 4 billion is in the form of so-called AT1 capital, which makes Belgian banks relatively insensitive to turmoil in this market. As regards the insurance sector, the solvency capital requirement (SCR) coverage ratio stood at 209 % at the end of 2022, which is more than twice the regulatory requirement. This comfortable level allows insurance

Chart 2

Belgian banks' capital and liquidity buffers



Sources: ECB, NBB.

companies, in particular, to absorb potential shocks that would result from a more significant market value correction on the assets side of the balance sheet – for example, in the event of price corrections in financial markets or an increase in risk premiums on bonds held – than on the liabilities side.

Belgian banks also have ample liquidity buffers that can be drawn on in an unlikely scenario of severe liquidity pressure. Belgian banks' liquidity coverage ratio – an indicator that a bank holds sufficient high-quality liquid assets to cover stressed outflows of funds for 30 days in a crisis period – averaged a bit less than 160 % at the end of 2022, which is well above the required 100 %.

The Belgian banking sector's funding base is also diversified and stable, consisting largely of deposits covered by the € 100,000 public guarantee. Around 60 % of the deposits held by Belgian households and businesses are in fact covered by this guarantee.

Finally, Belgian banks are actively managing the interest rate risk arising from the sharp and rapid rise in interest rates. This good risk management is due in particular to the soundness of the regulatory and supervisory framework in the euro area.

Belgian financial institutions are therefore very different from institutions such as Silicon Valley Bank or Credit Suisse, and are among the strongest in Europe.

Nevertheless, the rise in risk-free interest rates combined with the turmoil in financial markets in March had an impact on Belgian banks and insurance companies.

The profitability of banks again reached a high level in 2022. The Belgian banking sector posted a net profit of € 7.6 billion, representing as in 2021 a return on equity close to 10 %. This good level was supported in particular by the increase in interest income and continuously low credit loss provisions.

A sound management of interest rate risk allows banks to benefit from the general rise in interest rates after a long period of low or even negative interest rates. This period was indeed a major challenge for the profitability of traditional financial intermediation (conversion of deposits into loans) in the banking sector and of life insurance with a guaranteed minimum return. However, future developments in banks' interest income will depend on several factors. In a context where depositor behaviour may be more volatile than initially expected, the assumptions adopted by financial institutions – in particular with regard to the sensitivity of remuneration paid on deposits to rising market rates and to the return on alternative investments – are of major importance as part of their interest rate risk hedging strategy. If the interest rate sensitivity of deposits is underestimated, this could have a significant impact on banks' funding costs and profitability. In the wake of, *inter alia*, the events surrounding Credit Suisse, the cost of market funding was driven up as investors demanded a higher risk premium on top of the risk-free interest rates. Moreover, given the flat or even inverted nature of the risk-free yield curve, these various factors could weigh on Belgian banks' interest income in the future. Insurance companies are also exposed to interest rate risk, stemming from the fact that insurance policies can be surrendered before their maturity (lapses). In the case of life insurance with a guaranteed return, a sharp rise in interest rates may lead to an increase in surrenders of existing policies by insured wishing to reinvest their capital in assets offering better returns. Insurers need to properly assess and manage this risk. This is especially true for the associated liquidity risk. Indeed, in the event of large-scale surrenders of life insurance policies, insurers need to have sufficient liquid assets on their balance sheets to meet early surrender requests.

Credit loss provisions remained at a low level during the 2022 energy crisis, thanks in part to government measures and, for households, automatic wage indexation, against a backdrop of strong labour market performance. However, credit losses could materialise more strongly in the future as the turnaround in the credit and real estate cycles is now a reality. Moreover, it cannot be ruled out that the turmoil in financial markets and its impact, in the first place on financial institutions' funding costs, could amplify the tightening of credit conditions already underway and weigh on economic growth, increasing the magnitude of potential credit losses.

If the cooling of the property market, which could lead to a depreciation of some residential properties, were to be accompanied by an increase in repayment difficulties, this could result in the materialisation of vulnerabilities that have built up over the last years in the residential property market and in mortgage portfolios. The materialisation of the vulnerabilities in the residential property market would not be without consequences for the financial sector, nor for financial stability. Over the period 2014-2022, the total outstanding amount of mortgage loans granted by Belgian banks to Belgian households increased from around € 170 billion to around € 287 billion. Expressed as a percentage of banks' total assets, this represents an increase from 15 % to some 21 %. If need be, it will be important for banks to provide solutions to borrowers with reduced repayment capacity, particularly to help avoid unwanted macroeconomic shocks, for instance in the form of a sharp increase in mortgage defaults and evictions, which could lead to a correction in real estate prices. If it considers it necessary, the Bank could also release, where appropriate, subject to compliance with certain conditions, the capital buffer that the banking sector has been building up since 2013 for that purpose (see the point "Macroprudential policy" below).

Commercial real estate exposures, while smaller than residential exposures, are also significant. For banks, they amounted to € 67 billion at the end of 2022, or about a third of loans to Belgian businesses. For insurance companies, exposures amounted to around € 29 billion, or a bit less than 10 % of their total assets. The commercial property market is still characterised by a strong polarisation between prime and non-prime segments, which, against a backdrop of weak economic growth, could lead to an increase in credit losses in the future, especially for exposures whose repayment is partly linked to the proceeds of non-prime property and/or for exposures secured by such property. In addition, the commercial property market would also be affected if risks were to materialise in the residential property market. Approximately 30 % of corporate loans – obviously loans to firms in the construction and real estate sectors in the first place – can be considered "vulnerable" to a shock in the residential property market, due to the business of the companies concerned or the guarantees received by the bank.

Banks' profitability will also be less strongly supported by economic growth, which has been revised downwards since 2022. The same will be true for insurance companies. In 2022, however, the Belgian insurance sector again performed well, with a net result of € 3.7 billion, corresponding to a return on equity of 16 %.

In addition to short-term credit and interest rate risks and their potential impact on the profitability of the financial sector, structural developments related to digitalisation and the transition to a low-carbon economy continue to represent major challenges for the financial sector that also need to be monitored in view of their potential influence on financial stability. The digitalisation of the financial world offers opportunities for financial institutions, but also poses a number of risks, particularly cyber risks. Climate change and the transition to a more sustainable and low-carbon economy can also have a major impact on the economy and on the stability of the financial system. One of the main risks to the Belgian financial sector identified by the Bank in this regard is the transition risk associated with energy-inefficient buildings (see the point "Macroprudential policy" below).

Finally, potential risks to financial stability arising from institutions other than banks or insurance companies should also be closely monitored. Non-bank financial intermediation in Belgium is mainly carried out by investment funds that are not considered equity funds, and represented – according to the definition of the Financial Stability Board (FSB) – € 161 billion in assets at the end of 2022. This sector has shown resilience during both the pandemic and the energy crisis, thanks in part to its overall prudent risk management. In addition, the Belgian economy has only limited links to the global non-bank financial sector. Vigilance remains necessary, however, given the rapid developments and the vulnerabilities in this sector. These vulnerabilities were exposed again in 2022, when the UK central bank had to intervene to stabilise the UK government bond (gilt) market, which had been severely disrupted by the adverse interaction between leveraged investments by UK pension funds and sharply rising UK government bond yields. In order to remedy the deficiencies identified in recent years – including those revealed by the collapse of the financial service companies Greensill and Archegos, or the liquidity strains on certain funds during the COVID-19 pandemic – it is now a matter of translating into the international regulatory and supervisory framework the recommended reforms to the global non-bank financial sector established by the Financial Stability Board (FSB).

Developments in crypto-asset markets, which are not part of the regulated financial system, should also be closely monitored. These markets have recently been characterised by major negative developments, such as the collapse of the third largest stablecoin (TerraUSD) and the bankruptcy of a leading trading platform (FTX). These failures were due in part to shortcomings in the management and governance of the firms active on these markets. However, due to limited connections between regulated financial institutions and the crypto-asset markets, the tumult affecting the latter had little impact on the traditional financial system.

4. Macroprudential policy

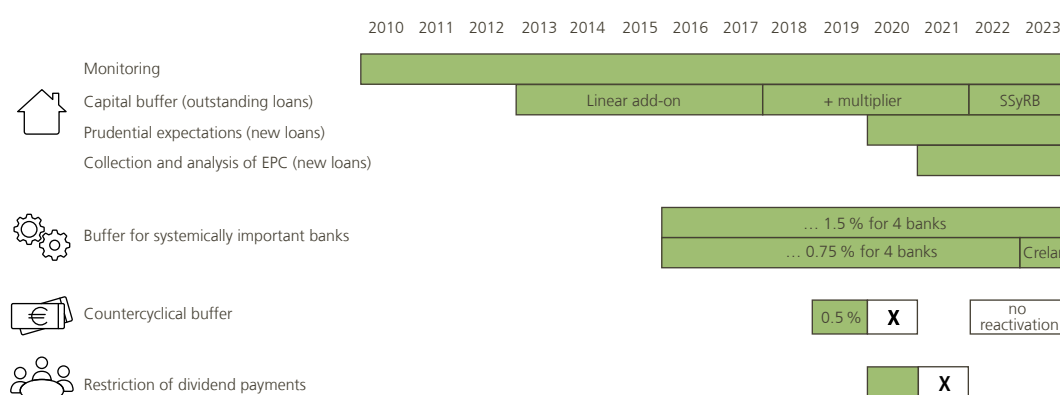
In recent years, macroprudential policy decisions have been taken in an uncertain environment characterised by a succession of crises of varying nature and origin and by a rapid tightening of monetary policy. In response to the COVID-19 crisis, macroprudential policy was eased in 2020, leading to the release of the countercyclical capital buffer in Belgium and many other European countries. In early 2022, against the backdrop of economic recovery and the removal of COVID-19-related restrictions, macroprudential policy was about to return to normal and to a policy comparable to that in early 2020. However, the Russian invasion of Ukraine and the resulting uncertainty forced macroprudential authorities to postpone and, in a second stage, re-evaluate the reintroduction of previously lifted requirements.

In the current context of tightening monetary policy and the turnaround in the financial and real estate cycles, recent macroprudential policy decisions in Belgium have pursued various objectives. Firstly, it was necessary to ensure that these measures would not act pro-cyclically and, in particular, would not amplify the tightening of credit conditions already underway. At the same time, the resilience of the Belgian financial sector to absorb potential shocks had to be maintained. Furthermore, it is important to encourage sound credit policies, but at the same time the necessary flexibility should be provided so as not to unnecessarily and excessively slow down the already weakened dynamics of the credit cycle even further. These different objectives have guided the Bank's actions as macroprudential authority in recent quarters.

In March 2020, the Bank, like many other macroprudential authorities, released the countercyclical capital buffer that had been activated (at a level of 0.5 %) in Belgium in 2019 in response to the acceleration of the financial cycle observed at the time. The countercyclical capital buffer is a temporary buffer built up in the upward phase

Chart 3

The Bank's macroprudential policy



Source: NBB.

of the credit cycle to ensure that banks have sufficient leeway to cover (potential) credit losses in the downward phase of the cycle. In early 2020, this buffer amounting to around € 1 billion was released to provide Belgian banks with additional room to, in particular, finance moratoria and other debt restructuring solutions for viable borrowers experiencing temporary or more structural bank loan repayment problems.

Considering the impact of the energy crisis and high inflation on economic growth and given the then expected turnaround in the credit and real estate cycles, the Bank decided in September 2022 not to reactivate the countercyclical buffer. In this way, the Bank wanted to ensure that Belgian banks have full flexibility in using their ample free capital resources to support the real economy, i.e. to continue providing an adequate flow of credit to the real economy and to proactively offer moratoria and other debt restructuring options to borrowers facing temporary or more structural repayment difficulties.

In view of the additional uncertainties created by the turmoil on the financial markets in March 2023 and given the fact that the turnaround in the financial and real estate cycles is now a fact, the Bank at the end of March confirmed its decision not to reactivate the countercyclical capital buffer. By doing so, it wants to avoid amplifying the tightening of credit conditions inherent in the downward phase of the financial cycle. Nevertheless, the Bank reiterates its previously formulated expectations for the financial sector (see the point “Conclusions and recommendations” below), and will closely monitor Belgian banks’ use of the capital headroom provided to them by the decision not to reactivate the countercyclical capital buffer.

To cope with potential shocks that could generate losses for the banking sector, it is however important to safeguard the sector’s resilience. As a macroprudential authority, the Bank imposes specific capital requirements on domestic systemically important banks to enhance their resilience, given the high economic and social costs of their potential failure. These requirements were maintained in 2023. The list of these banks, which is published annually, includes eight banks. The additional capital requirement imposed on each bank depends on its systemic importance: it amounts to 1.5 % of risk-weighted assets for the four most systemically important banks, and 0.75 % for the other four. These buffers, that have been gradually built up since 2016, are relatively large; at the end of 2022, they totalled more than € 5 billion for the Belgian banks concerned. Following the acquisition of AXA Bank Belgium by Crelan in late 2021, the Bank adapted the list of systemically important banks to include Crelan, which has been subject to an additional capital requirement of 0.75 % of risk-weighted assets since 1 January 2023.

The Bank recently extended the application of another capital buffer, introduced in 2013 to cover systemic risks in the mortgage portfolios of banks that calculate their minimum capital requirements using an internal risk model. Such a calculation generally yields low risk weights, as Belgium has never experienced a real estate crisis. In the event of a significant shock in this market, potential losses would therefore be underestimated.

Since 2013, the application of this buffer has been extended several times and the buffer itself has been modified. In 2023, it was decided to extend it until the end of April 2024. Despite the marked improvement in the quality of new mortgage loan production (see below), the Bank decided to maintain this buffer at the same level, i.e. around € 2 billion for the sector as a whole. In this respect, it followed the warning issued by the European Systemic Risk Board (ESRB) in September 2022, which noted an increase in the likelihood of a number of risks to financial stability materialising and the need, in this context, to safeguard the sector’s resilience while taking due account of the potential pro-cyclical effects of macroprudential decisions.

In May 2022, the buffer was transformed into a sectoral systemic risk buffer (SSyRB) of 9 % applied to the relevant risk-weighted assets. Considering the increased likelihood of risks materialising in the real estate market, particularly in view of the turnaround in the real estate cycle, the Bank stands ready – as it has already indicated in the past – to release this macroprudential capital buffer if, for example, there is a significant increase in payment difficulties for mortgage borrowers. If released, this buffer should serve not only to absorb losses due to payment defaults, but also to fund solutions for customers with repayment problems in order to avoid generating a huge wave of payment defaults, evictions and forced property sales.

Besides this capital buffer, the Bank has taken other measures to mitigate the risks to financial stability related to the Belgian financial sector's significant exposure to the housing market. In early 2020, it issued prudential expectations for financial institutions providing mortgage loans. These recommendations aimed to improve the average credit quality of new mortgage loans, in particular by reducing the share of loans with a high loan-to-value (LTV) ratio, thus ensuring that the risks associated with outstanding loans remain under control.

Each financial institution must certify annually to the Bank that it complies with these prudential expectations or, where appropriate, justify why it does not, especially with regard to the production of buy-to-let loans. The first two compliance reports, which pertained to the 2020 and 2021 production, showed that the financial sector had broadly followed the Bank's recommendations, or, where relevant, provided explanations showing that their credit policy was sound. The Bank is currently analysing the third compliance report received at the end of April 2023 on the production of loans in 2022. The figures already available show that, like in the two previous years, the sector followed the Bank's expectations in 2022.

For buy-to-let loans, which are considered riskier, the Bank has established a lower reference threshold and a smaller margin of tolerance than for other mortgage loans. The share of such loans with an LTV over the threshold of 80 % has considerably dipped, going from an average of 33 % in 2019 to 9 % in 2022, a level currently below the 10 % tolerance margin set by the Bank. For some individual institutions, however, this share remained above the tolerance margin. In previous assessments of the financial sector's compliance with these expectations, the Bank nevertheless considered that, where the tolerance margins were exceeded, the explanations provided were justified in the sense that they confirmed that financial institutions were applying a sound credit policy for this segment.

Among first-time buyers, for whom the recommendations are most flexible, the percentage of loans with an LTV higher than the reference threshold of 90 % applied by the Bank, declined from 45 % in 2019 to 25 % in 2021 and stabilised around this level in 2022. This percentage thus remains well below the Bank's tolerance margin, according to which 35 % of such new mortgage loans may exceed the 90 % LTV threshold. The fact that the margins available for granting loans with a high LTV have not been completely used up, show that the Bank's recommendations leave sufficient leeway (in terms of LTV) for first-time buyers. Furthermore, data from the Individual Credit Register show that the share of loans granted to borrowers aged under 35 in the total of new loans has remained stable in recent years at around 35 % and has even increased in 2022 and 2023.

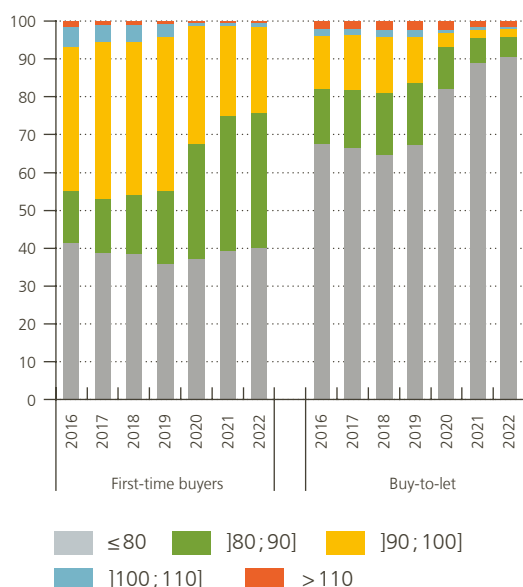
In a rising interest rate environment, however, it is expected that mainly mortgage loan rates – at constant monthly debt burden and constant maturity – rather than LTV will limit prospective buyers' borrowing capacity. In this context, and on the assumption that the share of mortgage repayments in households' monthly budgets is the constraining factor in most cases, the Bank welcomes the moderate extension of maturities for new mortgage loans observed since 2022. Indeed, when mortgage rates rise, such an extension helps to preserve the borrowing capacity of households and thus avoids an excessive slowdown in mortgage lending and market dynamics.

Still with regard to Belgian financial institutions' real estate exposures, in late 2020, the Bank published a circular setting out its expectations and reporting requirements regarding the consideration of energy efficiency of real estate exposures in the financial sector's climate change risk management (see above). In monitoring compliance with these expectations, the Bank found that the financial sector has made significant progress in this area. However, it believes that the sector should further improve the collection of relevant data, including EPC certificates of properties financed or pledged as collateral, as well as further develop a framework for monitoring the energy (in)efficiency risks of these properties and conduct in-depth analyses to ensure that energy efficiency is properly integrated into the risk management framework.

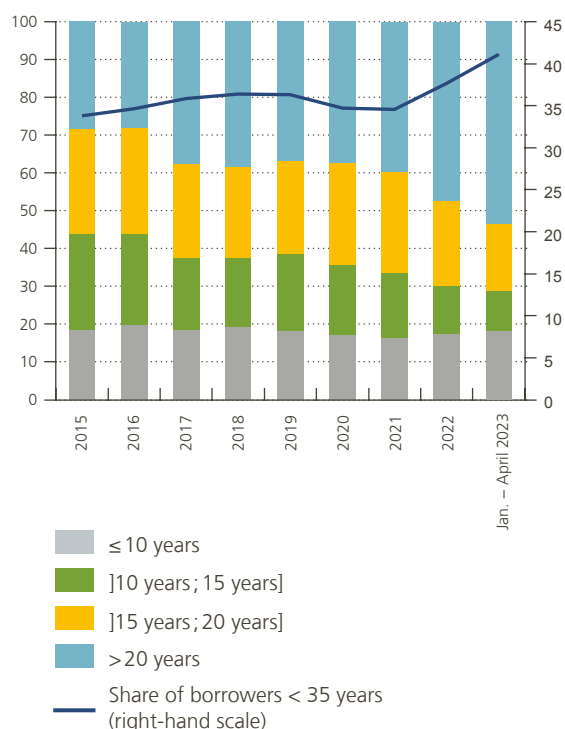
Chart 4

Mortgage lending conditions

Breakdown of new mortgage loans according to LTV, by borrower segment (in %)



Breakdown of new mortgage loans according to maturity and share of borrowers aged under 35 (in %)



Source: NBB.

5. Conclusions and recommendations

The current economic and financial context, characterised in particular by the turnaround in the credit and real estate cycles, and the additional uncertainties arising from developments in the US and Swiss banking sectors once again highlight the role to be played by the financial sector in supporting the economy. Financial institutions should therefore not only use the room for manoeuvre provided by the macroprudential authority for this purpose, but should also maintain sufficient additional room for manoeuvre in the light of the persisting uncertainties, in particular by being prudent in their decisions on dividends and other types of profit distribution.

In view of its decision to maintain the countercyclical capital buffer at 0%, the Bank counts on the banking sector to maintain lending to households and non-financial corporations without tightening credit conditions unnecessarily and pro-cyclically. In particular, care should be taken to avoid any excessive slowdown in mortgage lending to first-time buyers, whose borrowing capacity is put under pressure by the rising interest rates. To this end, the financial sector can moderately extend the maturities of new mortgage loans, but also use the available margins to grant loans with higher LTV ratios.

Belgian banks should also use the capital headroom available to them as a result of the Bank's decision not to reactivate the countercyclical capital buffer, to proactively offer debt restructuring solutions to customers

experiencing repayment difficulties and, if necessary, increase credit risk provisions considering the potential materialisation of risks on assets accumulated when interest rates were low and the credit cycle was in its upward phase.

Belgian banks and insurance companies have prudently managed the interest rate and liquidity risks inherent to a period of rising interest rates. The financial sector must continue to deal with these risks in a prudent manner. The events in the United States and Switzerland showed that idiosyncratic problems can have wider repercussions in an environment of generally tighter financial conditions.

In addition, although the situation of European and Belgian banks differs in many ways from that of banks like Silicon Valley Bank or Credit Suisse, European and Belgian regulators cannot be complacent and must remain vigilant. The events in the banking sector served as a reminder that only sufficiently strong regulation and close supervision can prevent major problems in the financial sector and thus ensure that the latter can continue to play its important role as a financial intermediary. The euro area has a robust and harmonised supervisory framework in place, notably through the Single Supervisory Mechanism consisting of the ECB and national supervisors. However, it is important to maintain a sufficiently high level of supervision and regulation. The Bank reiterates that the current discussions on the final transposition of the Basel standards in Europe should lead to a better alignment of future European banking requirements with the standards set at international level by the Basel Committee on Banking Supervision. Only a credible regulatory framework can ensure financial stability in the future. This framework will also need to be adapted in the future in the light of lessons learned from recent events. For example, it will be necessary to assess the extent to which the assumptions regarding deposit withdrawals in times of crisis as used in the calculation of banks' liquidity ratios are sufficiently stringent in an increasingly digitalised environment.

Finally, as far as the insurance sector is concerned, there is still a need for a new and stable legal framework that unambiguously determines how the costs of damages related to future natural disasters will be allocated. The legal uncertainty resulting from this situation has important consequences for Belgian insurers, particularly with regard to the possibility, level and cost of reinsurance of natural catastrophe risk, but may also ultimately lead to higher premiums for policyholders.

Financial Stability Overview

Financial stability can be defined as a condition in which the financial system can withstand shocks without major disruption in financial intermediation and in the effective allocation of savings to productive investment. While the Bank's Annual report covers in detail other stability-related elements (e.g. as regards sustainable growth or 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 exposure to risks. 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 covered but above all to remind investors of their highly speculative nature and of the big risks of losses due to the way in which these markets are (not) organised.

As the financial performance and resilience of Belgian financial institutions is affected by developments in financial, credit and real estate markets and overall economic conditions, this article starts with a discussion of the main developments – and potential future risks – in the operating environment of the financial sector. This macroeconomic and financial environment is marked by persistently high inflation and a sharp tightening of monetary policy, a turn in the credit cycle and a significant cooling of the Belgian residential real estate market after many years of dynamic growth. It increases the probability of unexpected losses on risks that remained below the water line when interest rates were low, credit and liquidity conditions ample and asset prices high.

This article complements the overview of the Bank's macroprudential policies, that work to mitigate these financial stability risks, provided in the accompanying Macroprudential Report. This Macroprudential Report also includes a number of recommendations.

1. Operating environment

The environment in which Belgian banks and insurance companies operate changed dramatically in the course of 2022. The Russian invasion of Ukraine and the sharp rise in energy prices had only a limited direct impact on Belgian financial institutions, due to their low exposure to counterparties in the respective countries and only marginal involvement in the energy and commodity derivative markets. But they had to cope with high inflation, rising interest rates and less favourable growth prospects. A key development during the period under review was the significant tightening of monetary policy in almost all major currency areas (left-hand graph of Chart 1).

While the stronger than expected economic recovery from the pandemic and the global health measures in 2020 and 2021 initially drove the surge of inflation, it was later aggravated by other factors. In the US, a large-scale fiscal stimulus came up against an already tight labour market and other supply constraints. Higher gas and electricity prices fuelled inflation in Europe as pre-existing tensions in energy markets were exacerbated by the sanctions imposed after Russia's invasion of Ukraine. Supply disruptions related to China's public health (zero-infection) policy also contributed to price pressures in 2022.

As the energy price rise in the euro area constituted an adverse supply shock for the economy (higher inflation and lower growth), the European Central Bank (ECB) had to assess the extent to which demand needed to be moderated in order to curb inflation. US inflation was driven to a much larger extent by demand factors. The Federal Reserve thus responded earlier to the rise in inflation. The ECB caught up as inflationary pressures broadened and persisted. As a first step, the ECB's asset purchase programmes were discontinued, albeit with reinvestment of maturing debt securities. In the second half of 2022, policy rates were raised too, along with the creation of the transmission protection instrument (TPI). This TPI aims to avoid excessive fragmentation in the transmission of monetary policy and enables the central bank to purchase the sovereign bonds of euro area countries facing large interest rate fluctuations which are not justified by fundamental economic factors.

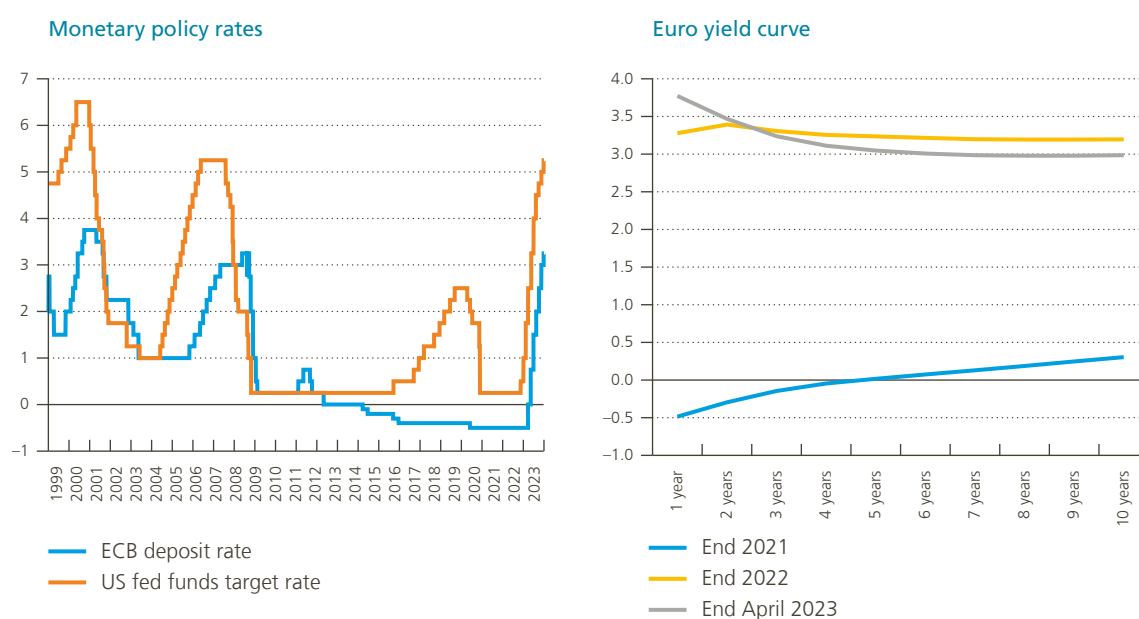
In the first months of 2023, the Federal Reserve and ECB continued to raise policy rates to bring inflation back down to target, although banking sector turmoil cast uncertainty on the economic outlook towards the end of the quarter. The ECB carried out two consecutive 50-basis-point interest rate rises in February and March and an additional rate hike of 25 basis points in May, bringing the deposit facility rate up to 3.25 % (from –0.5 % before the first rate increase in July 2022). In addition, as previously announced, the ECB stopped fully reinvesting principal payments from maturing securities in its asset purchase programme (APP) portfolio in March 2023. The Federal Reserve also continued to raise its policy rates in February, March and May, but by smaller 25-basis-point increments, lifting the target range for the federal funds rate to between 5.00 % and 5.25 %.

This tighter monetary policy ended a long period of very low (and even negative) interest rates in the euro area and contributed to a significant upward shift of the yield curve. As shown in the right-hand graph of Chart 1, euro area interest rates rose sharply across all maturities but somewhat more at the short end of the curve. Between the end of 2021 and the end of April 2023, the 10-year euro swap rate increased by more than 2.6 percentage points while the 1-year swap rate jumped by more than 4.25 percentage points. As a result of this sharp increase in short-term rates, the euro area yield curve had a slightly inverse shape at the end of April 2023.

Chart 1

Monetary policy and euro yield curve

(in %)



Source: Refinitiv.

1 Yield curve based on swap rates.

The end of the long period of very generous financing conditions triggered downturns in equity and bond markets (left-hand graph of Chart 2). The benefits of a diversified investment portfolio comprising both equity and debt securities did not come into play in this case. The losses in institutional and retail investors' investment portfolios were therefore higher than in previous stock market corrections. Yet, price corrections in financial markets were generally orderly. Liquidity in some sub-segments of the capital markets deteriorated, but there was no repeat of the widespread turbulence seen in March 2020 at the start of the pandemic. One notable exception was the UK, where the central bank had to intervene to stabilise the UK government bond (gilt) market. This market was dislocated due to the adverse interaction between UK pension funds' leveraged investments and a sharp rise in gilt yields, following the announcement of an expansionary fiscal policy. Although the problems remained confined to the British market, they were another example of the risks in the global non-bank financial sector when excessive leverage is used to boost returns or insufficient reserves are kept to cope with liquidity shocks (see also section 4).

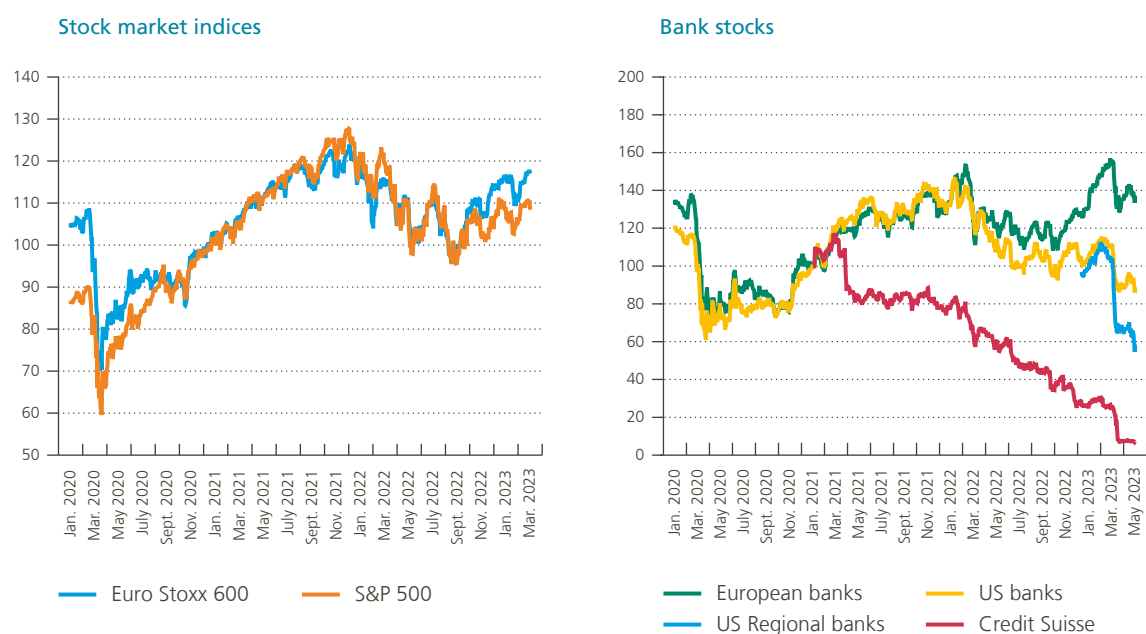
During the period under review, investors in bank stocks generally considered the exit from the low interest rate environment as a positive development for banks' profitability, helping to restore net interest margins (right-hand graph of Chart 2). Yet, in March 2023, both US and European banks' stock market valuations came under pressure as a result of bank failures in the US (Silicon Valley Bank, Silvergate Bank and Signature Bank) and Switzerland (Credit Suisse) and more general concerns about the financial position of US regional banks (Box 1). At the end of April, the US regional First Republic Bank was taken over by the Federal Deposit Insurance Corporation and sold to JP Morgan.

The spillover of these tensions to euro area banks was mitigated by several factors. Investors first of all acknowledged that institution-specific rather than generalised vulnerabilities explained the fragility of these US and Swiss banks. Significant differences in certain aspects of the regulatory and supervisory frameworks in the respective jurisdictions also came to the forefront. Euro area banks' resilience also reflected their overall

Chart 2

US and European equity markets and bank stock prices

(Indexed to 1 January 2021 = 100)



Source: Refinitiv.

strong capital and liquidity positions that are well above the minimum requirements. That said, the recent events clearly refocused bank investor attention to the composition of banks' deposit funding (including the share of insured deposits), the risks of losses on so-called additional Tier 1 capital instruments and the way in which banks correctly managed their interest rate and liquidity risks in the low interest rate period, in view of the current tightening financial conditions. In addition to a significant increase in banks' funding cost on the capital markets, analysts factored in that the March-April 2023 events are likely to lead to a lower risk appetite in the banking system, fiercer competition for (relatively cheap) deposit funding, tighter credit standards and slower lending growth.

BOX 1

Vulnerabilities in the US banking system and at Credit Suisse

In March, stock market valuations of US and European banks came under pressure as a result of bank failures in the US (Silicon Valley Bank, Silvergate Bank and Signature Bank) and Switzerland (Credit Suisse) and more general concerns about the financial position of US regional banks. At the end of April, the US regional First Republic Bank was taken over by the Federal Deposit Insurance Corporation and sold to JP Morgan.

The failures of the US banks in the first half of March 2023 were due to specific vulnerabilities at these institutions. In the case of Silicon Valley Bank (SVB), the business model and funding sources were characterised by a very high degree of concentration on one specific group of customers (venture capital firms for tech start-ups), which made it vulnerable to a large draw-down of deposits when the business outlook for that specific economic sector turned down. In addition, the vast majority of deposits collected by SVB were not insured. These factors contributed to the formation of depositors' distrust of their bank, following the sale of a portfolio of assets, which led SVB to carry out further forced sales of assets at a loss, thus reinforcing a vicious circle that eventually led the US authorities to take possession of the bank. Major shortcomings in terms of interest rate risk management were observed, not helped by the relaxation since 2018 of the supervision of US banks with a balance sheet of less than \$ 250 billion. The failure of SVB was followed days later by the collapse of two smaller US banks that had focused on the crypto industry (Silvergate Bank and Signature Bank). The US authorities intervened decisively by covering for deposits and introducing a new liquidity programme in a bid to limit the risk of contagion spreading to other credit institutions, particularly regional banks. Despite these interventions, market sentiment remained fragile and the following weeks continued to be characterised by significant deposit outflows from a range of regionally-based banks to larger banks and money market funds. At the end of April, the regional First Republic Bank had to be rescued as an initial support from a consortium of other banks in the form of deposits failed to stabilise depositors' trust in the financial position of the bank. This bank had granted a large amount of low-yielding mortgage loans during the low interest rate environment to attract wealthy clients and failed to hedge these positions sufficiently to cover the risk of losses in a higher interest rate environment. This unrealised losses in turn led to a massive withdrawal of client deposits.

In Europe, Credit Suisse had to be supported by a large liquidity line from the Swiss central bank and was subsequently taken over by UBS on Sunday 19 March. Credit Suisse also had its own specific



vulnerabilities, having been involved in numerous problematic cases in the past (Archegos, Greensill) and recording repeated losses, despite various restructuring phases in recent years. To ensure that the sale to UBS could be carried out successfully, extraordinary liquidity measures and a guarantee by the Swiss federal government in the event of losses beyond and up to certain thresholds were also foreseen. Credit Suisse shareholders were compensated – albeit to a limited extent – to the tune of CHF 3 billion but the Swiss Financial Market Supervisory Authority (FINMA) nevertheless triggered a full write-off of the so-called additional Tier 1 securities (AT1), as contractually provided for in the event of the occurrence of certain specific events, especially in the case of exceptional public support. These AT1 securities, generally held by institutional investors, are perpetual bonds convertible into shares under certain conditions and were issued in large volumes after the major financial crisis of 2008, under a new regulatory framework aimed at shifting the burden of any major problems within a bank from the public authorities to its creditors. FINMA's decision led to a *de facto* reversal of the creditor hierarchy expected by the market. In the wake of the FINMA decision, the competent authorities of the European Union and the euro area made it clear that they intend to follow the normal creditor hierarchy if a case such as Credit Suisse were to occur. The write-down of AT1 instruments was also a reminder that these securities could be used to support losses in severe cases. These developments have pushed up the cost of funding for banks, for AT1 securities specifically, but also for other types of funding.

In the days that followed these bank failures, amidst fragile investor confidence in financial markets, Deutsche Bank's share price underwent major corrections following a sharp rise in credit default swaps – a financial product providing insurance against an institution's default. In the past, Deutsche Bank had been subject to a series of restructurings, but otherwise bears little resemblance to Credit Suisse. Deutsche Bank is a much more robust and now profitable institution, which is a key difference from Credit Suisse. There was a broad consensus that the correction in Deutsche Bank's share price took place in a very nervous environment, that the rise in credit default swaps was the result of a limited number of positions in a relatively illiquid market and that these developments should therefore not be interpreted as a challenge to the good fundamentals of the bank. The tensions therefore quickly subsided.

As shown in the upper panel of Chart 3, Belgian banks have in previous years stepped up their lending to the Belgian non-financial private sector. Over the last ten years, loans granted to Belgian households and non-financial corporations have grown from € 300 billion to more than € 450 billion. This expansion of credit was fostered by the low cost of borrowing (lower panels of Chart 3) and the dynamic Belgian residential real estate market.

While the cost of borrowing has risen significantly since mid-2022, the interest rates for new bank loans have not increased as much as might have been expected on the basis of developments in swap rates and the average commercial loan margins that Belgian banks applied to loans in 2021. This suggests that competition in the lending market intensified at the margin in recent months, possibly also in response to the decline in demand for new bank loans from households and non-financial corporations. It would support the view that the observed slowdown in annual credit growth up to end March 2023 (right-hand upper graph of Chart 3) was mostly the reflection of significantly lower demand for credit and not so much of a tightening of credit standards by banks.

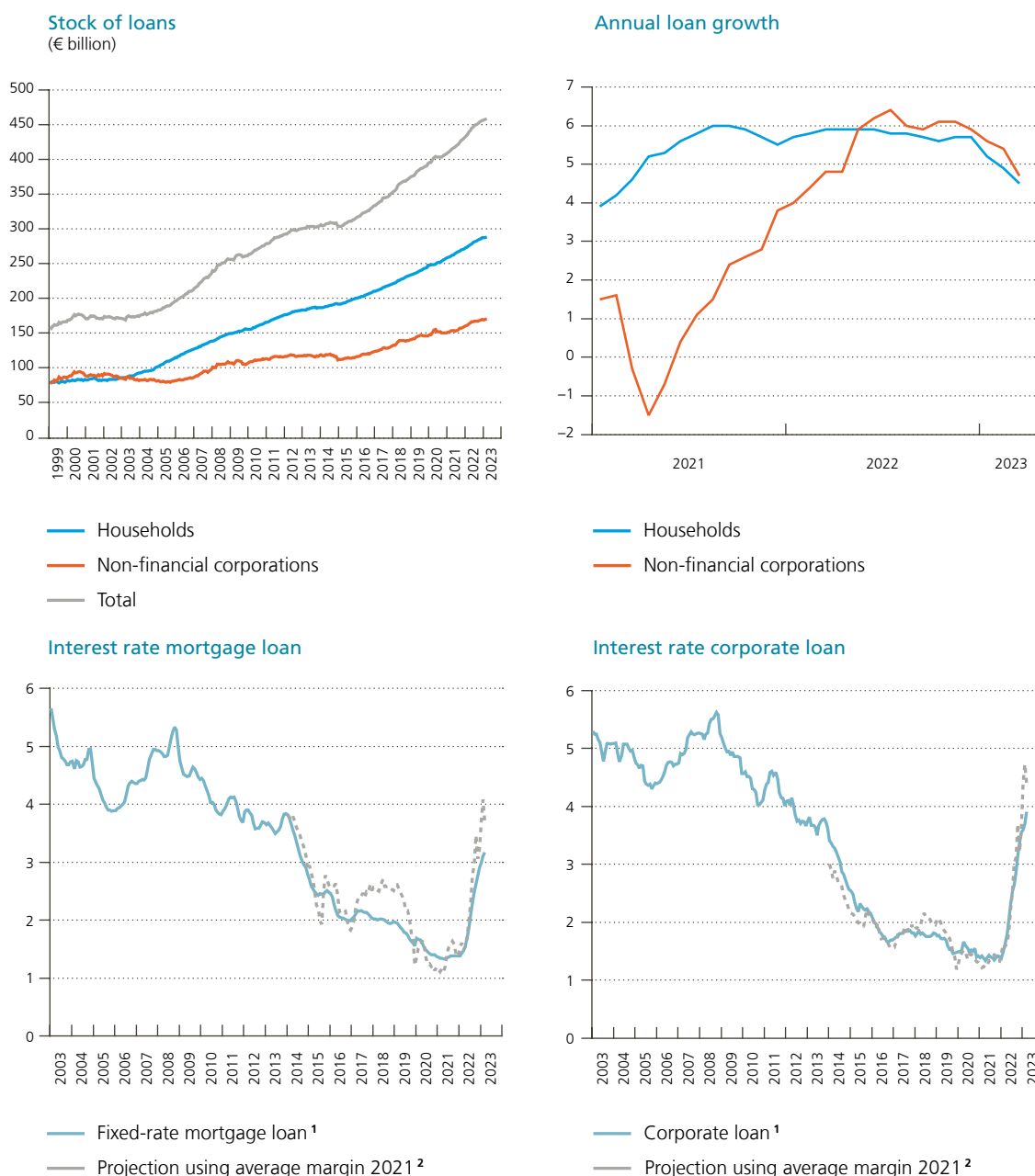
While the slowdown of annual credit growth in recent months heralds a turn in the credit cycle after years of dynamic growth, it is still moderate when measured in nominal terms. Other indicators suggest a stronger

downturn in the credit cycle. Annual credit growth measured in real terms, for example, has been negative since the fourth quarter of 2021 as nominal credit growth has not kept pace with the higher rate of inflation. More timely indicators of credit demand such as the bank lending survey and new mortgage loan statistics point to an acceleration in the slowdown of credit growth in the last few months.

Chart 3

Bank credit to Belgian households and non-financial corporations

(in %, unless otherwise stated)



Source: NBB, Refinitiv.

1 As recorded in the MIR-statistics (mortgage loan rate fixed for at least 10 years and corporate loan rate fixed for at least 5 years).

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

Given this backdrop, it is important that banks do not amplify this downturn in the credit cycle by a procyclical tightening of credit conditions. This is the reason why the Bank has been very prudent in its quarterly decisions on the countercyclical capital buffer (CCyB). This is a temporary buffer built up in the expansion phase of the credit cycle to ensure that, when the cycle enters a downturn, banks are able to absorb credit losses, support lending and finance solutions for customers at a high risk of default. In keeping with its intended purpose, the buffer of 0.5 % was therefore released in March 2020, at the start of the pandemic, to help banks absorb unexpected losses and finance measures to support the economy. The post-pandemic recovery of the economy and renewed dynamic growth in loans to households and businesses in early 2022 suggested that reactivation of the buffer could have been appropriate. However, given the high level of uncertainty generated by Russia's invasion of Ukraine, high inflation and soaring interest rates, the Bank decided to take a cautious approach and to continue to assess the need for reactivation of the countercyclical capital buffer. In September 2022, the Bank then decided that reactivation of this buffer was no longer justified, given the deterioration in the growth outlook and the signs of a turning point in the financial and credit cycles.

By leaving the CCyB rate at 0 %, the Bank provides banks with full flexibility to use their ample available capital to raise credit provisions in a pro-active way and to support the real economy. Banks must use this flexibility to maintain lending to households and corporations, with no undue procyclical tightening of credit conditions; offer, in a pro-active way, debt restructuring solutions to clients with temporary or more structural loan repayment problems; and, last but not least, boost credit risk provisions, wherever necessary, in light of a potential materialisation of risks on assets accumulated during the low interest rate period and in the upward phase of the credit cycle. The Bank will continue to closely monitor the effective use of this capital margin by banks for the intended purposes.

The tightening of financial conditions and the turn in the credit cycle raise the probability of unexpected losses related to vulnerabilities that remained below the waterline when interest rates were low, credit and liquidity conditions ample and asset prices high. This is particularly true for exposures to highly-indebted households and non-financial corporations.

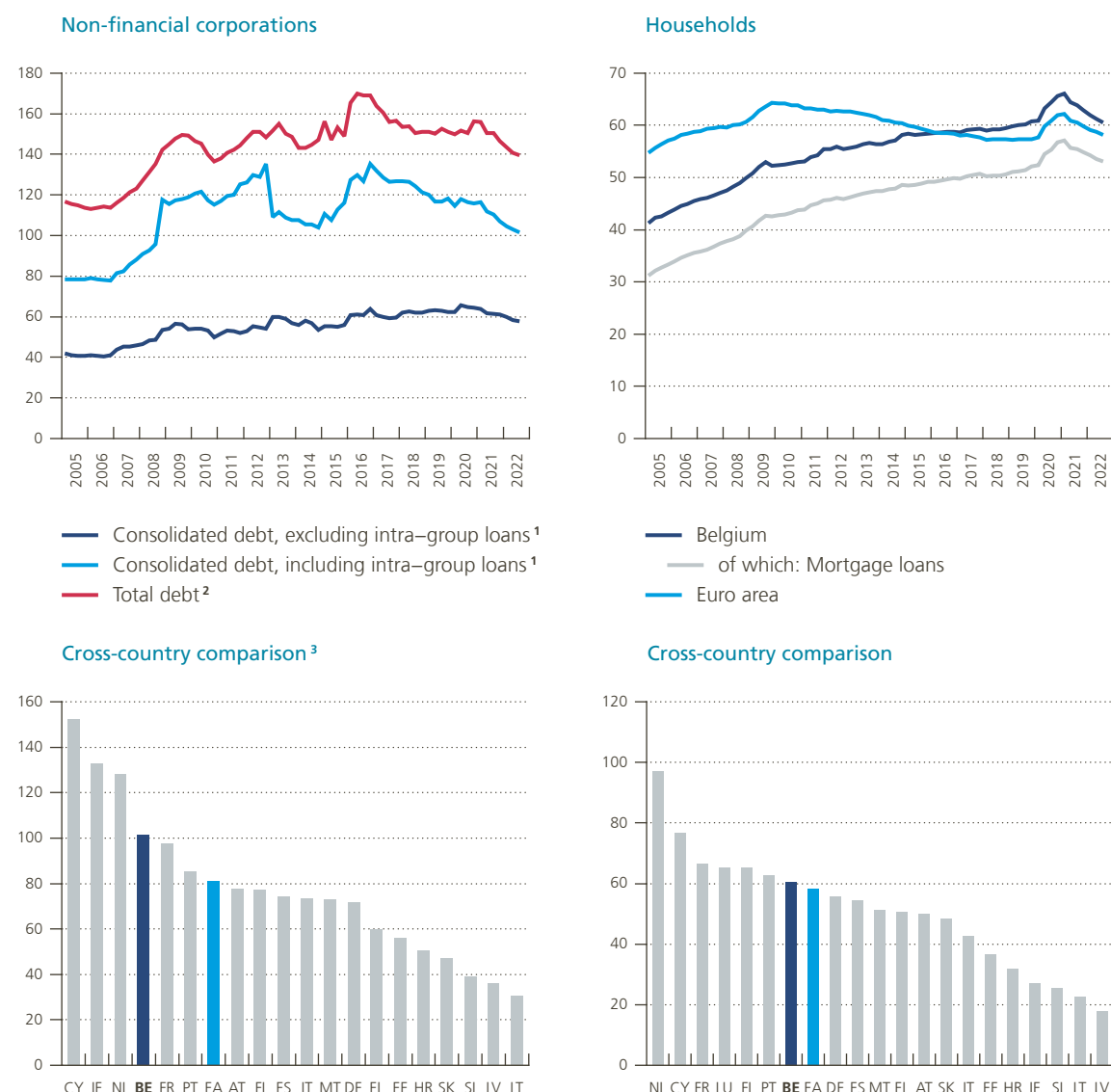
As shown in Chart 4, Belgian household debt has increased significantly in recent decades and currently stands at 60 % of GDP. Mortgage loans were the main driver behind this growing indebtedness, which is now slightly higher than the average seen in the euro area. At the same time, Belgian households still have large financial assets and most of the mortgages have a fixed interest, insulating the debt service cost of these loans from developments in market interest rates. Vulnerabilities in the household sector are therefore mostly concentrated in certain vulnerable sub-segments. As discussed in more detail in Chapter 5 of the Bank's Annual Report 2022, relatively few households in the first and second income quintiles have a mortgage (9 % and 18 %, respectively) but a significant proportion of those who do (50 % and 25 %, respectively) spend more than 30 % of their pre-tax income on mortgage payments. Households in the lower income quintiles generally also have much less liquid financial assets to cope with temporary income shocks than those in the higher income quintiles. Households in the third and fourth quintiles are more likely to have a mortgage (34 % and 48 %, respectively), but just under 10 % of those who do spend more than 30 % of their income on it and they generally hold a buffer of liquid financial assets that can be used to service the mortgage loan in the event of an income shock.

Belgian non-financial corporations have a relatively high debt ratio in comparison to the euro area average, but they have recently reduced their debt ratio. The best metric looks at the consolidated debt excluding intra-group loans and stands at 58 % of GDP. Belgian firms came out of the pandemic in better financial health overall, with debt ratios that were generally declining at the end of 2021 (see also Chapter 5 of the Bank's Annual Report in this connection). In 2020, some companies saw their equity depleted as a result of losses incurred during the first waves of the pandemic and, to avoid running out of cash, took on debt or applied for the moratorium on loan repayments. This was particularly the case for those active in industries most affected by the lockdown measures. But the effect of the pandemic on corporate balance sheets was greatly reduced by the lump-sum allowances and tax deductions granted by the federal and regional governments and companies' ability to adjust their costs when faced with a substantial drop in business. Firms were also helped by the labour furlough scheme. Moreover, while some of the companies most affected by the crisis were initially bailed out by advances from their managers,

Chart 4

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 the quarterly debt ratio series.

partners or shareholders, there were more recapitalisations in 2021, which brought debt ratios down to more acceptable levels. At the start of the energy crisis in 2022, Belgian companies had, on the whole, sufficient buffers to absorb this new shock to their operating profits (including the costs related to the automatic indexation of wages in Belgium) and the number of bankruptcies has remained quite low since the beginning of 2022, after moratoria on social security and tax liabilities were lifted. These moratoria were introduced during the pandemic to alleviate potential liquidity problems for companies. For the year as a whole, slightly less than ten thousand bankruptcy proceedings were referred to the courts. While this figure is higher than the six and a half thousand bankruptcies recorded in 2021, when the moratoria were still in effect, it is comparable to the averages observed before that.

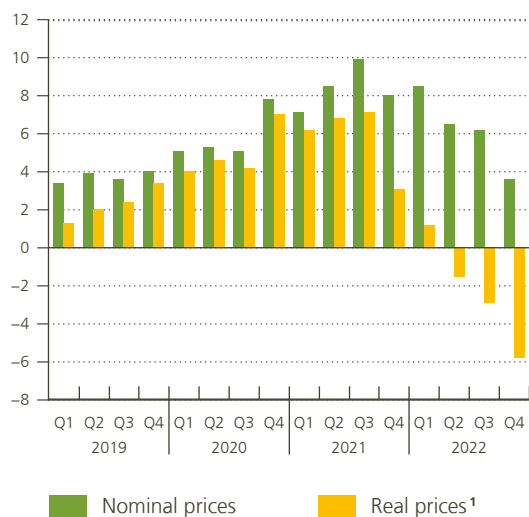
Chart 5

House prices and new mortgage lending

(in € billion, unless otherwise stated)

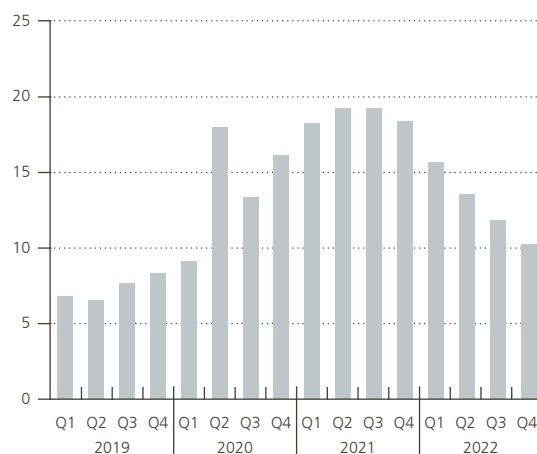
Yearly growth in house prices

(in %, seasonally adjusted data)

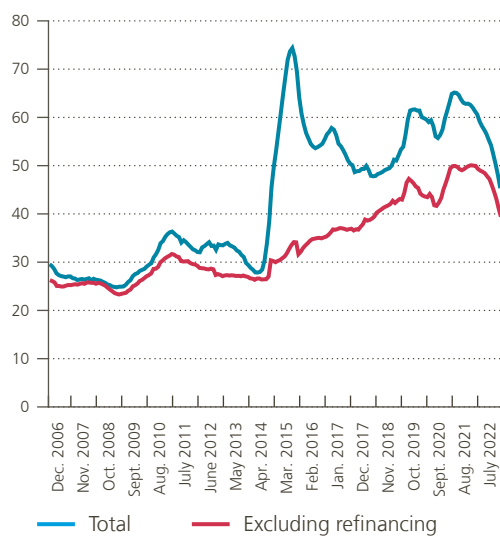


Deviation of house prices from prices estimated using the Bank's model²

(in %)

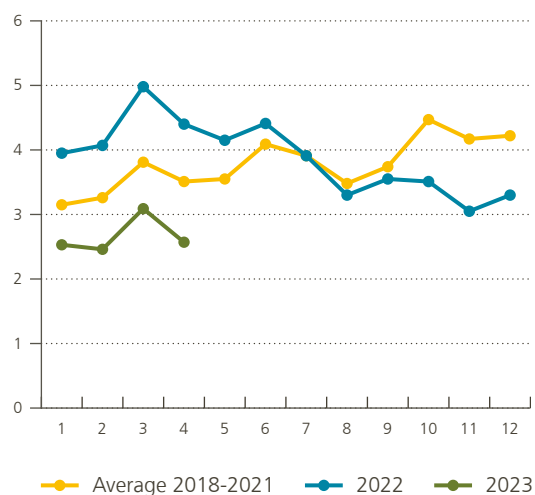


New mortgage loans of last 12 months



Monthly data

(excl. refinancing operations)



Source: NBB.

1 Deflated by the private consumption deflator.

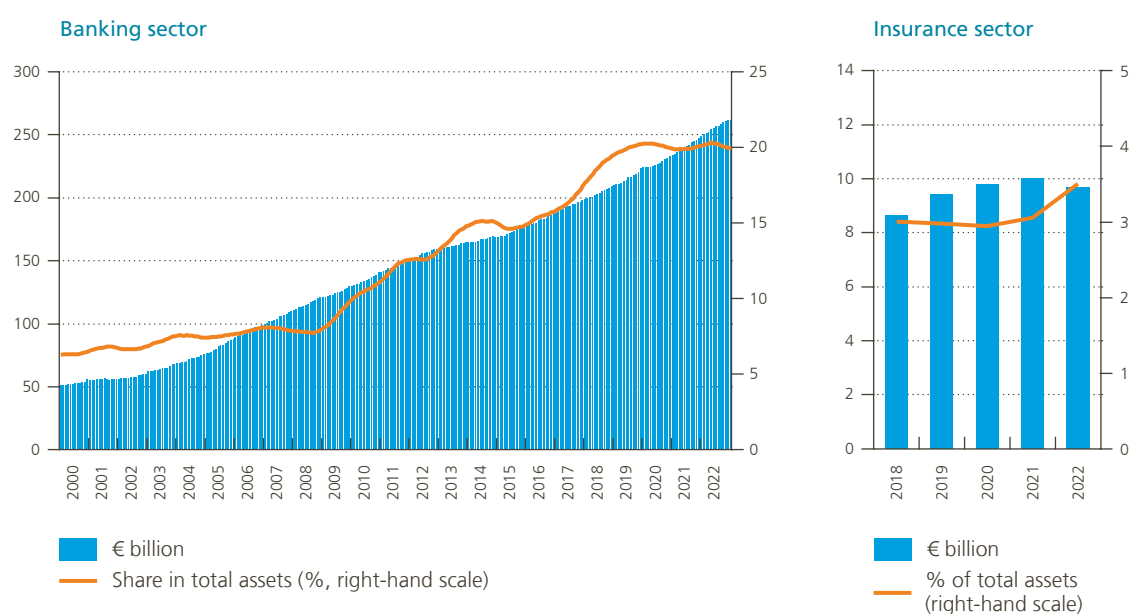
2 Warisse (2017), Analysis of the developments in residential property prices: is the Belgian market overvalued?, NBB Economic Review.

The turn in the credit cycle coincides with evidence of a significant cooling of the Belgian residential real estate market. According to data provided by the federation of Belgian notaries, the number of transactions on the Belgian residential property market fell by around 7 % in the first quarter of 2023, compared to the same period of 2022, confirming the slowdown observed in the second half of 2022. Growth in house prices also slackened in 2022, although at a moderate pace (left-hand upper graph of Chart 5). Following a robust 16 % surge between the end of 2019 and 2021, annual house price growth decelerated from 8 % in the first quarter to 4 % in the last quarter of 2022, equivalent to a fall of almost 6 % in real terms. Due to this moderation of house price growth, the gap between actual property prices and prices estimated using the Bank's model declined to 10 % (right-hand upper graph of Chart 5). However, this indicator should be interpreted with caution given that it is an estimate based on an econometric model, which is more uncertain in the context of high inflation. The slight narrowing of this gap in 2022 reflected the downturn in inflation-adjusted house prices and the impact of accelerating inflation on the real interest rate.

The slowdown in the number of housing sales can be linked to the significant rise in mortgage rates (Chart 3). Until early 2022, interest rates on mortgages with a term of more than 10 years were still hovering around a historic low of 1.4 %, but then began to rise sharply, reaching more than 3 % in March 2023. This rate increase appears to have dampened in particular demand for real estate investment (buy-to-let transactions), which had been boosted in recent years by low interest rates and the resulting search for yield. All other things being equal, higher interest rates also reduced the amount that households can borrow, potentially choking off some housing demand from first-time buyers or owner-occupiers searching for a new property. Yet this impact of higher mortgage rates was counterbalanced by the increase in maturities of new mortgages (see Chart 4 of the Macroprudential Report). Longer maturities help to preserve the borrowing capacity of households when mortgage rates rise. The Bank welcomes this development and recommends in this connection in the Macroprudential Report that lenders continue to ensure sufficient access to credit for house purchases, also by

Chart 6

Domestic mortgage loan exposure of Belgian banks and insurance companies¹



Source: NBB.

¹ For the insurance sector, assets excluding unit-linked contracts and mortgage loans valued at amortised cost.

using the still available room within the Bank's supervisory expectations, especially for first-time buyers. So far, they seem to be doing so, given the higher share of young debtors in new mortgage lending (see also Chart 4 of the Macroprudential Report).

The Macroprudential Report also discusses in more detail the macroprudential measures that the Bank has taken to mitigate the risks for financial stability stemming from this market: the sectoral systemic risk buffer of 9 % for risks in the stock of banks' domestic mortgage loans on the one hand and the supervisory expectations for risks in the new flow of mortgage loans granted by banks and insurance companies on the other hand. These measures are justified by the high exposure of the Belgian financial sector to the domestic mortgage loan market (Chart 6). For banks, domestic mortgage credit accounts for around 20 % of total assets. In the case of insurance, this share is more limited and stands at around 3 %.

Belgian banks also have a high exposure to Belgian commercial real estate (CRE). This mainly takes the form of loans granted to Belgian financial or non-financial corporations for commercial real estate purposes and/or with commercial real estate collateral (see the thematic article in last year's Financial Stability Report for more details). According to the latest data from the BECRIS corporate credit register, Belgian banks' commercial real estate loans total around € 67 billion, equivalent to 33 % of all corporate loans. Out of these € 67 billion, around 50 % have a CRE purpose in the sense that they directly finance the acquisition or the construction of a commercial real estate facility. The remaining 50 % serve to finance other (non-CRE) purposes but are considered as CRE exposures via the CRE collateral linked to the loan. Among loans with a CRE purpose, about two-thirds are also guaranteed by CRE collateral. As shown in the above-mentioned thematic article, a downturn in the residential real estate market could also have an impact on the corporate loan portfolio as around one-third of loans to Belgian corporations are linked to residential real estate, either through the business activity of the corporation or through collateral.

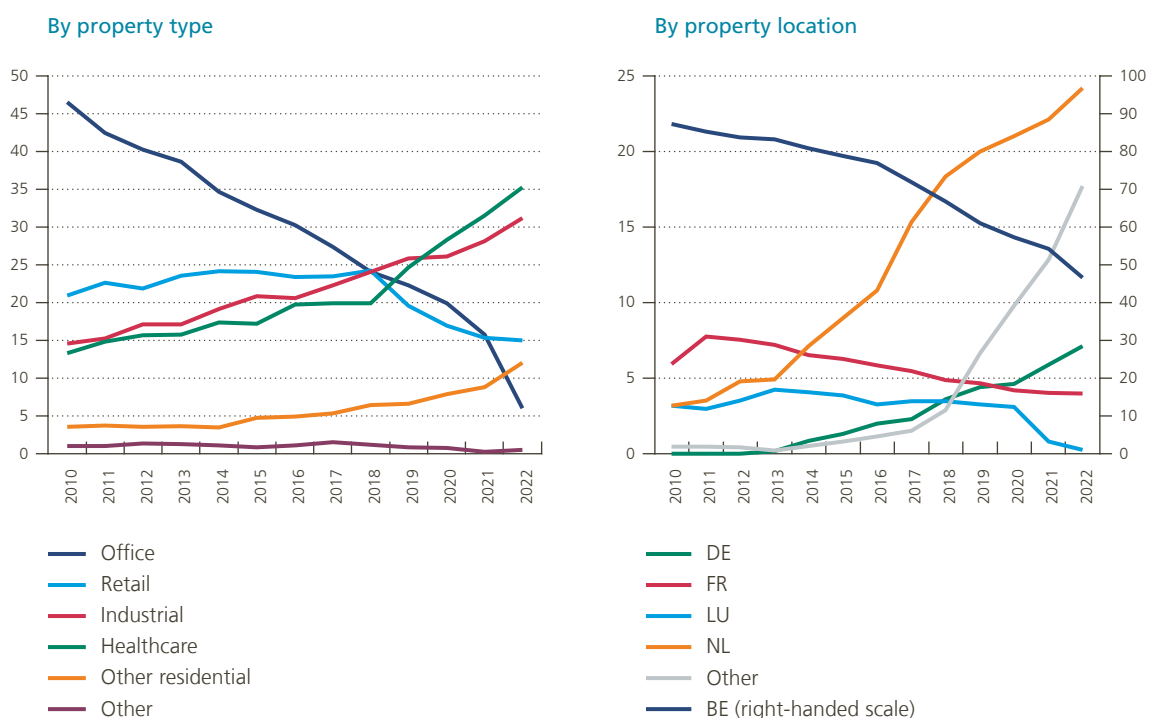
Belgian insurance companies' CRE exposures are substantial and sum up to a total of € 28.5 billion or 12 % of their investment portfolio excluding unit-linked contracts. This CRE exposure consists of direct and indirect CRE investments as well as CRE loans (see Chart I2 in the statistical annex). It has grown considerably in recent years as insurance companies have gradually redirected their investment towards alternative assets in response to the low-yield environment. Belgian insurance companies have invested a lot in physical real estate, but the growing share of CRE exposures in their portfolio is mainly attributable to indirect investment and loans. At the end of 2022, direct investments in buildings totalled € 8 billion, the bulk of which consists of properties located in Belgium. Indirect investments were worth around € 14 billion, comprising bonds and equity issued by CRE companies, including Real Estate Investment Trusts, and shares in real estate investment funds. Loans granted by insurers to CRE companies amounted to € 7 billion at the end of 2022, about half of which is collateralised by real estate.

Closed-ended Belgian Real Estate Investment Trusts (REITs) are another important investor in the Belgian CRE market. Following several years of double-digit growth, this sector's real estate portfolio experienced much more moderate growth in 2022, partly as a result of a – so far still modest – revaluation of assets due to the rise in interest rates. Volume effects continued to dominate, however, with offsetting movements related to the exit of Befimmo from the REIT universe (see below) and to new investments by other REITs. By the end of the year, the fair value of REITs' assets amounted to € 31 billion, compared to € 30 billion at the end of 2021. These investment trusts are subject to specific regulations, most notably including the restriction of the (consolidated) gearing ratio to 65 %, the obligation to pay out at least 80 % of the net result as dividends and the requirement to diversify investment risk – no more than 20 % of total assets may be invested in a single property. The Belgian REITs are very diverse in their size as well as in their thematic and geographical focus. Almost every REIT is currently pursuing an investment strategy that focuses on a limited number of segments of the CRE market; some of the institutions even focus exclusively on one type of CRE. 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 composition of the total sector portfolio as shown in Chart 7.

Chart 7

Breakdown of the Belgian REITs' real estate portfolios

(% of total)



Source: Belgian REITs' financial reports.

Non-domestic investors also play an important role on the Belgian CRE market. Their market share in the transaction volume has fluctuated between 50 % and 60 % in recent years, and even rose to more than 75 % in 2022 as a result of the purchase of the Belgian REIT Befimmo by a Canadian asset manager (a transaction worth more than € 2.5 billion, to be compared with a total transaction volume of € 7.4 billion last year, according to data provided by MSCI Real Capital Analytics). This transaction also explains the strong decline in the share of the office segment in 2022 in Chart 7, as Befimmo was a REIT specialised in offices. Yet, even if this large single deal is disregarded, the transaction volume in 2022 remained quite high. Anecdotal, but more timely, assessments of conditions on the Belgian CRE market nevertheless suggest that the transaction volume is set to be lower in 2023, as the CRE market adjusts to the significant tightening of financial conditions. As funding costs rise, yields on CRE investments have to increase through higher rents and/or lower prices. Both valuation- and transaction-based price indicators for Belgian CRE show that prices for the two most dynamic segments of the last years – industrial logistics and prime offices – peaked in the course of 2022, while those for non-prime offices and retail properties had already corrected well before that. All in all, CRE prices in Belgium have been less dynamic than in many other European countries in recent years, so the forthcoming price correction may also be softer. Vacancies and take-up rates so far show no sign of any significant downturn in user demand and the development of new CRE facilities is contained, with a lot of the capacity being developed already let to its future user. Belgian financial institutions with exposure to the CRE market will nevertheless need to remain vigilant for potential losses on these exposures and carefully (re)value CRE investments or collateral in light of the more difficult market circumstances. While there are so far few signs of deteriorating asset quality, banks should prepare for potential higher credit losses by constituting additional credit risk provisions where appropriate.

2. Banking sector

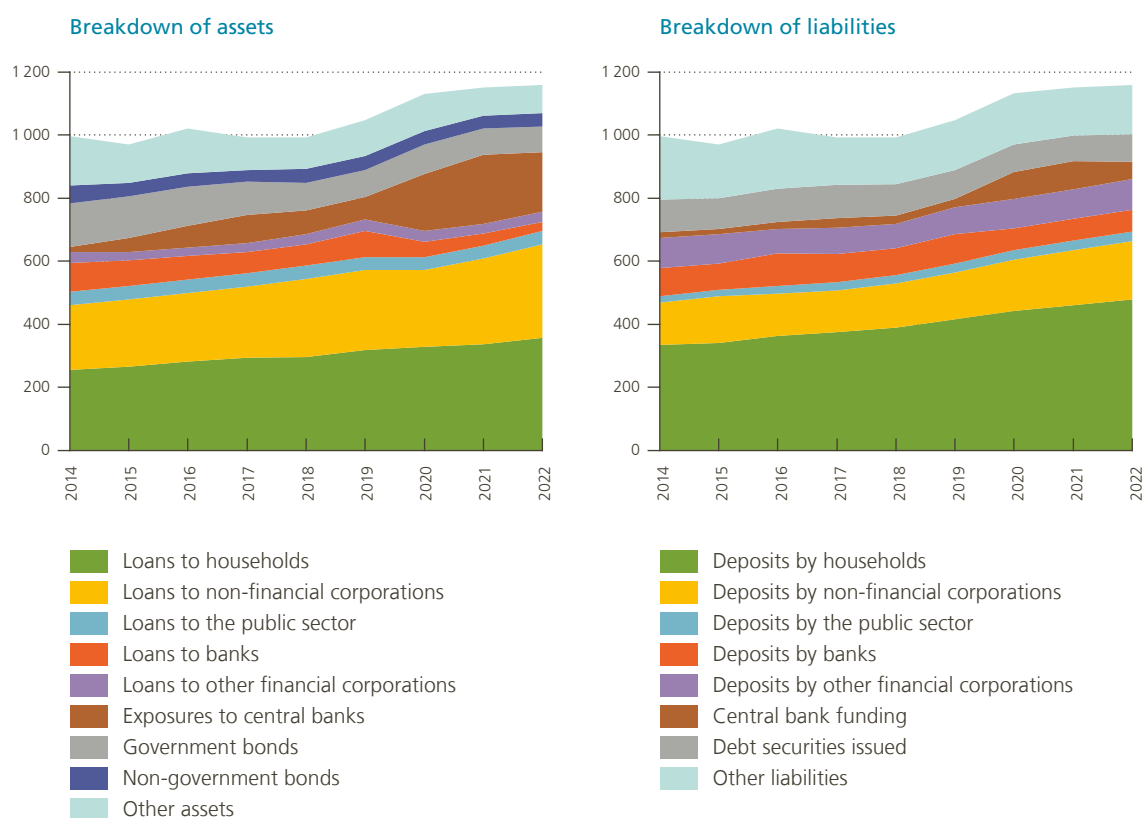
Financial intermediation in Belgium is dominated by banks and is largely constituted by the transformation of deposits into loans. As illustrated in Chart 8, deposit and loan transactions with households, non-financial corporations and the public sector therefore account for a major share of the Belgian banking sector's balance sheet. But such a transformation of deposits into loans also generates credit, liquidity and interest rate risks for the banks and these need to be managed carefully in order to maintain financial stability, as highlighted by the recent developments in the US banking sector (see Box 1).

This section will show that Belgian banks are well placed to deal with the more challenging macro-financial environment described in the previous section. The risks of rising interest rates were managed and hedged during the low interest rate environment (sub-section 2.1) and liquidity risks are mitigated by the diversified deposit base and ample liquidity buffers (sub-section 2.3). Banks also have large capital buffers that can be used to absorb unexpected losses (sub-section 2.3). Nevertheless, profitability could come under pressure in the coming quarters due to rising funding costs and higher provisions for credit risks (sub-section 2.2). While profitability in 2022 was boosted by the very limited repricing of deposits and low additional provisions for credit risks, the operating environment for banks has become more challenging owing to higher funding costs and the downturn of the credit and real estate cycles which increases the probability of unexpected losses on assets accumulated in the low interest rate period.

Chart 8

Assets and liabilities by counterparty

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



Source: NBB.

2.1 Profitability

Net interest income accounts for two-thirds of Belgian banks' operating income. This income from traditional financial intermediation came under pressure during the low (even negative) interest rate period because the commercial margin earned on the large stock of sight and savings deposits – remunerating the banks for the liquidity services provided to clients and for the costs of collecting these deposits (ATMs or branch networks for example) – were gradually eroded as deposit rates reached a floor of 0 % (and 0.11 % in the case of the Belgian regulated savings deposits). Rates should have become negative to maintain the margin.

The exit from the low interest rate environment was thus used in the first place by banks to restore this commercial margin on deposits, explaining to a large extent the absence of significant repricing of deposits in 2022 (upper panel of Chart 9). At the same time, the average yield earned on banks' loan and bond portfolios started to rise, but from a very low level. In contrast to sight and savings deposits (so-called non-maturity deposits), where changes in the deposit rate apply immediately to the full stock, the loan and bond portfolios are only gradually repriced as maturing assets with a low yield are replaced with new, higher-yielding ones.

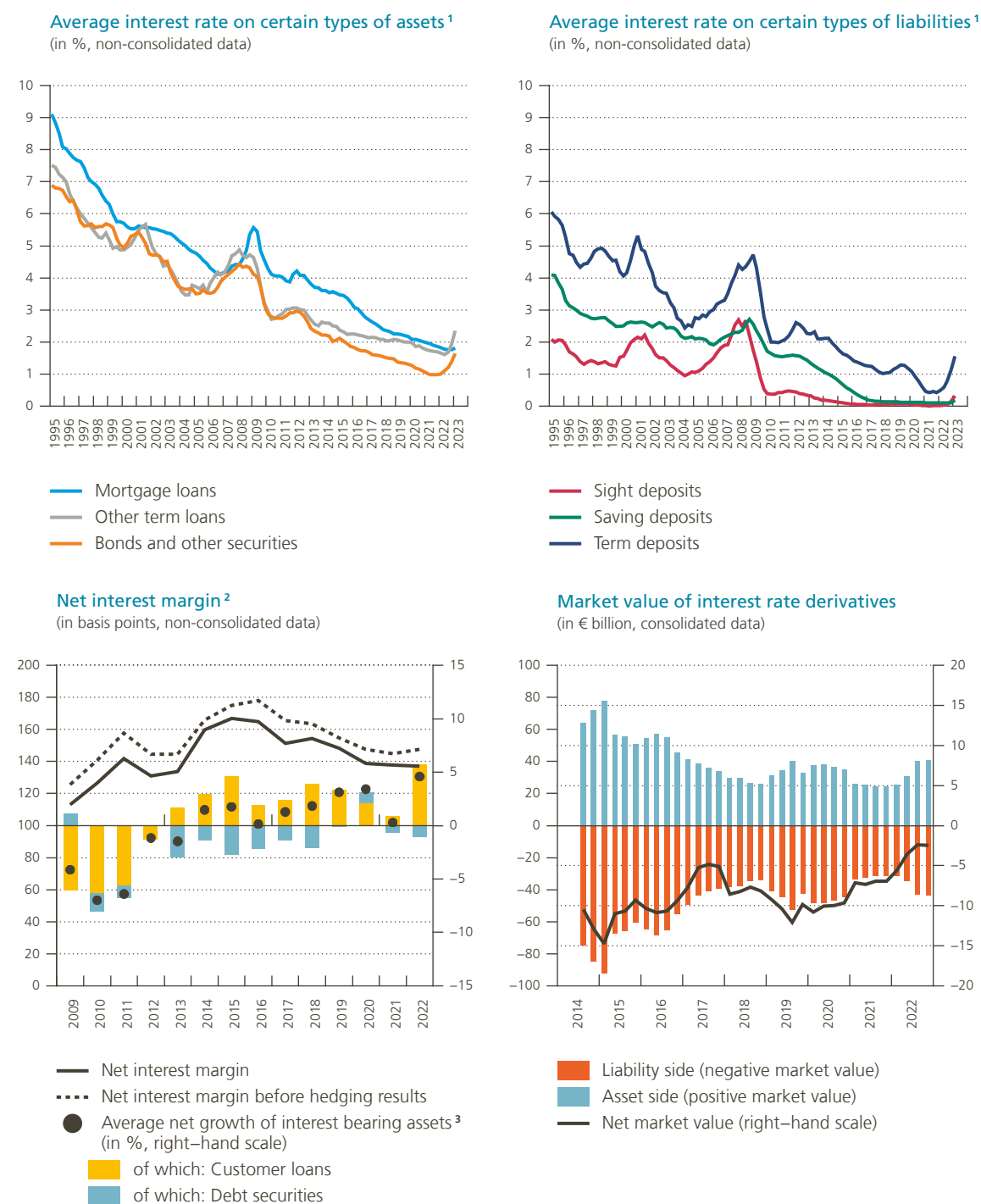
Because banks boosted loan volumes during the low interest rate environment to compensate for the downward pressure on their net interest margins (left-hand graph in the lower panel of Chart 9), they still have a large stock of (mortgage) loans with a long maturity and a low fixed interest rate. Now that market interest rates are higher, banks have room to increase the remuneration of the non-maturity deposits, but they need to take into account the development of their interest income, part of which is generated by interest rate derivatives that were contracted to hedge against the risks of higher interest rates but also by assets for which the long-term interest rate was set in a low interest rate environment, e.g. mortgages. 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, on the whole, they result in a net payer swap position for the banking system, whereby the Belgian banks pay a fixed long-term rate of interest to the derivatives counterparty and receive a floating short-term rate in return. This also explains why the interest margin after hedging is lower than the margin without hedging (it can be interpreted as the net interest margin that banks sacrificed to hedge against the risk of higher interest rates). Of course, when interest rates rise, the floating-rate leg of these interest rate derivatives will generate higher interest income, while the fixed-rate leg remains at the same level until the end of the contract. The right-hand graph in the lower panel of Chart 9 confirms in this connection that banks' hedging against a rise in interest rates has paid off in the form of a significant net increase of the market value of the interest rate derivatives. While the net interest margin including hedging in the left-hand graph of the lower panel of Chart 9 has not yet risen in 2022 (probably also due to additional payer swap transactions that year), it will probably only be a question of time before this interest margin starts to rise as well, narrowing the gap with the margin before hedging results.

The use of interest rate derivatives to hedge interest rate risk is also illustrated in Chart 10. This chart shows how the Belgian banking sector manages the interest rate risk in the banking book, showing the notional amounts of assets, liabilities and derivatives according to their remaining time to maturity when the interest rate for that position will be adjusted to market conditions. In the case of positions with an interest rate that is fixed for the whole maturity, the notional amount is placed in the repricing bucket when that position comes to maturity. The information in the chart shows first of all that banks try to keep the net gap between the asset and liability positions in the different repricing buckets at a low level, thus reducing the (net) exposure to interest rate changes in that repricing bucket. 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. The chart also shows how banks' asset and liability (ALM) management has modelled the speed with which non-maturity (sight and savings) deposits will reprice in the event of a permanent shock to the level of interest rates. They do so by means of a modelling approach that allocates these deposits to different maturity buckets according to their average estimated time to repricing. In the case of savings deposits, for example, Belgian banks' asset and liability (ALM) management is consistent with a pass-through rate (deposit beta) of 40 % of a permanent interest rate shock during the first year following that shock, followed by an additional pass-through rate of 29 % in the next two years. This interest rate risk management of non-maturity deposits clearly involves considerable model risk,

Chart 9

Net interest margin

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



Source: 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.

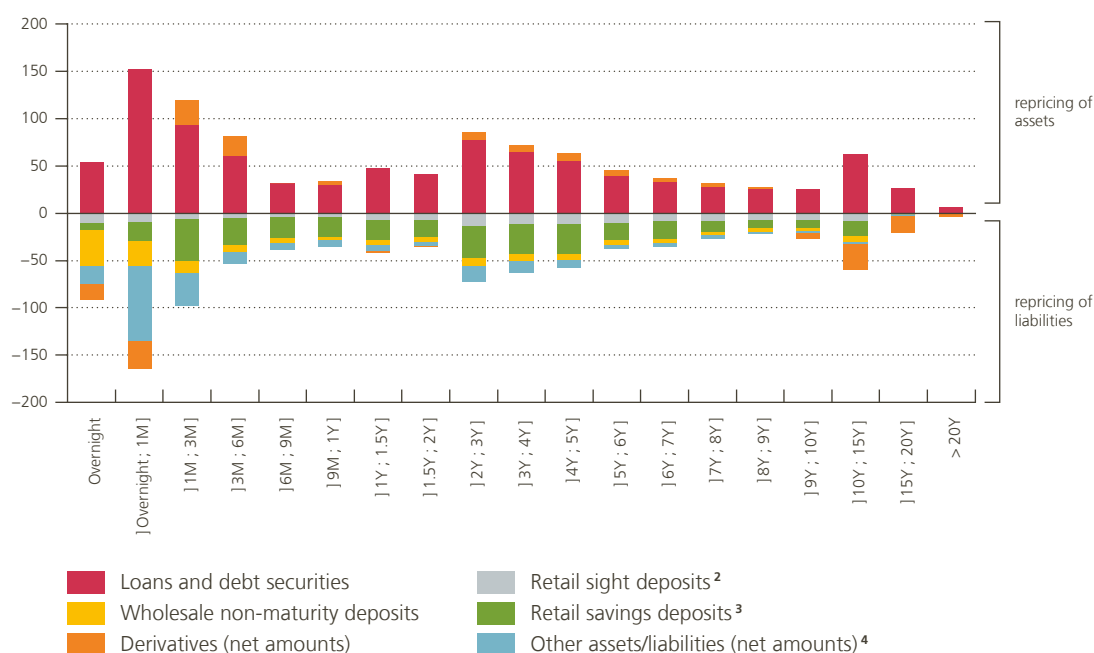
2 The net interest margin is defined as the spread between the average interest rate earned on interest-bearing assets and the average interest rate paid on interest-bearing liabilities. The concept which is shown in the chart excludes all interbank and central bank claims and debt in both the interest flows and in the volumes of assets and liabilities.

3 Excluding all interbank and central bank claims.

Chart 10

Maturity schedule for notional repricing cash flows of assets and liabilities in the banking book¹

(consolidated data for the six largest banks, after considering modelling assumptions, December 2022, in € billion)



Source: NBB.

¹ The notional repricing cash flows depicted in this chart are the repayments of principals, repricing of principals or interest payments which arise from material interest-rate-sensitive assets and liabilities, under a run-off balance sheet assumption and according to the prevailing interest rate environment in December 2022. Modelling assumptions include, for example, assumptions on the characteristics of items without 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, debt securities issued and term deposits.

especially if these models are calibrated on customer behaviour in a period of declining and low interest rates. If actual deposit repricing behaviour were to be different than currently modelled, for example because clients react faster than expected to interest rate rises in the market, banks could face a faster-than-expected rise in their funding costs. This will have an adverse impact on their net interest income in the short term, as their loan and bond portfolios on the assets side would only reprice more gradually to the higher interest rates.

As an inverse shape of the yield curve (Chart 1) reduces the profitability of financial intermediation, banks' ability to substantially grow their net interest margin in the coming quarters may be limited and it may even come under pressure in the event of a faster-than-expected repricing of deposits. So, banks should be careful in extrapolating the strong increase in net interest income in 2022 and factor in potentially less favourable market circumstances for this major income source in their profitability projections going forward. To safeguard the stability of retail deposits as a source of financing – a key factor of strength given the increased scrutiny of banks' deposits by investors –, deposit rates must remain more or less in line with the yields that alternative financial assets provide to savers. Otherwise, banks run the risk of seeing a portion of this stable source of financing – for loans to Belgian households and businesses – channelled into other investments. In addition to higher deposit rates, given the turn in the credit cycle, new credit volumes are also likely to be lower than in previous years, which, as mentioned already, is seemingly contributing to high competition in the lending market and downward pressures on banks' commercial margins for mortgages and corporate loans.

Table 1

Aggregate income statement and key profitability ratios

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

	2018	2019	2020 ³	2021	2022
Net interest income	14.4	14.6	14.2	14.4	15.3
Non-interest income	8.3	8.5	8.2	7.6	7.9
Net fee and commission income ¹	5.6	5.6	5.6	6.4	6.6
Net realised and unrealised gains and losses on financial instruments	1.2	0.5	0.0	0.6	0.8
Other non-interest income	1.5	2.4	2.6	0.6	0.6
Operating income	22.7	23.1	22.4	22.0	23.2
Operating expenses	-13.9	-13.7	-13.8	-13.3	-14.2
Gross operating profit	8.8	9.4	8.6	8.7	9.1
Impairments and provisions	-0.8	-1.3	-3.1	-0.2	-1.1
Other components of the income statement ²	-2.3	-2.0	-1.2	-0.7	-0.4
Net profit or loss	5.6	6.1	4.3	7.8	7.6
Return on equity (in %)	8.0	8.7	5.9	10.2	9.9
Return on assets (in %)	0.5	0.6	0.4	0.7	0.7
Cost/income ratio (in %)	61.3	59.5	61.7	60.4	61.0

Source: NBB.

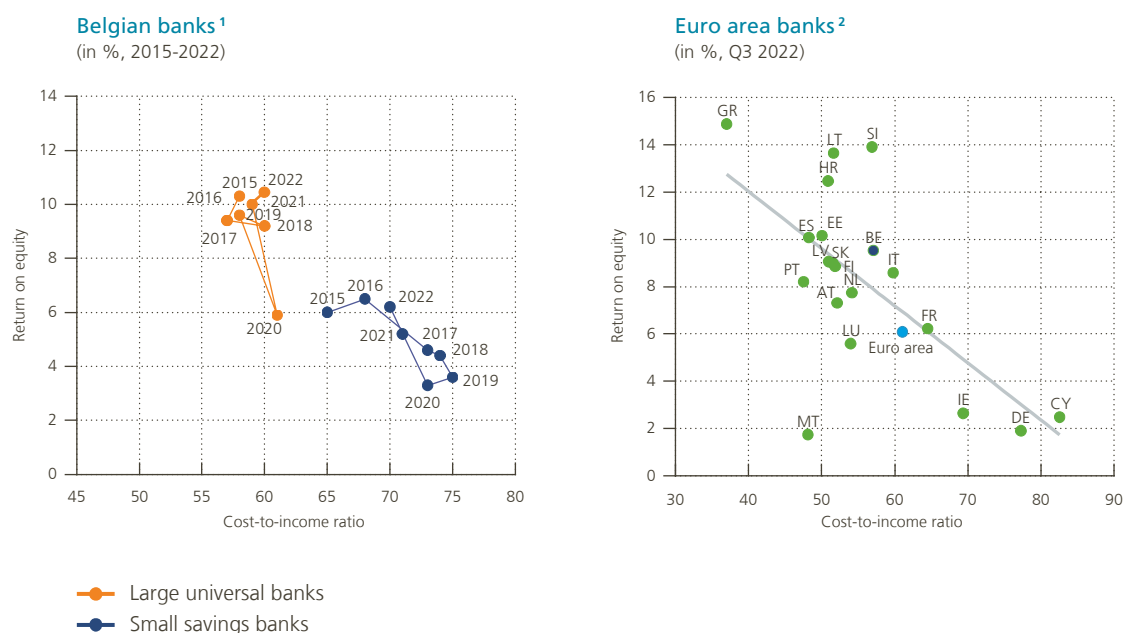
¹ Including commissions paid to independent banking agents.² This item includes, among other things, taxes, exceptional profits, negative goodwill recognised on the income statement, and the share of profits or losses on investments in subsidiaries and joint ventures.³ A reporting adjustment has resulted in a transfer of certain costs between different income statement components in the figures since 2020.

Profitability in the banking sector reached high levels in 2022, with a net bottom-line result of € 7.6 billion, a return on equity of 10 % and a return on assets of 0.7 % (Chart 11 and Table 1). The Belgian banking sector thus again reported a significantly better performance than other banks in the euro area, for which the return on equity over the first nine months of 2022 averaged only 6 %. As mentioned before, the higher profitability of Belgian banks was in no small part due to a rise in net interest income, which benefited from the rising interest rates. It signals the return to more sustainable profitability for the banks' traditional financial intermediation business and will ease the pressure on the business model that was seen during the low interest rate period. This is especially true for small and medium-sized banks that focus on deposit and credit operations with retail customers. With improved margins, banks will also be less compelled to offset margin pressure through higher lending volumes or riskier investments. So in time, higher interest rates can also promote financial stability. Operating expenses grew significantly in the past year compared to previous periods, against a backdrop of high inflation. As Belgium has automatic wage indexation, banks saw their wage bills rise last year. The increase in the cost-to-income ratio (61 % in 2022) was nevertheless contained. Cost efficiency remains a permanent challenge though for the Belgian banking sector, especially for small and medium-sized banks that are less able to benefit from economies of scale and are often less advanced when it comes to the development of cost-saving digital applications. In 2022, large banks reported an average cost-to-income ratio of 60 %, while smaller banks reported a much higher ratio of 70 %. This lower cost efficiency also explains why these banks' return on equity has been structurally lower than that for universal banks.

Chart 11

Profitability and cost efficiency of Belgian and euro area banks

(consolidated data, in %)



Sources: ECB, NBB.

1 Excluding banks specialising in private banking.

2 Data for the first three quarters of 2022, annualised. 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 chart.

2.2 Asset quality

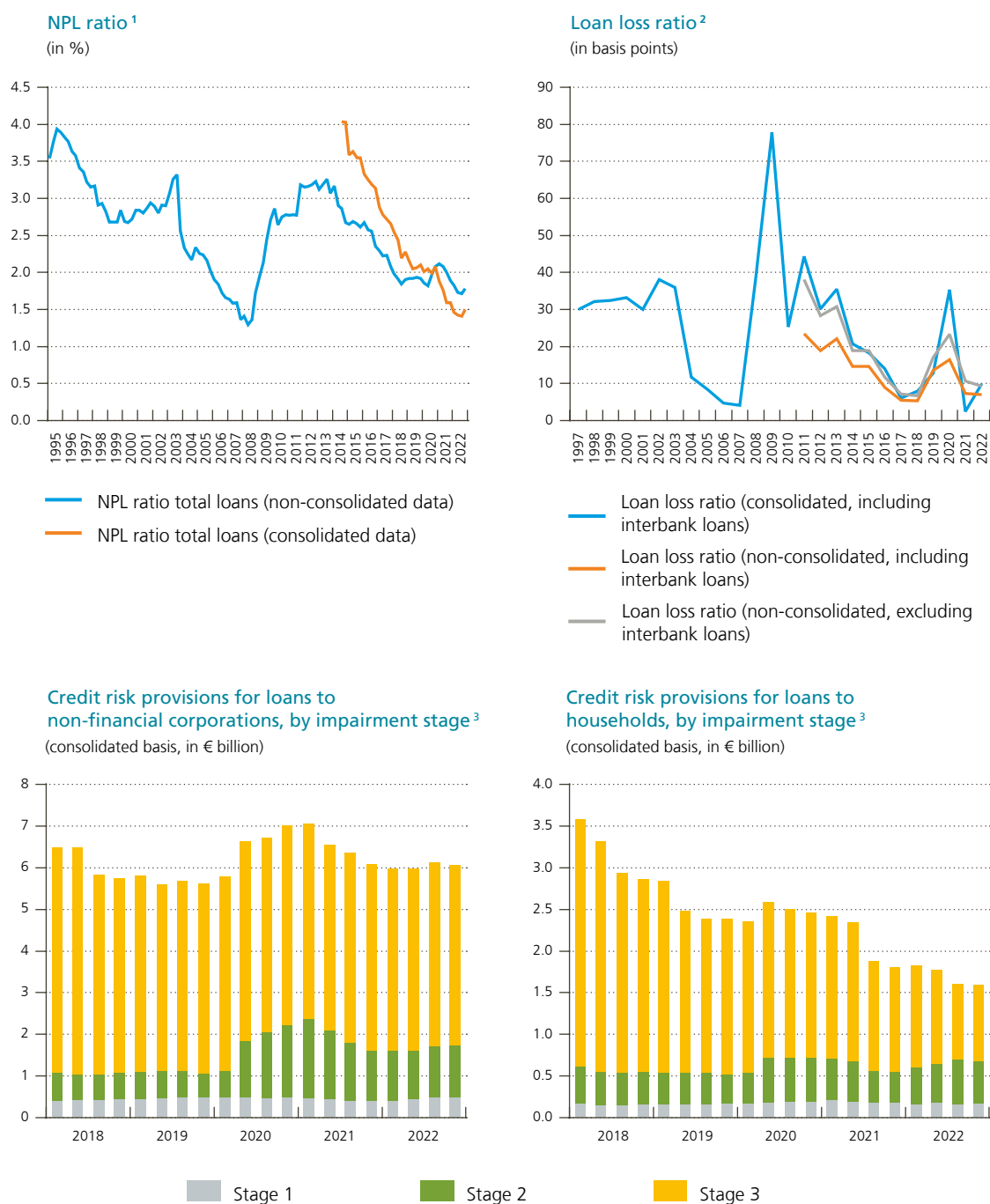
The profitability of Belgian banks in 2022 was positively influenced by low credit losses, as the non-performing loan (NPL) ratio remained close to its lowest level seen just before the global financial crisis (Chart 12). Measured on a consolidated basis, which also covers the quality of assets held by Belgian banks' foreign subsidiaries, the NPL ratio fell from 1.6 % at the end of 2021 to 1.5 % by the end of 2022. This improvement was driven by households and non-financial corporations, in Belgium as well as in foreign banking markets. The NPL ratio nevertheless appears to have bottomed out in the course of 2022.

The share of loans that benefited from debt restructuring also declined in 2022 (Chart B12 in Annex). For non-financial corporations, the forbearance ratio was down from 3.7 % at the end of 2021 to 2.8 % at the end of 2022. This ratio had reached a peak of almost 4 % in September 2021, as Belgian banks – to a larger extent than banks in other European countries – offered solutions to debtors that faced temporary or more structural repayment problems during the pandemic over and above the moratoria that were covered by the European Banking Authority's temporary prudential carve-out. This carve-out allowed banks to not recognise these loans with moratoria as loans with a forbearance status. Moratoria were granted to 13 % of the corporate loan portfolio in September 2021. The forbearance ratio for households also declined in 2022 (from 1.4 % to 1.2 %). In the context of the energy crisis, Belgian banks made a unilateral commitment in September 2022 to offer moratoria to eligible mortgage-holders and case-by-case solutions to households and non-financial corporations facing financial difficulties in this challenging period. Unlike during the pandemic, the possibility of such payment deferral was not widely used. The cumulative take-up rate until the end of March 2023, when the scheme expired, amounted to less than 0.5 % of all outstanding mortgages. This relatively limited use of

Chart 12

Non-performing loan ratio, loan loss ratio and credit risk provisions

(consolidated data, in %)



Source: NBB.

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

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

3 These charts represent accumulated impairments by impairment stage. When a loan is originated, it is considered as Stage 1. If banks find a significant increase in credit risk, the loan should be classified in Stage 2 and provisions will be based on lifetime expected credit loss (ECL) approach. If the credit risk increases to the point where the loan is considered as credit-impaired, the loan will be classified under Stage 3.

the scheme indicates that other support measures targeting vulnerable households have been effective. During the pandemic, this amount had peaked at € 12 billion, corresponding to 6 % of the total outstanding loans granted to Belgian households.

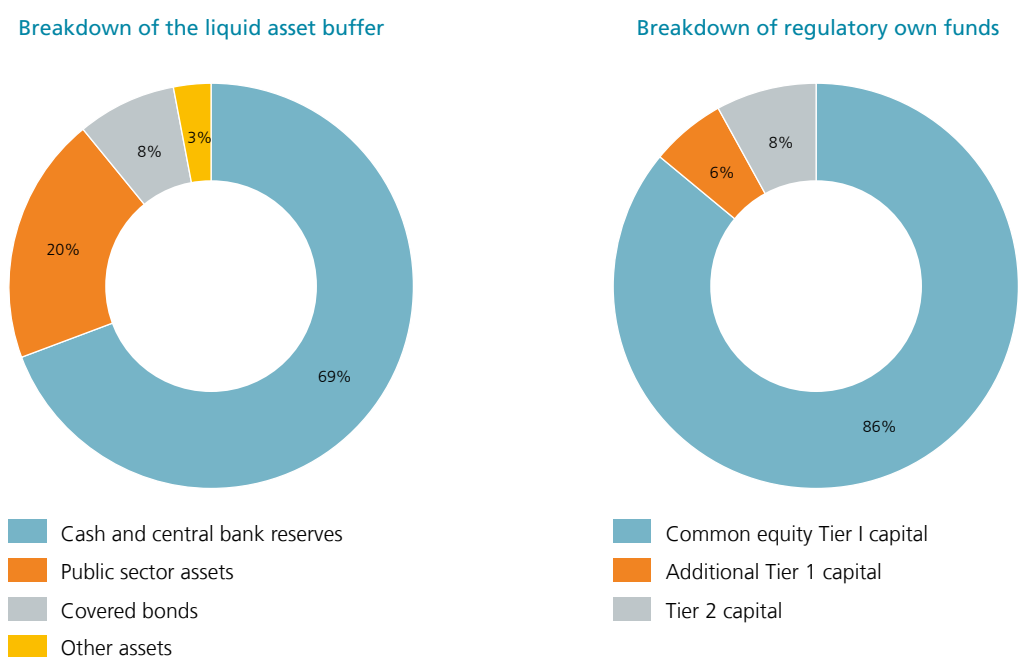
Asset quality thus remained quite strong in 2022 and this followed a period of few defaults during and after the pandemic, not least due to the extensive monetary, fiscal and prudential measures put in place and the moratoria and other debt restructuring solutions offered by banks to their clients. As there were fewer defaults during the pandemic than initially feared, banks recorded few additional provisions during the recent geopolitical and energy crises and even reversed some of the provisions constituted previously, which had a positive effect on their operating income. The loan loss ratio, that is the ratio between new loan loss provisions and the total volume of loans, stood at 35 basis points in 2020 and dropped to very low levels in 2021 (2 basis points) and 2022 (10 basis points).

Yet, as financial conditions have tightened significantly amidst vulnerabilities accumulated during the long period of low interest rates, the probability of a more significant materialisation of losses on loans to the domestic non-financial private sector remains high. Backward-looking asset quality indicators do not (yet) point to any increase in loan repayment problems but banks should look ahead and base their credit risk provisions on sufficiently conservative assessments of potentially stressful economic scenarios and use their current strong capital position to proactively raise loan loss provisions, wherever necessary. The capital resources that remain available pursuant to the decision not to re-activate the counter-cyclical capital buffer (CCyB) should be used to do so, as timely and adequate provisioning of credit risk is an important element for financial stability. As shown in Chart 12, banks may therefore need to bolster their credit risk provisions in the coming quarters because they have fallen back to levels seen before the pandemic in the case of non-financial corporations and to the lowest levels since at least 2018 in the case of households.

Chart 13

Composition of the regulatory capital and liquid asset buffers

(consolidated data)



Source: NBB.

2.3 Liquidity and solvency

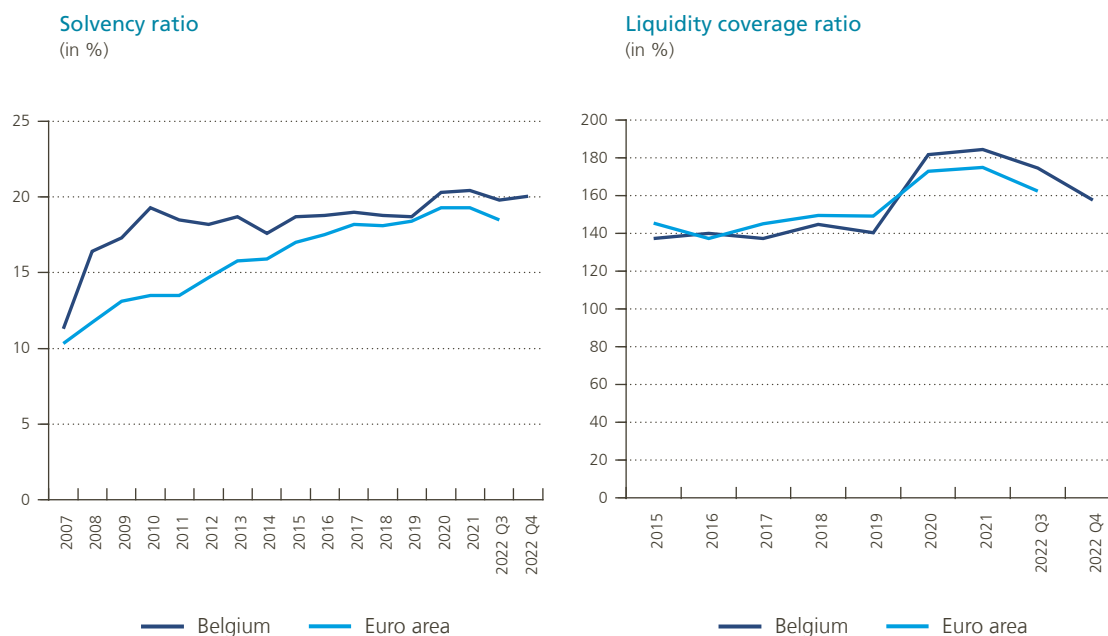
Belgian banks have large capital and liquidity buffers to deal with unexpected shocks and the composition of these buffers is also of a high quality, as shown in Chart 13. Central bank reserves, or cash, accounted for more than 60 % of the liquid asset buffer. This is the eminent liquid asset and moreover one that is not sensitive to changes in interest rates affecting its market value. Public sector assets and covered bonds largely make up the other part of the liquid asset buffer. The public sector assets are mainly composed of government bonds. Over the years, Belgian banks have reduced the size of their bond holdings to around 10 % of total assets (compared with some 20 % in 2014). Most of these 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, market analysts have 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 also considering the possibility of pledging these securities as collateral in repo transactions or for obtaining central bank financing. The risks are moreover mitigated by the fact that banks in Europe need to deduct such unrealised capital gains from regulatory capital (no prudential filter). This regulatory capital held by Belgian banks is mainly composed of the highest-quality common equity, as shown in the right-hand graph of Chart 13. The share of additional Tier 1 (AT1) instruments is limited to 6 % of the total regulatory capital.

As illustrated in Chart 14, Belgian banks' capital and liquidity ratios are close to those observed in the rest of the euro area and well above minimum requirements. This enables them to cope with any possible unexpected losses without jeopardising their main function in the Belgian economy or financial stability. In the current

Chart 14

Solvency and liquidity ratios¹

(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.

macro-financial 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 distributions, which should always be based on a conservative forward assessment of their capital and provisioning needs in light of potential macroeconomic developments. This is all the more necessary at a time when the cost of equity and other capital instruments, such as AT1 bonds, are expected to remain high for some time in response to the most recent developments.

Capital buffers were also instrumental in distinguishing the Belgian and euro area banks from the events in the US and Swiss banking sectors in March 2023. To preserve this robust financial position, a sound regulatory framework is necessary. Such a regulatory framework ensures that capital buffers remain commensurate with potential losses in times of crisis. The Bank, like the ECB and the European Banking Authority, thus continues to call for compliant and timely implementation of the Basel III standards. The implementation proposals of the European Commission derogate significantly from these international standards and would make the rules applicable to European banks less stringent.

3. Insurance sector

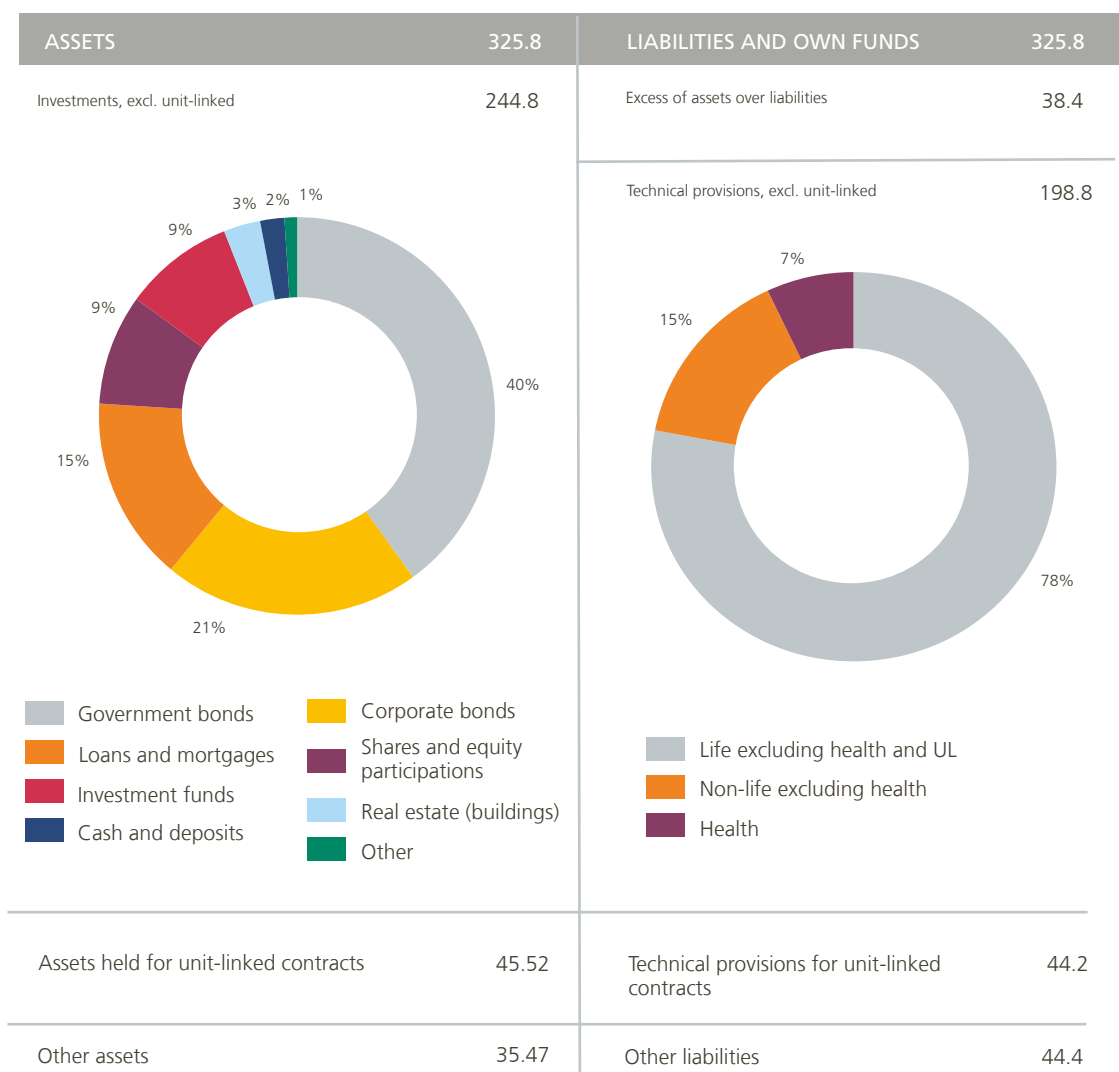
The analysis in this section is for the most part based on Belgian insurance companies' Solvency II reporting. Under this Solvency II framework, applicable since 2016, assets and liabilities are valued at market or market-consistent prices. Yet, for insurance companies' technical reserves – which form the main part of their 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 reviewed every year and currently set at 3.45 %. Due to this link with market interest rates, the estimated value of the technical reserves is thus sensitive to changes in the overall level of interest rates and will decline when market interest rates rise. As the duration of the Belgian insurance companies' liabilities is generally longer than that of their assets, a rise in interest rates thus improves the Belgian insurance sector's solvency position, 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 Solvency II long-term guarantee package 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 these assets' spreads) 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 offset 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 its impact on own funds.

Chart 15 shows the Solvency II balance sheet in line with this so-called economic-value principle as at the end of 2022. Total assets were then valued at € 325.8 billion, down from more than € 375 billion at the end of 2021 mainly as a result of the rise in interest rates. 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, assets and liabilities related to unit-linked or class 23 life insurance contracts should indeed be considered apart. These are life insurance policies with variable capital, comparable to mutual investment funds, where the policy-holders bear all the investment risks. In the other life insurance contracts – which still account for the majority of life insurance premiums in Belgium and cover both individual and group

Chart 15

Main components of the balance sheet

(non-consolidated data for the end of 2022, in € billion)



Source: NBB.

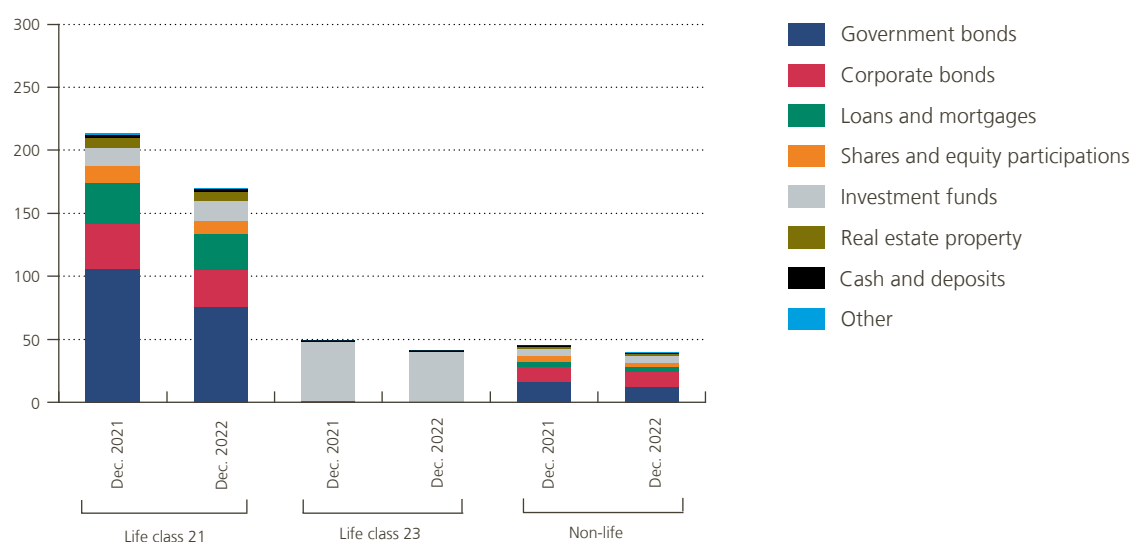
policies (Chart 16 in Annex) –, the insurer provides some guarantee on the final return on the investment and thus bears at least part of the risks relating to financial market developments. At the end of 2022, the technical provisions of these class 23 contracts amounted to € 44.2 billion. The technical provisions excluding these unit-linked contracts came to € 198.8 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 totaled € 38.4 billion at the end of 2022 and constitutes a key element of the regulatory own funds. Total eligible own funds under Solvency II are obtained by adding to this key component the other eligible forms of own funds that comply with the rules governing the definition of Tier 2 and Tier 3 capital.

As shown in Chart 16, assets held by insurance companies on behalf of unit-linked class 23 policy-holders mainly consist of investment funds while assets held for the other classes of life insurance are dominated by government bonds (€ 76 billion), corporate bonds (€ 29 billion) and loans and mortgages (€ 28 billion) which together make up more than three-quarters of the covering assets. Investment funds and equity instruments each account for less than 10 % of the total. Assets held for non-life insurance business are 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 in the future, as in the case of life insurance.

Chart 16

Composition of covering assets per insurance activity

(€ billion)



Source: NBB.

Given the predominant role of fixed-income assets in life insurance contracts with minimum rates of return for policy-holders, Belgian life insurers offering these contracts were challenged in the low interest rate environment to generate a sufficient return on their investment to honour the guaranteed yields. As shown in Chart I8 in Annex, one element that helped was the gradual decline of 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 3.1 %. 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.

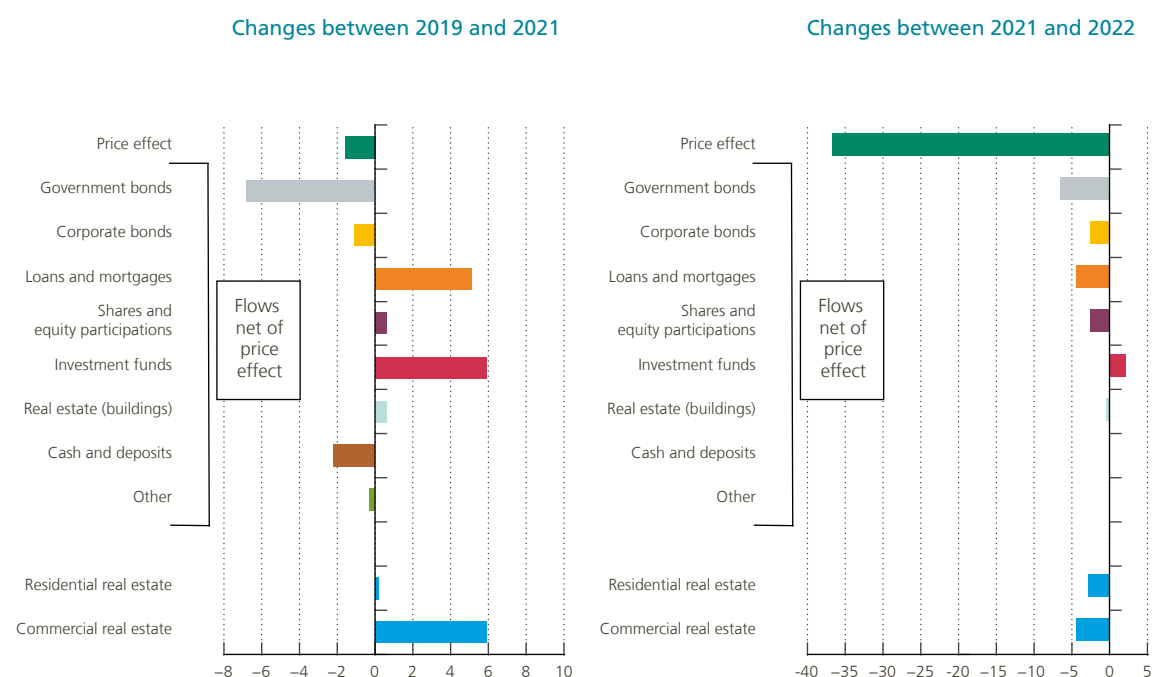
If valuation (price) effects are filtered out, the left-hand graph of Chart 17 confirms that Belgian insurers divested a large amount of government bonds in the period between 2019 and 2021 and re-allocated their investment mainly towards loans, mortgages and investment funds. This re-allocation also led to an increase in the Belgian insurance sector's exposure to real estate, in particular commercial real estate. Direct investment in real estate buildings rose only marginally. The increase mainly reflected additional investment in bonds and

equity instruments issued by CRE-related companies. Chart 17 also documents developments in 2022, compared to the end of 2021. The right-hand graph first shows a very big price effect, as the rise in interest rates led to a generalised decline in the (estimated) economic or market value of the investment portfolio. Volume effects in 2022 point to a net reduction in the investment portfolio during that year (more life insurance contracts matured and were not renewed in comparison to previous years), which also included some reduction in the volume of loans and mortgages and real estate exposures.

Chart 17

Breakdown of price and volume effects of the investment portfolio, excl. unit-linked assets¹

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



Source: NBB.

¹ The volume effects shown for residential and commercial real estate overlap with the volumes changes shown for the other categories. They show the real-estate related volume effects stemming from insurance companies' real estate exposures in the form of direct investment in buildings, bond or equity instruments issued by real estate companies or real-estate related loans, such as mortgage loans or loans to CRE-related companies.

When the price and volume effects are combined, the composition of the investment portfolio nevertheless continued to be marked by the previous years' search for yield, as shown in Chart 18, with still a growing shift towards higher-yielding and less liquid assets in 2022. With higher risk-free interest rates, insurers are likely to have more room and more opportunities to avoid any further redirection of their investment towards these riskier and less liquid assets in the next few quarters. Higher yields on low-risk and liquid assets, such as cash and government bonds, will reduce the incentive to search for yield.

As liabilities are generally based on long-term contracts, with an average duration that is generally higher than on the assets side, rising financing costs are also of less concern for insurers than for banks. A rise in interest rates also has a positive effect on the interest rate risk position and solvency of insurers, as mentioned before. Yet, higher interest can also lead to additional liquidity requirements. Insurers use interest rate derivatives to

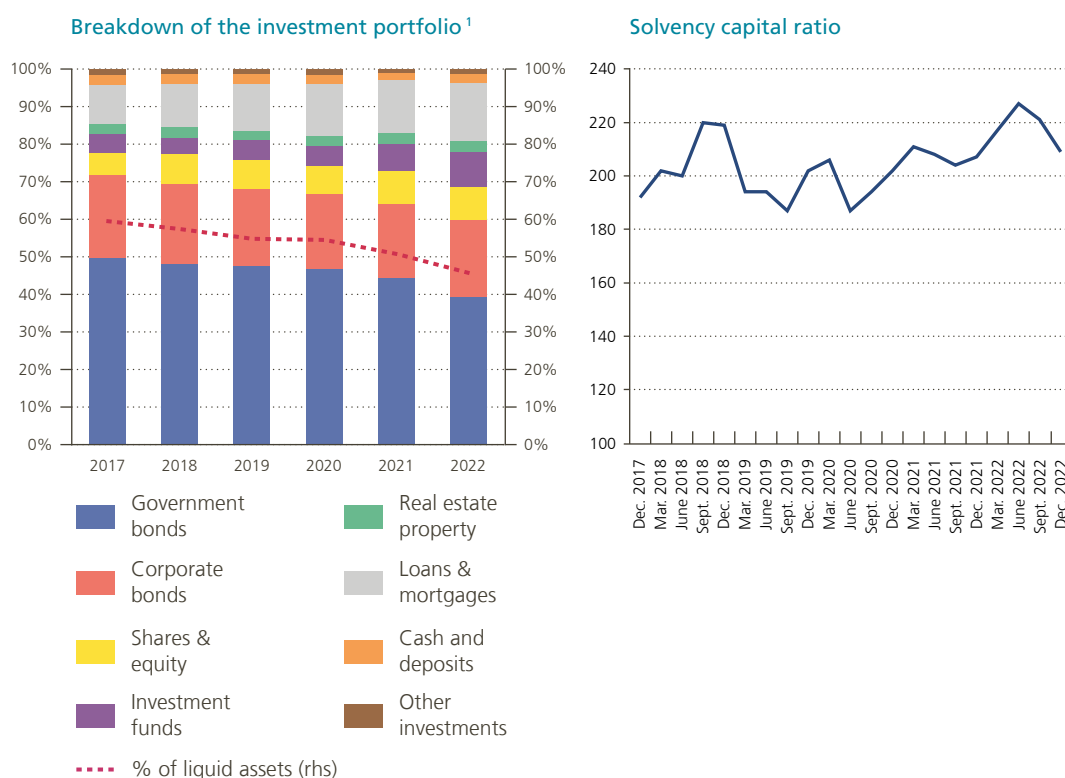
hedge the duration gap (the difference in average duration between assets and liabilities), and these positions may generate additional liquidity needs in the context of the collateralisation of these derivatives. Higher interest rates change the market value of interest rate derivatives and correspondingly may lead 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 (it will have to post less collateral with interest rate derivative counterparties than in the past) as a result of the most recent interest rate changes, insurance companies will generally be on the opposite side due to their very long liabilities and corresponding net receiver swap position to help close the gap with the duration of the 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 quite small.

When interest rates rise, there is also a higher risk of policy-holders deciding to surrender their life insurance contracts prematurely. In this case, the insurer must be able to liquidate the underlying investment in order to reimburse the policy-holder. However, given the generally long term and tax treatment of most contracts falling under second and third pension pillars, this risk seems relatively manageable. The share of liquid assets in the investment portfolio is still quite high, as shown in the left-hand graph of Chart 18.

Chart 18

Composition of the investment portfolio, including the share of liquid assets

(in %)



Source: NBB.

1 Excluding unit-linked assets.

With a solvency capital requirement of 209 % at the end of 2022 (right-hand graph of Chart 18), the Belgian insurance sector clearly has large capital and liquidity buffers that can be used to absorb losses in the event of adverse shocks. The sector also continues to generate adequate profitability, with a net result of € 3.7 billion and a return on equity of 16 % (Chart I4 in the annex).

The insurance sector had to cope with the impact of the floods that hit Belgium in July 2021. Based on the legislative framework, as well as exceptional agreements concluded in the wake of the floods, it was agreed that the claims burden would be borne by various public and private stakeholders, including insurance companies and reinsurers. In this connection, the development of a clear statutory framework on the cost allocation of claims related to future natural disasters is of paramount importance going forward. Although not all losses were insured, a significant proportion of the major damage caused by the floods was compensated by the insurance sector, mainly under fire insurance policies. In order to safeguard the insurability of natural disasters, in the past, specific mechanisms have been developed in the framework of a public-private partnership, such as capping the insurance limit per insurer and per natural disaster, combined with a contribution from the regional disaster funds when this limit is exceeded. However, after the floods in July 2021, the statutory insurance limit was doubled by mutual consent of the Regions and the insurance sector. This meant that insurance and reinsurance companies bore a greater share of the claims burden. Nonetheless, more than a year after the floods, there is still no stable legal framework unambiguously determining how the costs of future natural disasters should be allocated. This situation and the resulting legal uncertainty are already having a significant impact on Belgian insurers, not least due to uncertainty as to the possibility and level of reinsurance and the costs associated with reinsuring disaster risk. On the regulatory side, this uncertainty could lead to a thorough review of the models used to determine the capital requirements for insurance companies, which in turn could adversely affect their solvency. These difficulties and uncertainties also threaten to increase policy-holder premiums in the long run. To provide greater certainty for all parties involved, the competent federal and regional authorities should work towards establishing a clear statutory framework as soon as possible. This framework should clarify the allocation of costs of future natural disasters in Belgium, the financing of regional disaster funds, treatment of insured and uninsured claims, and its own robustness to climate change. As all Belgium's Regions are likely to be affected by natural disasters in the future and most Belgian fire insurers are active throughout the country, a consistent approach between Regions is desirable.

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 and asset management is part of the ongoing shift towards a more market-oriented financial system, where a growing 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, also fitting in with Europe's efforts to become less dependent on banks to finance the economy. But if it 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 generate additional risks for investors, directly or through its interconnection with other sectors. In particular, the use of leverage can create risks and has the potential to amplify shocks through the financial system. This is especially the case in periods of stress or higher market volatility.

In December 2022, the Bank and the Financial Services Market Authority (FSMA) published a new edition of their annual joint report on non-bank financial intermediation and asset management in Belgium. It was the fourth update of the report that was first published in 2017 following a recommendation by the High-Level Expert Group. The report analyses potential systemic risks stemming from the financial system's asset

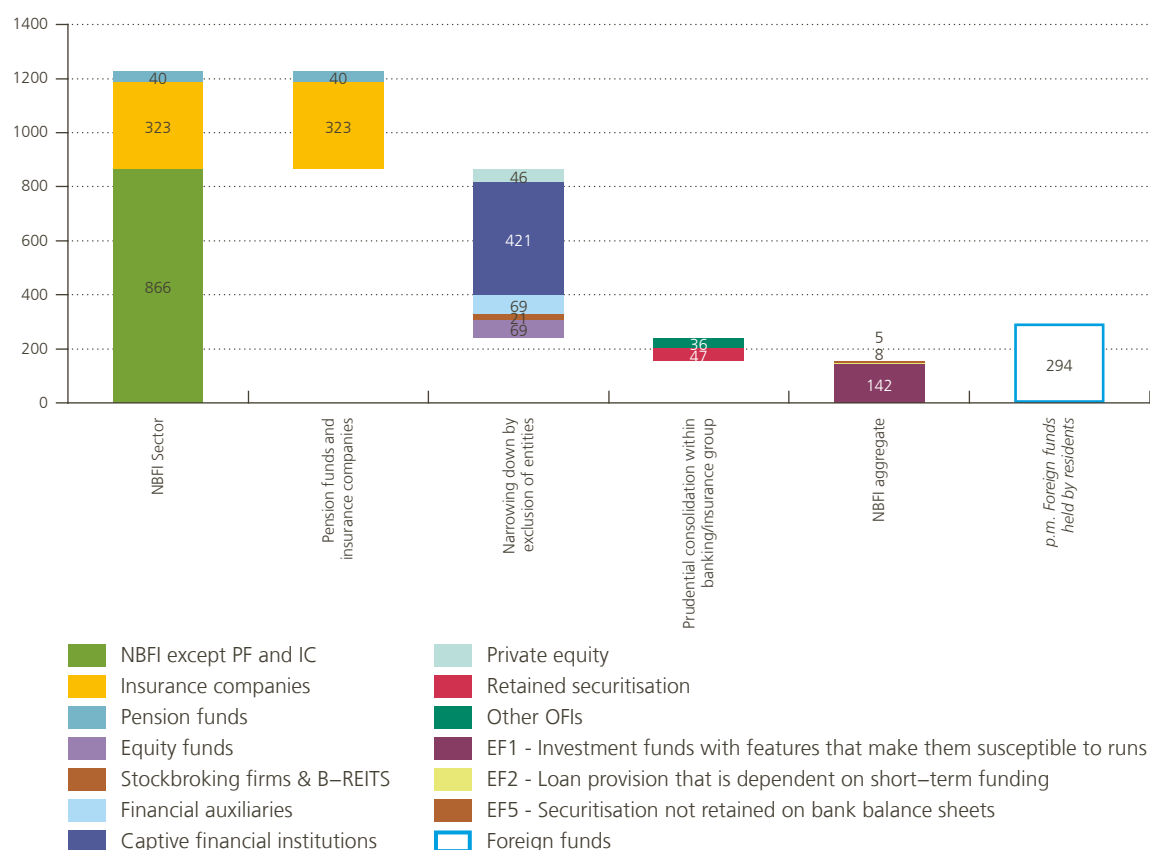
management and non-bank financial intermediation segments, their interconnection with other (financial and non-financial) sectors and related consumer protection aspects. It also contains a review of relevant national and international developments, regulations and ongoing policy work.

As mentioned in section 1, price corrections in financial markets were generally quite orderly in 2022, with the notable exception of the adverse interaction between leveraged investments of UK pension funds and a sharp rise in UK government bond (gilt) yields in the third quarter. This episode was yet another illustration of the risks that can arise in the non-bank financial sector when leverage is used to boost returns or insufficient reserves are kept 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 to dump assets on the financial markets in order to pay back investors. These events prompted central banks to intervene to stabilise the markets. A year later, the collapse of the financial services company Greensill and the family office Archegos showed that banks (Credit Suisse in this case) can sustain significant losses when they are exposed to poorly regulated entities with a high risk profile.

Chart 19

Delineation of the Belgian NBFi sector according to the narrow FSB definition

(€ billion, end 2022)



Source: NBB.

Notes: NBFi = Non-bank financial intermediation; OFIs = Other financial intermediaries; B-REIT = Belgian Real Estate Investment Trust.

In Belgium, non-bank financial intermediation (NBFI) was comparatively resilient in 2022, following the good financial performance posted in March 2020. This resilience to market shocks reflects generally prudent risk management. The latest report prepared by the Bank in cooperation with the FSMA confirmed in this connection that the market for asset management and non-bank financial intermediation in Belgium can be considered fundamentally sound and is of fairly moderate size. Based on the definition used by the Financial Stability Board (FSB), total financial assets of this sector in Belgium – concentrated mainly in Belgian non-equity investment funds – amounted to € 155 billion at the end of 2022. Chart 19 shows the delineation of the sector, starting from the total assets held by the very broad FSB-defined NBFI sector. It consists mainly of money market funds (MMFs) and non-equity investment funds (€ 142 billion) and – to a much more limited extent – firms engaged in loan provisioning that is dependent on short-term funding such as leasing, factoring or consumer credit companies, not part of banking groups (€ 8 billion) and securitisation that is not retained on banks' balance sheets (€ 5 billion). According to this FSB definition, the Belgian NBFI sector therefore only accounts for around 1/10 of total financial assets held by the Belgian non-bank financial sector and 1/20 of total Belgian financial sector assets (including bank sector assets).

The conclusions of the analysis on the interconnection of various Belgian sectors (households, companies, banks, non-banks, public authorities) with the global non-bank financial sector are also still quite reassuring. For Belgian households and non-financial corporations, the links with NBFI entities worldwide are mainly the expected ones (investment of households in investment funds; leasing, factoring and other forms of non-bank financing in the case of the non-financial corporations) and the associated risks seem to be contained. Belgian households that invest in investment funds are generally characterised by higher incomes which limits potential wealth effects linked to an important drop in the asset values of the investment funds. Belgian non-financial corporations have thin connections with the asset management and NBFI sector, both on the asset and liability sides. The interconnection with NBFI entities and asset management business is stronger for the Belgian banking and insurance sector, especially in the case of intra-conglomerate entities. These links first and foremost consist of contractual links and pertain for example to the funding received by banks from investment funds, asset management vehicles and non-bank financial intermediaries. Banks also act as sponsor of these entities (with related potential “step-in” risks) or as their derivative and securities lending counterparty.

While the systemic risks stemming from asset management and NBFI for financial stability in Belgium thus generally seem to be rather contained, continued vigilance is required, given the rapid developments and the persistent vulnerabilities in the global NBFI sector. Both the Bank and the FSMA therefore also support European and international efforts to address the remaining vulnerabilities in the global NBFI sector. One of the main required deliverables is the follow-up of the reforms recommended by the FSB.

4.2 Digitalisation and Fintech companies

The digitalisation of the financial world offers opportunities for financial institutions but also brings up 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 along the traditional financial system, whether or not in close cooperation with the so-called incumbent financial institutions making up the traditional financial system. In this sub-section, we will focus on Fintech and clearly distinguish this aspect of the digitalisation of finance from that covered in the next sub-section, dealing with decentralised finance and crypto markets.

The Fintech ecosystem involves a great diversity of actors: while some companies are licensed financial services providers falling under a regulated scope, others are non-regulated, or purely tech firms developing digital solutions for financial institutions. According to Fintech Belgium, there were around 167 Fintech companies in 2022 with an estimated invested capital of € 218 million to finance the start-up and further development of

these activities. The distribution of their business shows some concentration around three sectors, representing roughly two-thirds of Belgian Fintech firms:

- *Payments* (1/4) such as online payments, peer-to-peer transfers, or large value transfer networks;
- *Asset management, financing and investment* (1/4), including peer-to-peer lending, crowdlending and funding platforms, robo-advice and customer investment tools;
- *Infrastructure and enabling technologies* (1/5) with applications to a wide range of cross-functional digital financial services, such as mobile identification, data collection driven by artificial intelligence or debt recovery facilities.

Moreover, the Fintech-ecosystem in Belgium is still relatively young, possibly signalling some potential for the market to further develop. According to an analysis by the firm KleinBlue, more than 50 % of companies were at the stage of product launch and early development phases in 2021-2022. Other markets, such as France or the UK, seem more mature based on transaction volumes and funds raised so far.

The further deployment of Fintech brings new opportunities to Belgian financial institutions but can also generate or exacerbate IT-related risks. For example, as digitalisation increases interconnectivity, it is more and more crucial to ensure the (cyber)security and continuity of underlying systems and infrastructure.

The Bank's 2021 Fintech survey confirmed that financial intermediaries are now able to leverage these new digital tools and solutions (cloud services, artificial intelligence and big data) in order to improve their business model efficiency and risk management practices (e.g. credit scoring). They also expect to benefit from revenue streams from the expanded range of cross-selling financial/digital products and services tailored to meet customers' new needs (mobile banking apps and wallets, instant/real time and larger value payments). The survey also showed that the rapidly changing environment, at the same time, challenges financial institutions to adapt with agility to the new cyber and operational risks and to the novel competition from tech-native actors. These actors, which include BigTech firms, benefit from digital infrastructures, deep knowledge, skills and strong customer bases. Belgian financial incumbents are therefore and naturally also opting to intensify partnerships with third-party parties' providers (e.g. Payconiq, Doccle).

4.3 Decentralised finance and crypto markets

Decentralised finance and crypto markets are another, yet very different, manifestation of the opportunities opened up by digitalisation. These 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 way in which these crypto markets are (not) organised (Chart 20).

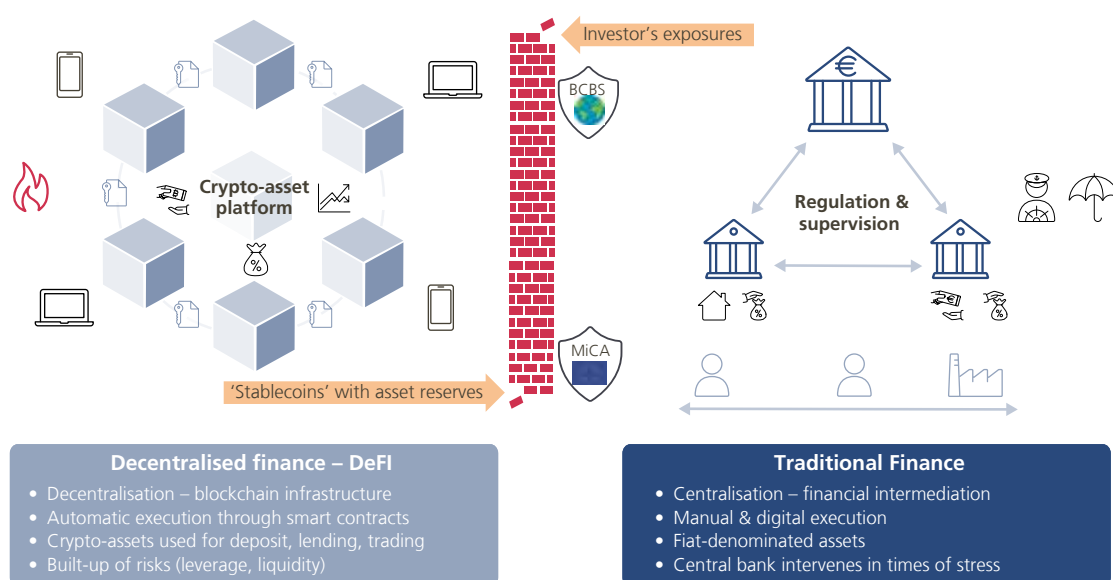
Decentralised finance and crypto-markets lack many of the guard-rails that have been integrated into the traditional financial system to protect customers and maintain financial stability, based on the long historical experience with financial crises and the inherent instability of non-organised financial markets.

In 2022, the crypto world witnessed a number of high-profile failures, such as the collapse of the (then) third largest so-called stablecoin TerraUSD and the bankruptcy of the leading trading platform FTX and its affiliates. In this context, strong similarities with past financial bubbles demonstrated that the valuation of these products is based on highly speculative practices. The events also revealed fraud 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. That said, specific risks such as increasing leverage, connections through reserve-backed stablecoins (see below) and the possible changing dynamics of investors' exposures have received greater attention and need close monitoring. In 2022, the proposed *European Markets in Crypto Assets* (MiCA) regulation for crypto issuers and providers in the EU market and the Basel Committee on Bank Supervision's (BCBS) prudential treatment of crypto exposures set appropriate frames to mitigate some of those risks; but they will not be implemented until at least 2024.

Chart 20

Traditional versus decentralised finance



Crypto and decentralised finance (DeFi) are broad umbrella terms, but are clearly very different from traditional finance. According to a definition given by the International Monetary Fund (IMF), crypto, without being a traditional financial asset, “encompasses a wide variety of products sharing similar characteristics of privately issued digital representations of value cryptographically secured and using distributed ledger technology such as blockchains”. In addition, the IMF refers to DeFi as financial applications processed by computer codes called smart contracts. These apps perform transactions on a blockchain in a self-executed manner, provided the conditions that were pre-defined by the counterparties involved are met. The blockchain provides the digital infrastructure to store and record cryptographically secured pieces of information, each added to the same block of data, verified and distributed by a network of authorised participants. Compared to traditional finance, DeFi enables transactions in a highly decentralised and disintermediated way: with steps such as authorisation, settlement, record-keeping, risk-taking and decision-making being distributed over the network of participants, there is little if any involvement of financial intermediaries. The ecosystem hosts a broad range of applications replicating financial intermediation business such as deposit-taking, exchange platforms, lending and derivatives. In practice, autonomous protocols lock the values of cryptos into so-called liquidity pools, which are then used to trade or lend out to other entities via collateralised borrowing.

The crypto universe consists of diverse types of so-called “assets”, coins and tokens. The most commonly known are unbacked crypto “assets” (e.g. Bitcoin) and stablecoins that aim to maintain a stable value relative to a specific asset or a pool of assets. Some of these stablecoins are backed by reserves of traditional financial assets (fiat currencies, commercial paper or sovereign bonds, e.g. Tether); while others are backed by other crypto “assets” or are purely algorithmic. Overall crypto “assets” lack intrinsic value, are highly volatile and prone to sentiment swings, making them risky instruments.

In the last few years, crypto has attracted the attention of both investors and regulators globally. Over the year 2022 though, and following prior spectacular growth, they faced severe stress as several actors, platforms and coins collapsed (e.g. algorithmic stablecoin TerraUSD in May, lending platform Celsius in July, crypto exchange platform FTX in November). These episodes exposed typical runs, massive sell-offs and contagion effects within the ecosystem, resulting in a correction of their valuation, notably in the second half of the year (crypto winter). From a peak in November 2021 of more than € 2500 billion, the total market capitalisation of crypto lost 70 % and came to below € 800 billion by end December 2022. Even at its peak, the market has remained relatively small, below 1 % of the size of the EU financial sector.

The practices and related vulnerabilities of the crypto and DeFi ecosystems replicate those from traditional finance, only exacerbated by novel mechanisms unlocked by DeFi and without any regulatory safeguards. The 2022 crypto turmoil exemplified typical boom-bust cycles, with steep expansions followed by abrupt corrections. It further unveiled severe inherent flaws in self-referential systems between companies, opaque structures, poor business, governance and custody practices (no asset segregation, no clear accounting rules), even fraud. In terms of financial stability, several risks came to fore :

- **Leverage**: with the composability feature of DeFi (i.e. components pieced together to create new products), unrestricted leverage opportunities and complex trading strategies built up, sometimes with multiple rounds of re-hypothecation of crypto “assets”. Some platforms give investors the option to leverage their initial position- and related risk-taking by multiples stretched up to 100 or 125 times. The growing use of leverage amplifies the volatility and contagion through collateral chains: when the value of crypto “assets” held as collateral on lending protocols falls below a predetermined threshold, they are automatically released for liquidation, further amplifying the initial price shock.
- **Liquidity and maturity mismatch**: some crypto lenders and platforms claim to offer redemption on demand, while investing in crypto instruments with different degrees of liquidity without any safeguards nor guarantees for investors to retrieve their funds at equivalent par value. In times of stress, liquidity mismatch and its scarcity further amplify runs.
- **Interconnection**: while contagion risks within the crypto space are high, they remain limited towards the traditional financial markets mainly through two channels:
 - While direct exposures of the European (including Belgian) financial sector to crypto markets remain so far limited, several large institutional investors such as investment funds had shown a more pronounced appetite, which reduced nevertheless after the recent turbulence.
 - Reserve-backed crypto “assets” (stablecoins) represent a gateway to move in and out of crypto and fiat worlds. With no explicit safety net nor lender of last resort, a run on a large stablecoin could lead to fire sales of its underlying reserves, causing frictions in corresponding markets. The lack of transparency of their composition, with limited auditability and insufficient disclosure, magnifies this risk. Still, the overall size of stablecoins is still quite small. Their market capitalisation was worth € 140 billion in December 2022.

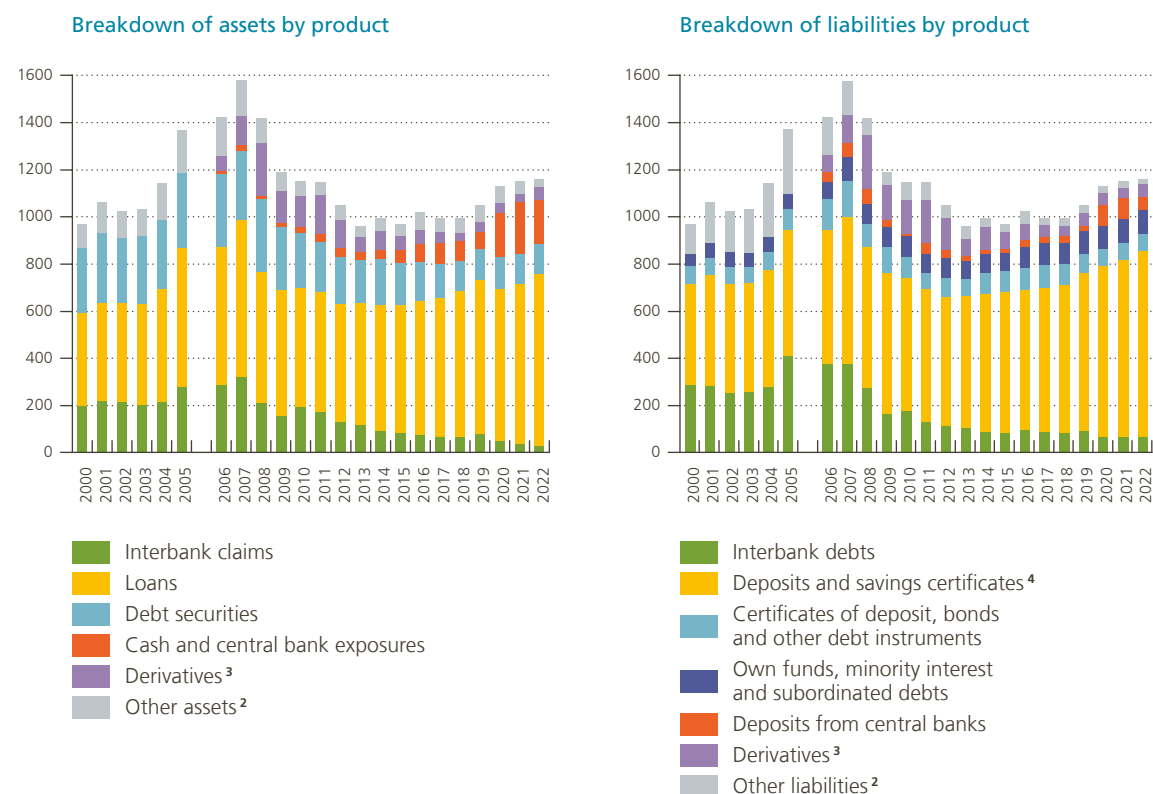
5. Additional charts and tables

5.1 Banking sector

Chart B1

Assets and liabilities by product¹

(consolidated data, in € billion)



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.

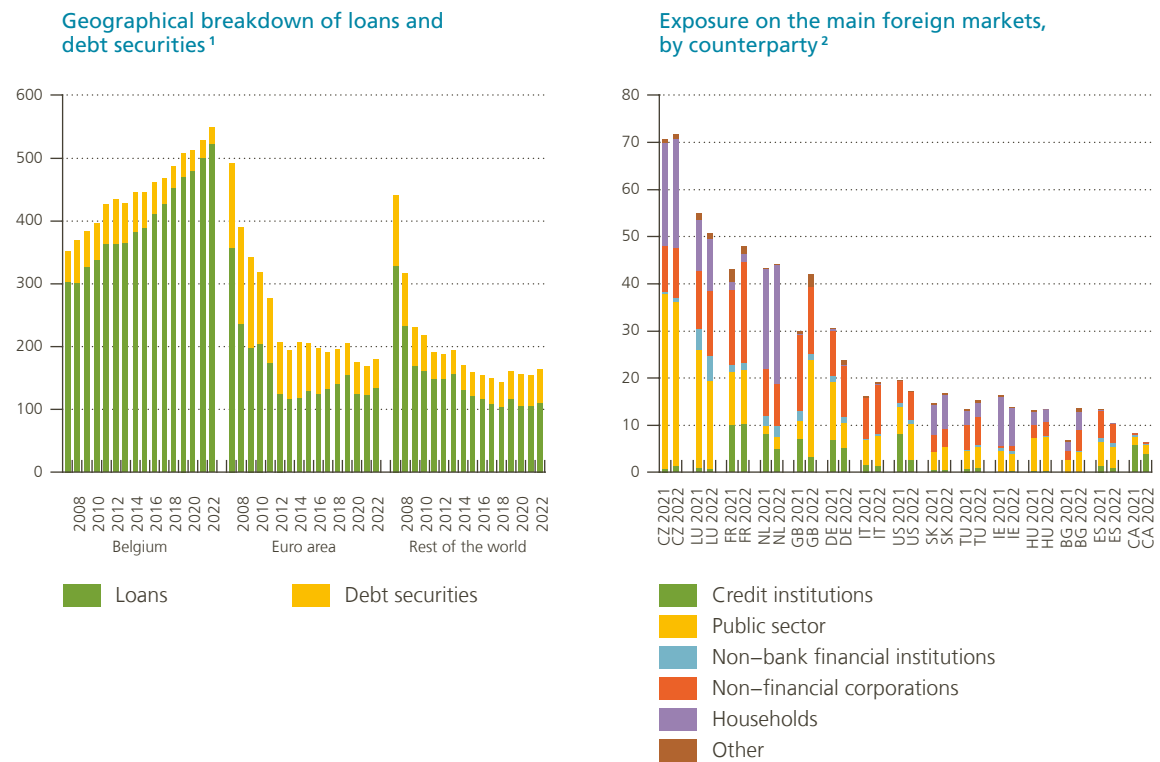
3 Derivatives are recognised at market values – from 2007 – income receivable and expenses payable.

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

Chart B2

Geographical and sectoral breakdown of assets held by Belgian banks

(consolidated data, in € billion)



Source: NBB.

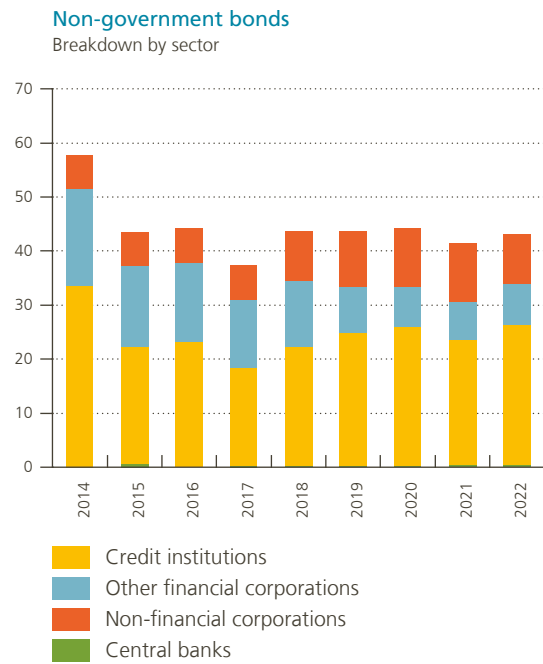
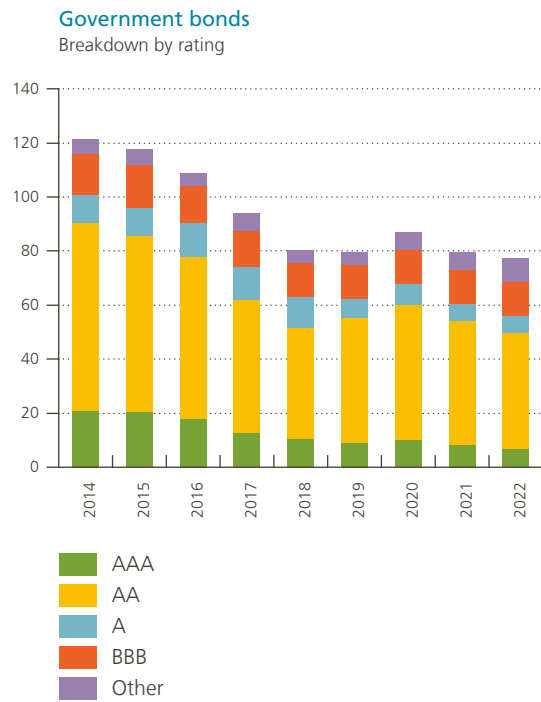
1 Gross carrying amounts, excluding exposures to central banks.

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

Chart 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 2022, gross carrying amounts, in € billion)

	Total NFCs	Belgian NFCs	Foreign NFCs
Loans and advances to non-financial corporations	303.3	182.0	121.3
of which:			
Manufacturing	46.9	20.7	26.3
Wholesale and retail trade	46.6	28.3	18.3
Real estate activities	39.7	31.8	7.9
Construction	29.5	21.2	8.2
Administrative and support service activities	25.3	7.0	18.3
Professional, scientific and technical activities	22.7	19.6	3.1
Transport and storage	17.3	8.5	8.9
Human health services and social work activities	15.7	14.3	1.3
Agriculture, forestry and fishing	13.2	4.0	9.2
Electricity, gas, steam and air conditioning supply	12.7	5.2	7.4
Financial and insurance activities	7.9	6.1	1.8
Information and communication	7.4	3.4	4.0
Other services	4.5	2.0	2.5
Accommodation and food service activities	4.4	3.5	0.9
Water supply	3.5	2.5	1.0
Arts, entertainment and recreation	2.0	1.7	0.3
Mining and quarrying	1.8	0.3	1.6
Public administration and defence, compulsory social security	1.5	1.4	0.1
Education	0.6	0.5	0.1

Source: NBB.

Table B5

Belgian banks' exposures to the residential and commercial real estate market¹

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

	2020		2021		2022	
	In € billion	In % of total assets	In € billion	In % of total assets	In € billion	In % of total assets
Residential real estate market						
Lending for house purchase	283.2	25.0	290.9	25.3	311.3	26.9
Loans collateralised by residential real estate	273.5	24.2	288.2	25.0	306.7	26.5
of which to Belgian residents	208.4	18.4	228.9	19.9	240.8	20.8
Commercial real estate market						
Loans to the commercial real estate sector ²	62.2	5.5	63.7	5.5	69.2	6.0
of which to Belgian residents	46.9	4.1	49.0	4.3	53.1	4.6
Loans collateralised by commercial real estate	60.4	5.3	77.5	6.7	83.8	7.2
of which to Belgian residents	46.2	4.1	62.6	5.4	66.9	5.8

Source: NBB.

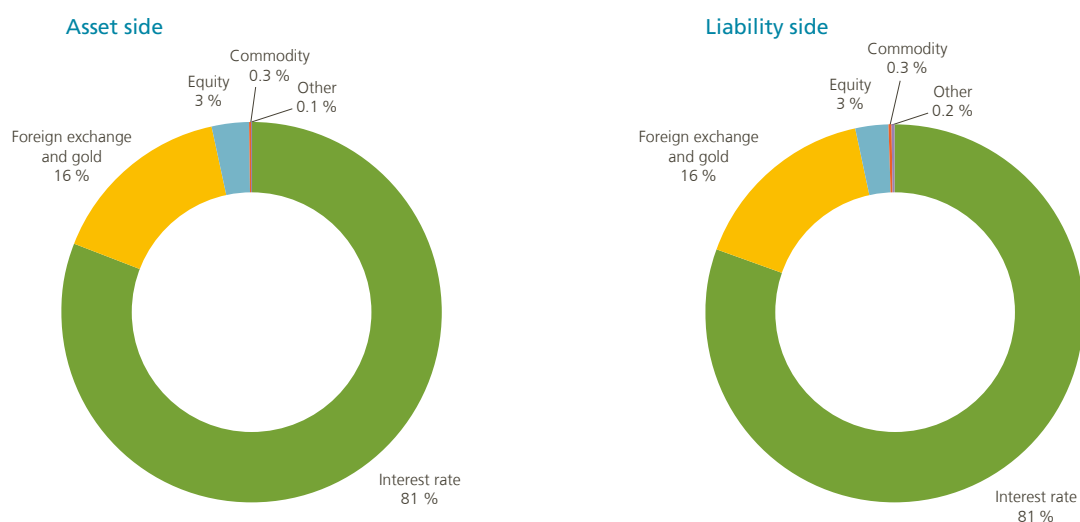
1 According to different concepts available in the reporting, which can be partly or largely overlapping.

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

Chart B6

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

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



Source: NBB.

Table B7

Belgian banks' asset encumbrance in 2022

(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 general governments	Loans on demand	Other assets / collateral received		
Source of encumbrance										
Derivative transactions	3.0	0.5	0.0	0.1	6.8	0.0	0.2	4.4	15.0	93.8
Repo transactions and other deposits (excluding central banks)	20.6	1.2	1.7	0.9	0.0	0.4	0.0	0.0	25.0	118.0
Issuance of covered bonds	0.3	0.0	32.8	0.1	0.0	1.4	0.0	0.0	35.0	142.8
Issuance of ABS	0.0	0.0	4.0	0.9	0.0	0.0	0.0	0.0	5.0	104.9
Central bank funding (of all types: TLTROs, repos)	1.6	1.6	25.4	22.8	0.0	6.9	0.0	0.0	58.0	117.1
Other sources of encumbrance	6.6	1.9	3.7	0.3	0.2	0.1	1.5	0.1	14.0	203.9
Total encumbered assets and collateral received	32.1	5.2	67.6	25.0	7.1	8.9	1.7	4.5	152.0	123.8
Asset encumbrance ratio ¹ (in %)	33.3	7.0	14.1				1.0	5.0	12.6	

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 $\frac{\text{total encumbered assets} + \text{total collateral received and reused}}{\text{total assets} + \text{total collateral received and available for encumbrance}}$.

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
	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2022
Total loans ¹	1.6	1.5	1.7	1.6	1.4	1.3	1.13	0.94	45.0	44.1	83.5
of which:											
Non-financial corporations	3.2	2.8	3.5	3.2	2.8	2.3	2.58	1.96	51.2	51.4	85.4
of which:											
SMEs	3.4	2.9	3.3	2.9	3.5	2.9	2.97	1.84	47.8	45.6	86.4
Loans collateralised by CRE	3.5	2.9	3.4	3.0	3.7	2.5	4.12	2.89	28.4	28.5	95.4
Households	1.4	1.1	1.4	1.2	1.2	1.0	0.95	0.75	27.2	22.6	84.9
of which:											
Residential mortgage loans	1.0	0.9	1.0	0.9	0.8	0.6	0.96	0.80	12.1	12.1	98.5
Credit for consumption	4.8	3.6	5.3	3.6	3.7	3.6	0.40	0.24	50.7	42.1	46.8

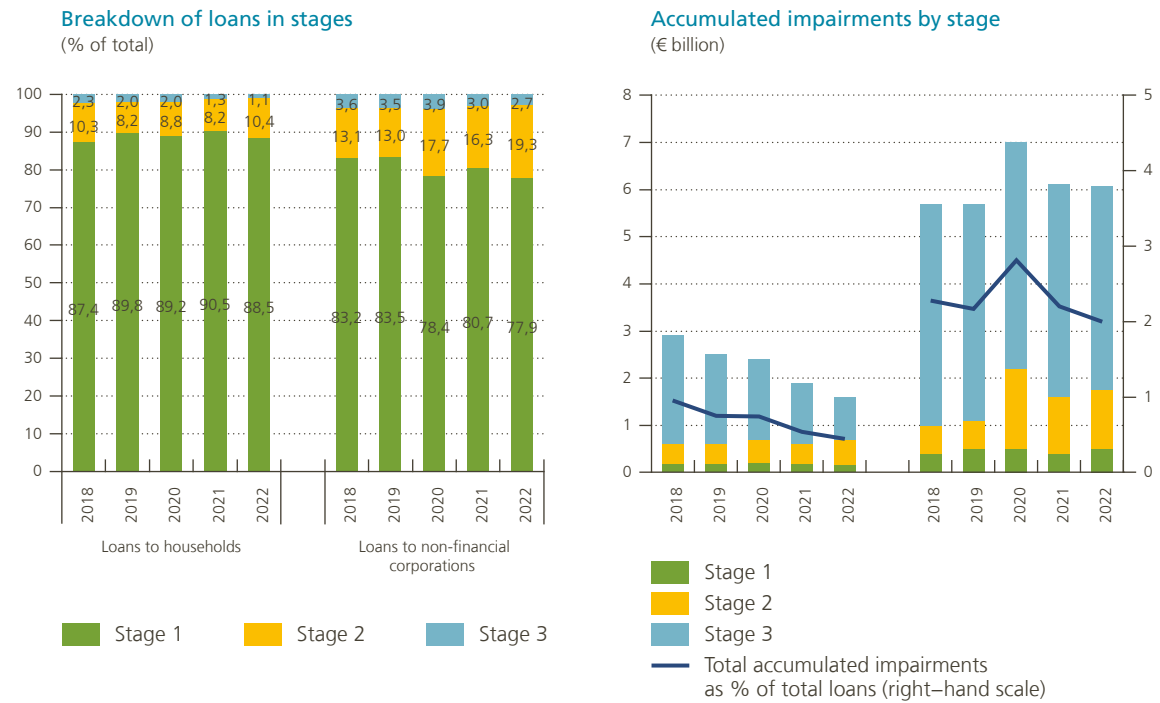
Source: NBB.

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

Chart B9

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

(consolidated end-of-period data)

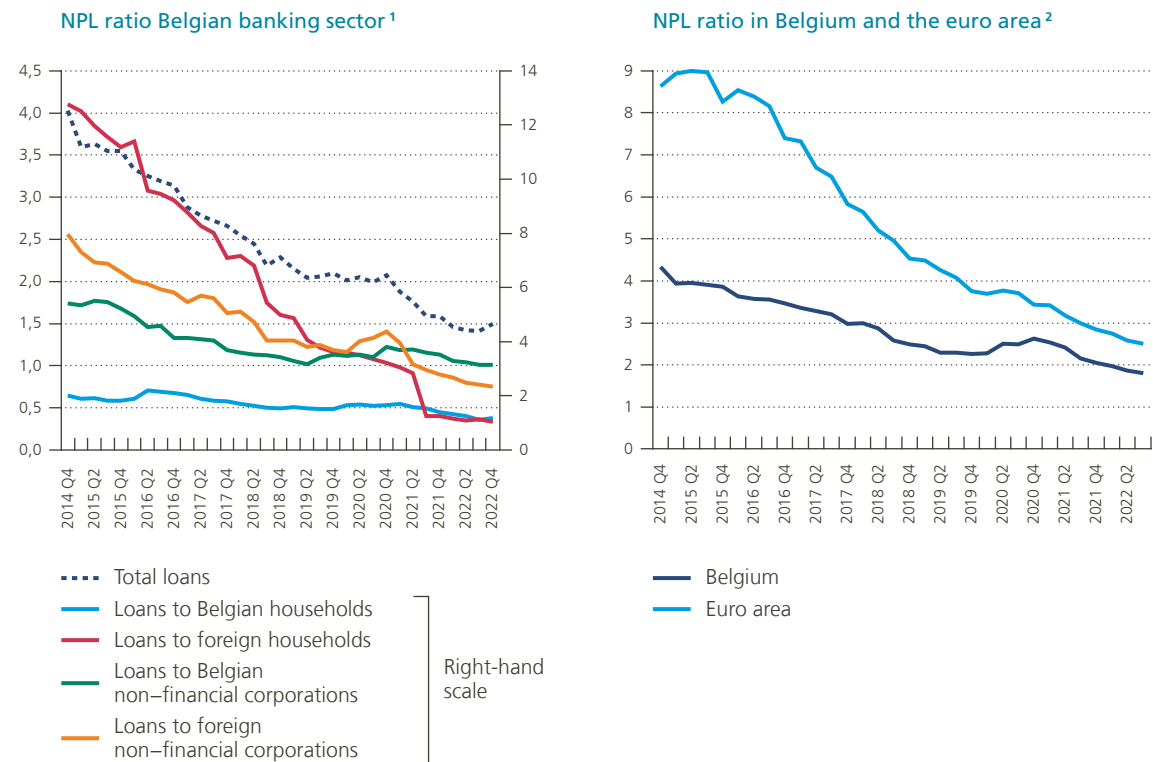


Source: NBB.

Chart B10

Non-performing loans

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



Source: NBB.

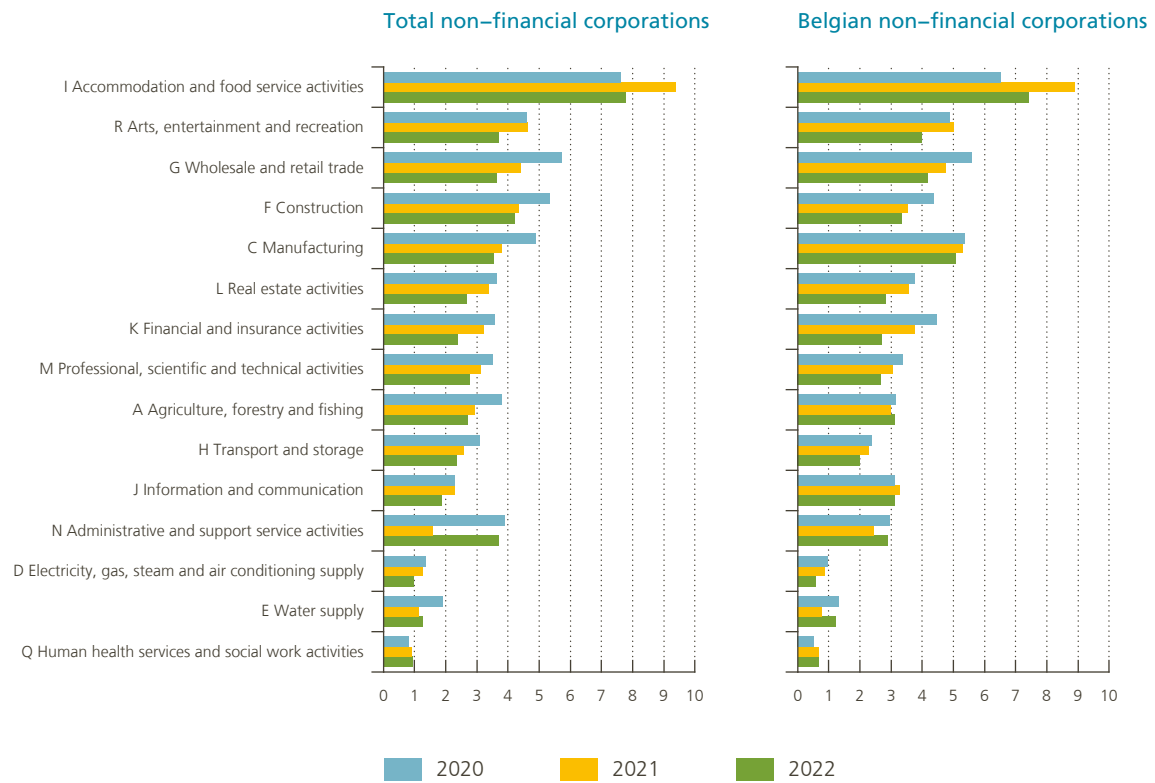
1 Non-performing loans are loans that may not be repaid, due to their borrower getting into financial trouble, or that are already in arrears.

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

Chart B11

NPL ratio for non-financial corporations by corporate sector¹

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



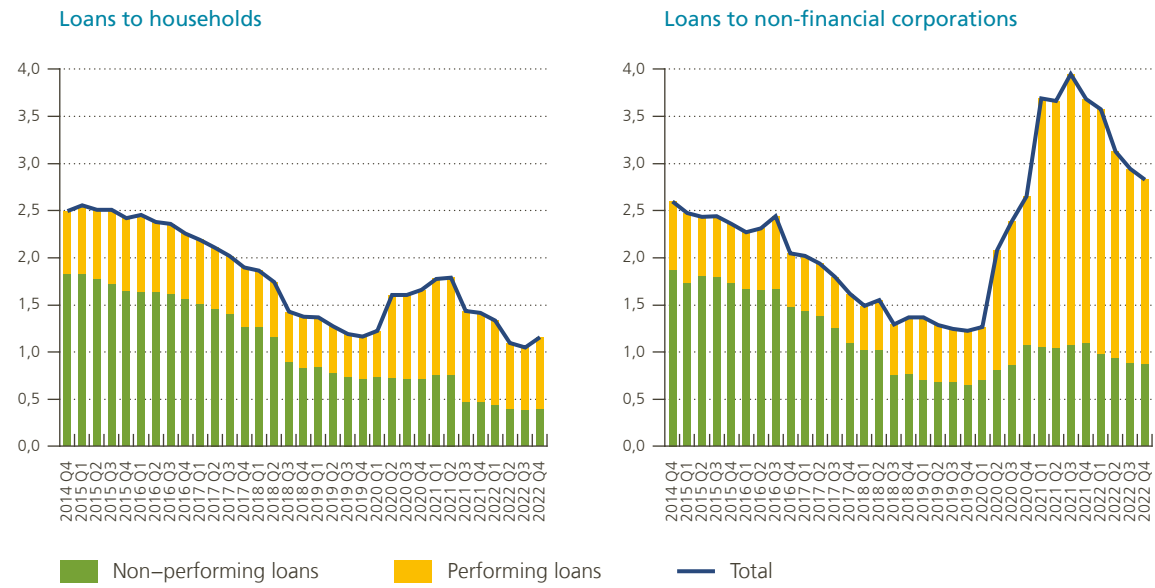
Source: NBB.

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

Chart B12

Loans with forbearance measures¹

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



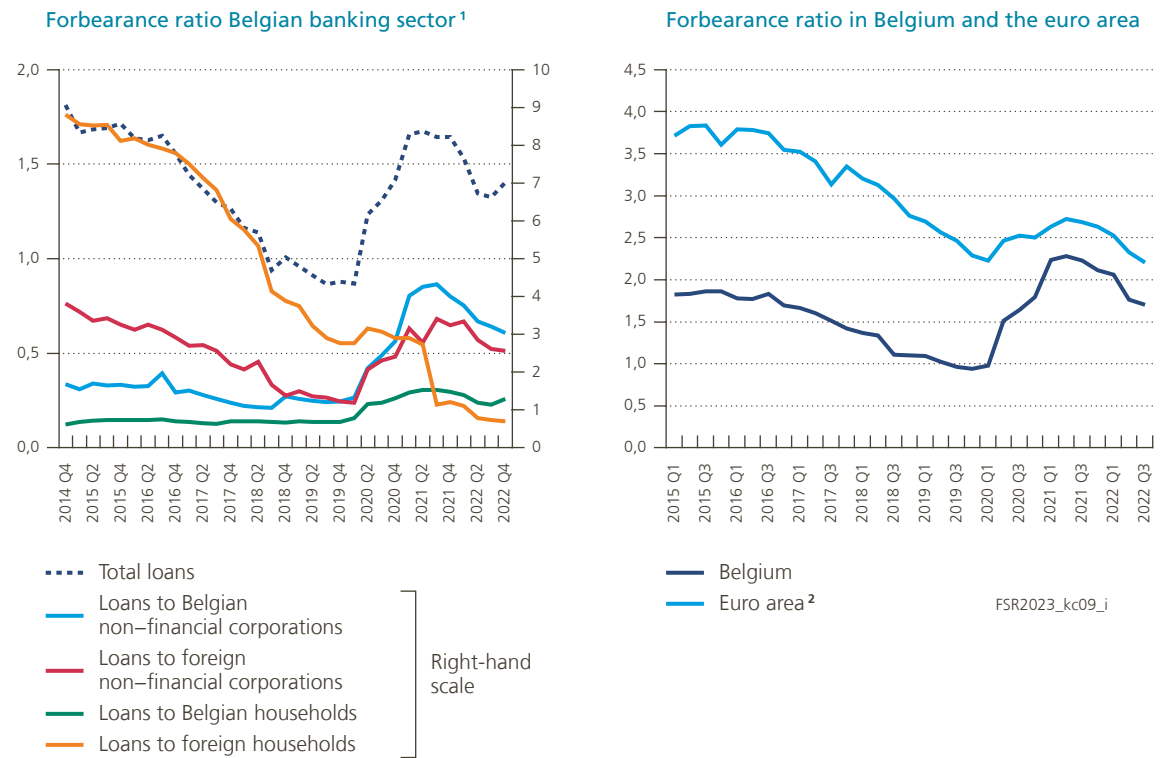
Source: NBB.

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.

Chart B13

Loans with forbearance measures

(consolidated data, in % of total loans)



Source: NBB.

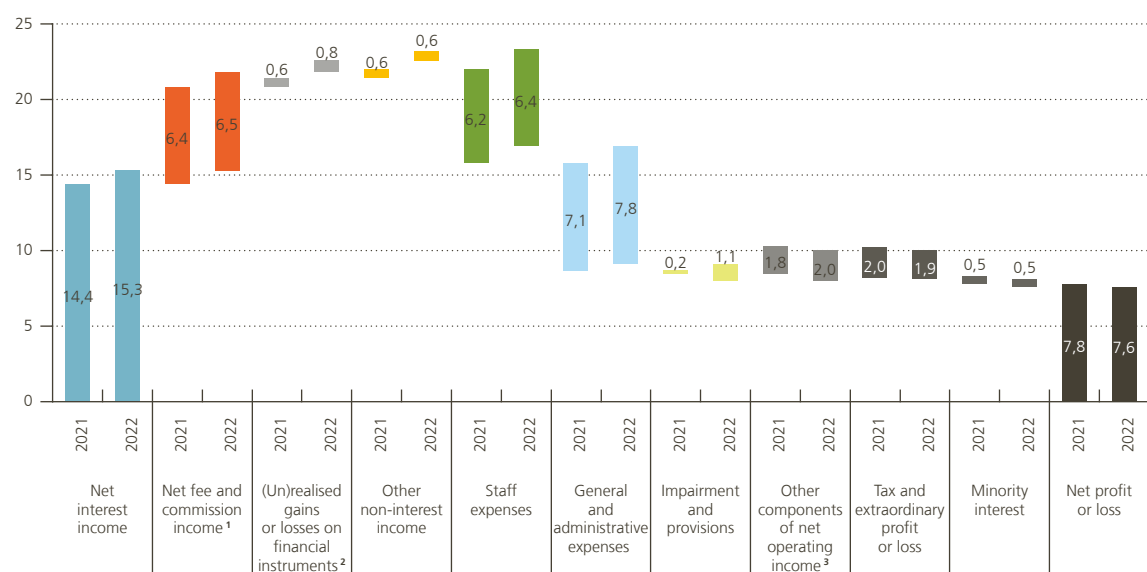
1 Loans with forbearance measures are loans for which banks have made concessions (modifications of the contract or debt refinancing) to debtors facing or about to face financial difficulties in meeting their commitments.

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

Chart B14

Main components of the income statement in 2022 compared with 2021

(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.

Table B15

Aggregate income statement of the Belgian banking sector

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

	2016	2017	2018	2019	2020 ⁵	2021	2022
Net interest income	14.82	14.11	14.41	14.62	14.19	14.35	15.30
Non-interest income	7.62	8.94	8.25	8.48	8.19	7.63	7.94
Net fee and commission income ¹	5.63	5.62	5.58	5.57	5.59	6.43	6.55
(Un)realised gains or losses on financial instruments ²	1.50	0.86	1.22	0.53	0.01	0.56	0.80
Other non-interest income	0.50	2.46	1.46	2.39	2.59	0.64	0.59
Total operating income (bank product)	22.44	23.05	22.66	23.10	22.39	21.98	23.24
Total operating expenses (–)	13.11	13.42	13.89	13.74	13.82	13.28	14.18
Staff expenses (excluding commissions paid to bank agents)	6.47	6.74	6.84	6.77	6.51	6.20	6.37
General and administrative expenses (including depreciation)	6.64	6.68	7.05	6.97	7.31	7.08	7.81
Gross operating result (before impairments and provisions)	9.33	9.63	8.77	9.36	8.57	8.71	9.06
Total impairments and provisions (–)	1.76	0.67	0.83	1.26	3.12	0.23	1.11
Impairments on financial assets at amortised cost ³	0.90	0.41	0.61	1.05	2.77	0.19	0.84
Impairments on other financial assets	–0.04	–0.07	–0.01	0.01	0.02	0.00	–0.01
Other impairments and provisions	0.90	0.34	0.23	0.20	0.32	0.03	0.28
Other components of net operating income ⁴	0.37	0.29	0.26	0.25	0.50	1.78	1.99
Net operating income	7.94	9.25	8.20	8.35	5.96	10.25	9.94
Tax and extraordinary profit or loss	–1.56	–2.64	–2.00	–1.78	–1.26	–2.02	–1.86
Total profit or loss on discontinued operations	0.03	–	–	–	–	–	0.00
Net profit or loss including minority interest	6.41	6.61	6.20	6.57	4.70	8.23	8.08
p.m. Net profit or loss (bottom-line result)	5.75	5.95	5.60	6.12	4.26	7.76	7.62

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.

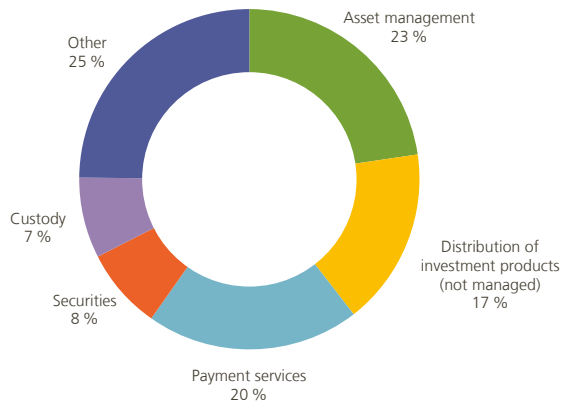
Chart B16

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

(consolidated data)

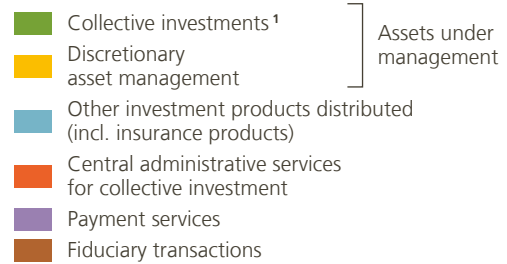
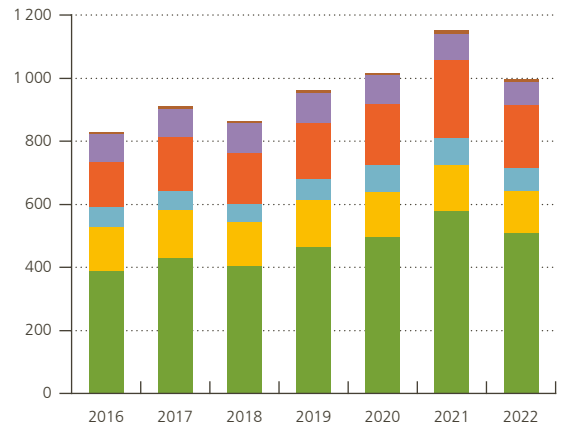
Breakdown of gross fee and commission income by source

(in 2022, in % of total)



Assets involved in the services provided (excluding custody)

(end-of-period data, in € billion)



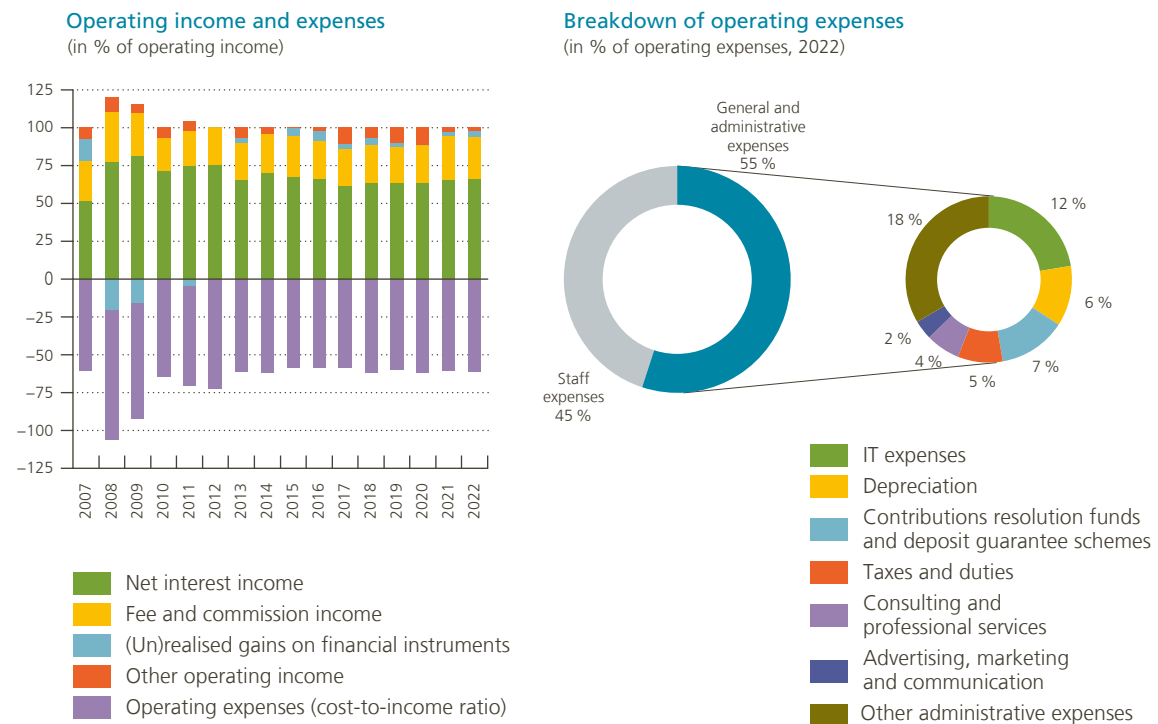
Source: NBB.

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

Chart B17

Operating income and operating expenses

(consolidated data)

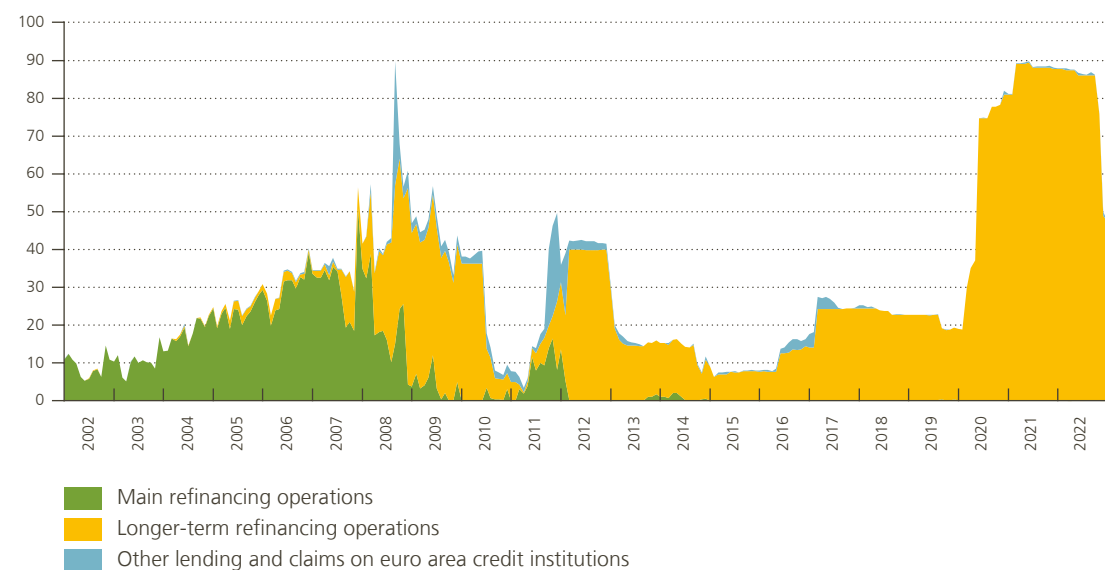


Source: NBB.

Chart B18

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

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



Source: NBB.

Table B19

Liquidity ratios

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

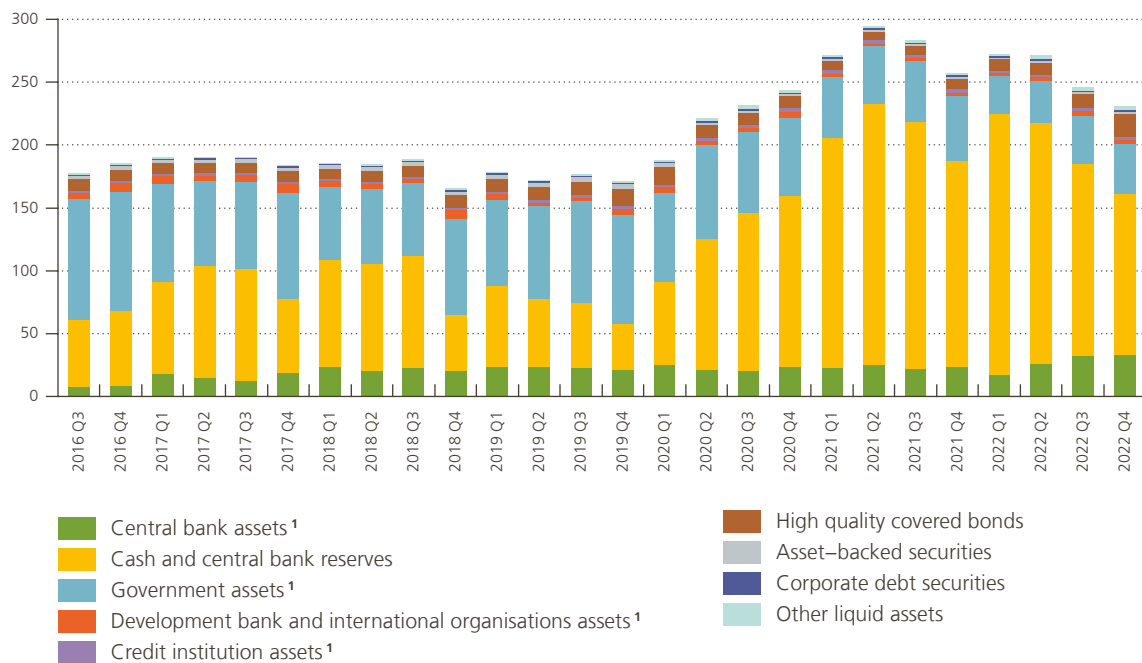
	2016	2017	2018	2019	2020	2021	2022
Customer loan-to-deposit ratio (in %)	94.9	95.5	97.5	95.9	89.0	89.6	92.0
Customer loans	566	590	619	649	648	679	729
Customer deposits	597	618	634	677	728	758	793
Liquidity coverage ratio (in %)	139.9	137.2	144.6	140.5	181.6	184.3	157.7
Liquidity buffer	185	183	165	172	244	257	231
Net liquidity outflows	132	134	114	122	134	140	146
Asset encumbrance ratio (in %)	11.7	12.5	13.2	12.1	17.1	17.9	12.6
Encumbered assets and re-used collateral	122	132	141	137	205	217	153
Total assets and collateral received	1 042	1 056	1 065	1 128	1 194	1 212	1 212
Net stable funding ratio (in %)	–	–	–	–	–	141.7	132.0
Available stable funding	–	–	–	–	–	787	733
Required stable funding	–	–	–	–	–	556	555

Source: NBB.

Chart B20

Breakdown of the liquid assets buffer

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



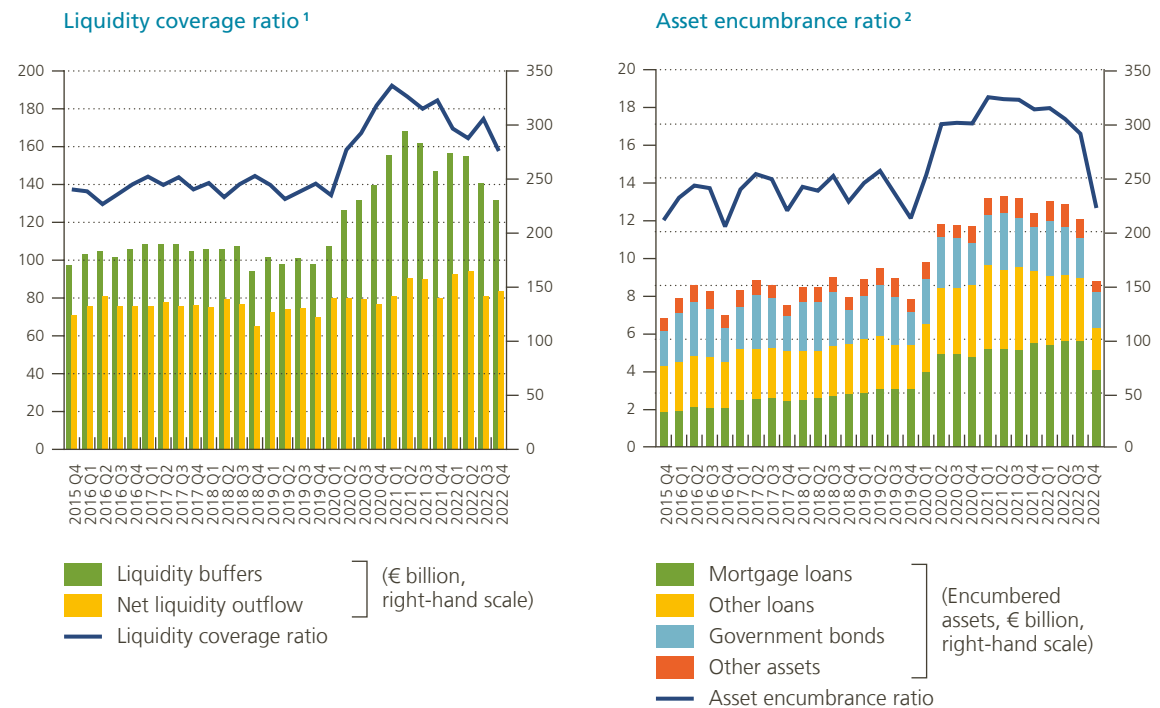
Source: NBB.

¹ Assets representing claims on or guaranteed by these entities.

Chart B21

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 B22

Solvency ratios and breakdown of capital and risk-weighted assets

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

	2016	2017	2018	2019	2020	2021	2022
Total own funds	69.8	71.0	71.8	73.7	79.4	77.6	75.3
of which:							
Tier 1 capital	60.2	63.3	63.1	65.4	71.1	71.4	69.3
of which:							
Common equity Tier 1 capital	58.4	60.6	59.7	61.1	66.9	67.0	65.1
Additional Tier 1 capital	1.9	2.7	3.3	4.3	4.3	4.4	4.3
Tier 2 capital	9.5	7.7	8.7	8.3	8.2	6.2	6.0
Risk-weighted assets	369.5	373.0	382.5	392.6	389.0	378.5	375.3
of which:							
Credit risk	309.0	315.3	315.9	322.2	321.0	317.1	327.5
Market risk	6.1	7.3	7.2	6.1	6.0	5.7	7.9
Operational risk	38.7	36.7	38.6	38.4	37.9	35.0	35.4
CVA ¹	5.5	4.3	4.5	3.9	3.1	2.2	1.7
Other	10.1	9.5	16.4	21.9	21.0	18.5	2.8
of which:							
Additional stricter prudential requirements based on Article 458 ²	8.8	9.2	16.1	17.0	17.5	18.2	0.0
Total solvency ratio (in %)	18.9	19.0	18.8	18.8	20.4	20.5	20.1
Tier 1 capital ratio (in %)	16.3	17.0	16.5	16.7	18.3	18.9	18.5
Common equity Tier 1 ratio phased-in (in %)	15.8	16.2	15.6	15.6	17.2	17.7	17.3
Common equity Tier 1 ratio fully-loaded (in %)	15.2	15.9	15.6	15.6	17.2	17.7	17.3
Leverage ratio phased-in (in %)	5.5	5.9	5.9	5.8	6.7	6.4	5.7

Source: NBB.

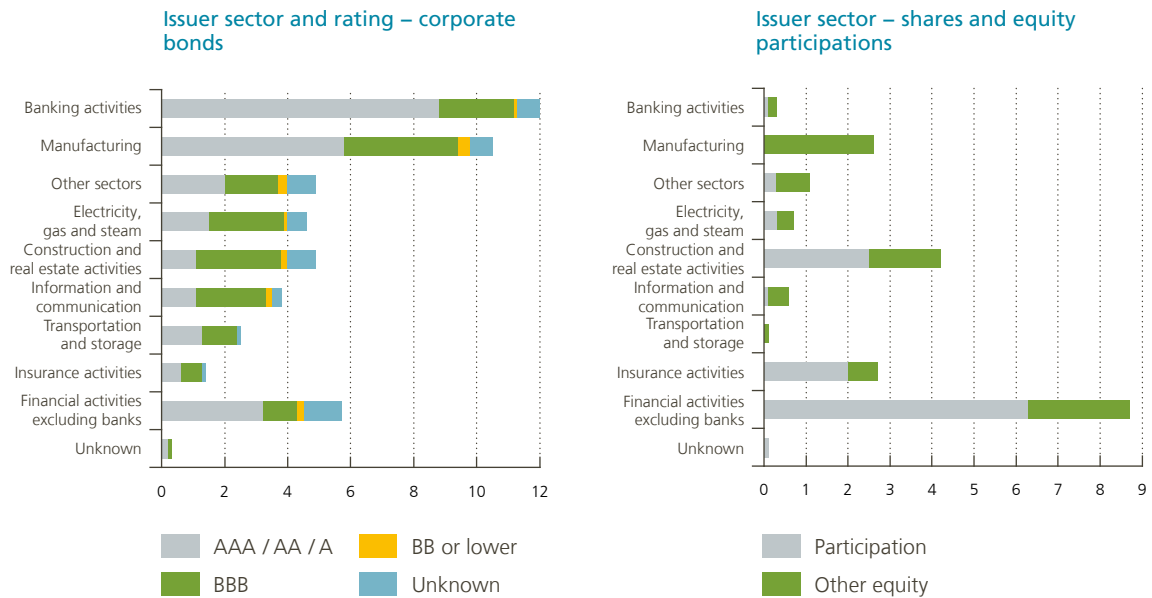
¹ Credit valuation adjustment.² Additional stricter prudential requirements based on Article 458 of the Capital Requirements Regulation due to modified risk weights for targeting asset bubbles in the residential and commercial property markets.

5.2 Insurance sector

Chart I1

Breakdown of corporate bonds and equity holdings portfolio by sectors

(non-consolidated data for the end of 2022 at market value, in € billion)

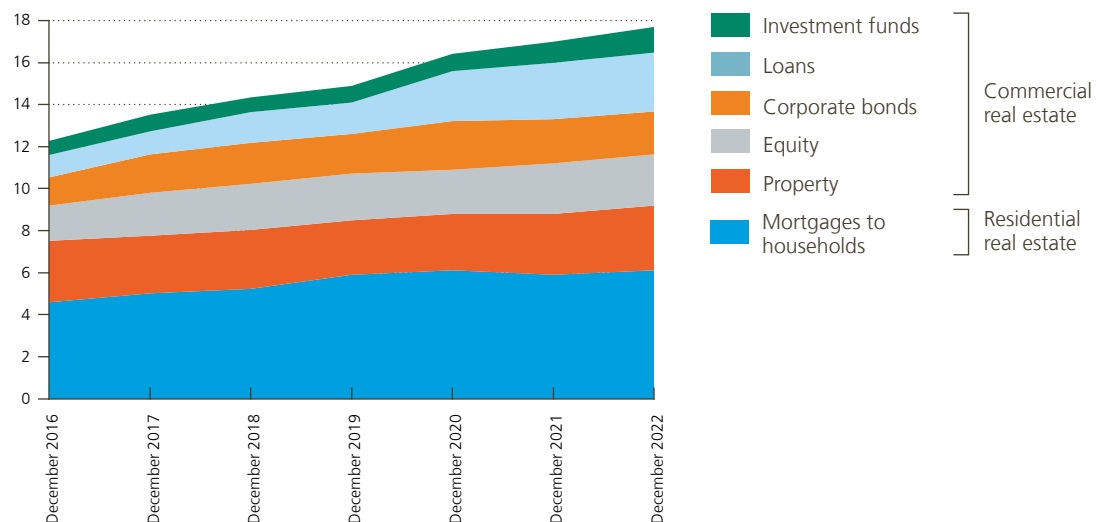


Source: NBB.

Chart I2

Breakdown of commercial and residential real estate exposure

(non-consolidated end-of-period data, in % of total investments, excluding class 23 investments)

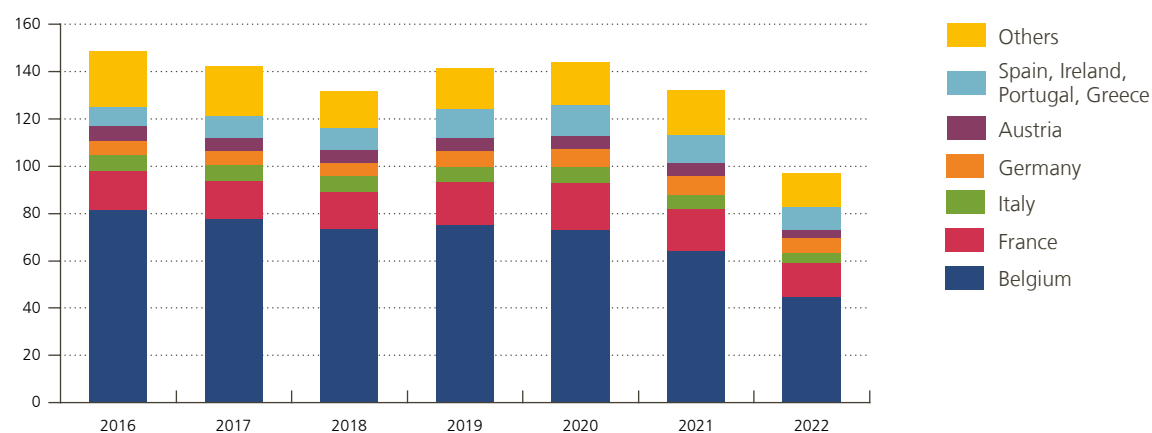


Source: NBB.

Chart I3

Geographical breakdown of public sector bonds

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

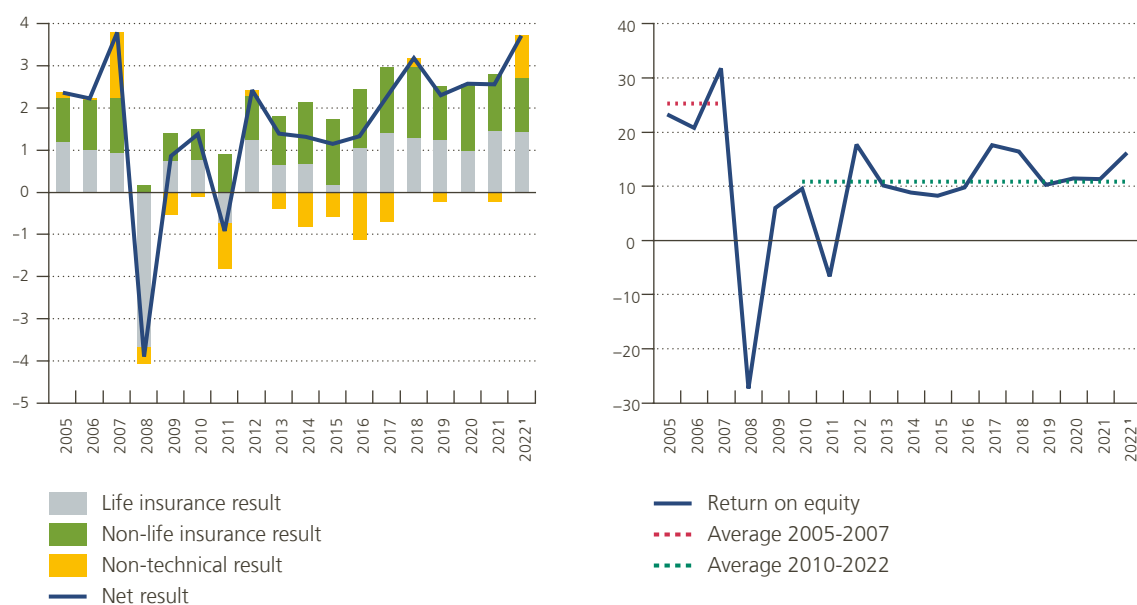


Source: NBB.

Chart I4

Net results and return on equity

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



Source: NBB.

¹ Provisional data.

Table 15

Main components of the profit and loss account

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

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 ¹
Life insurance technical result	1.2	0.7	0.7	0.2	1.1	1.4	1.3	1.3	1.0	1.5	1.5
Result of insurance activities	-8.3	-8.2	-9.3	-8.3	-7.3	-6.1	-2.5	-9.0	-5.1	-8.5	4.4
Excluding adjustments for class 23	-6.5	-6.9	-7.3	-7.8	-6.5	-5.0	-4.8	-4.7	-4.5	-4.4	-7.3
Net investment income	9.5	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	7.7	7.6	8.0	8.0	7.6	6.4	6.1	6.0	5.4	5.5	4.3
Non-life insurance technical result	1.0	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	-0.1	0.2	0.3	0.1	0.4	0.6	0.1	0.8	0.3	0.1
Net investment income	1.1	1.2	1.3	1.3	1.3	1.2	1.1	1.2	0.8	1.1	1.1
Non-technical result²	0.1	-0.4	-0.8	-0.6	-1.1	-0.7	0.2	-0.2	0.0	-0.2	1.0
Net investment income	0.9	0.3	0.4	0.3	-0.2	0.4	1.0	0.6	1.0	0.8	1.5
Other results	-0.7	-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	2.4	1.4	1.4	1.2	1.3	2.3	3.2	2.3	2.6	2.5	3.7

Source: NBB.

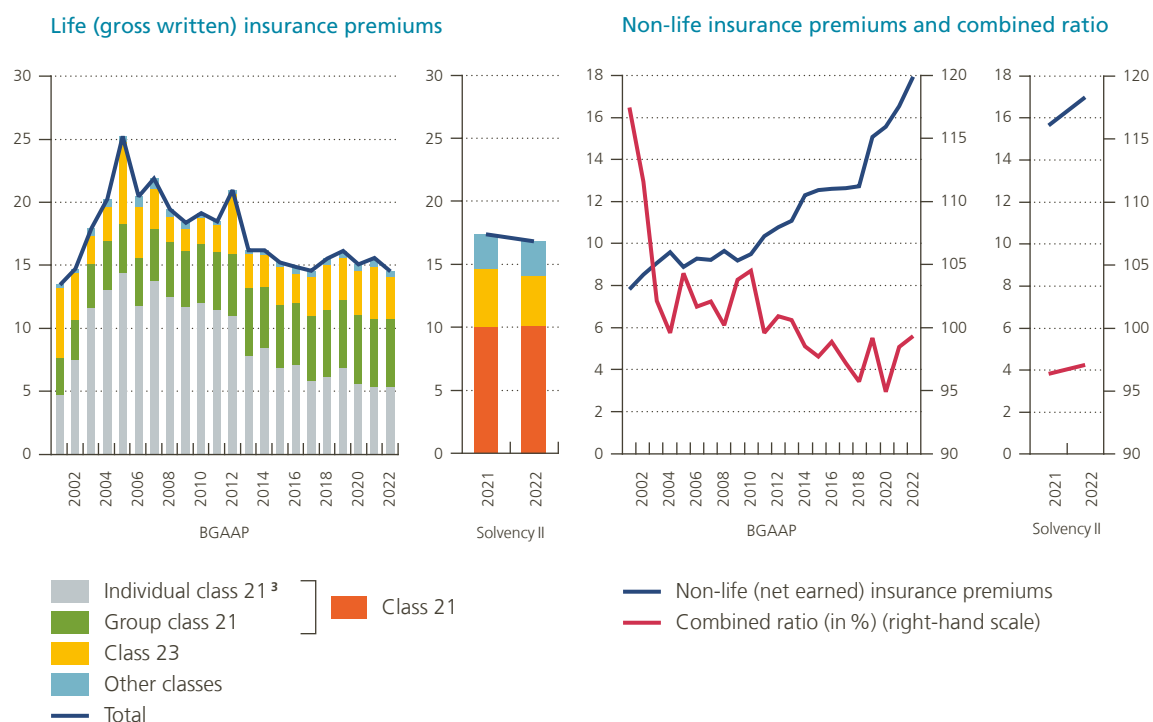
1 Provisional data.

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

Chart 16

Premiums¹ and combined ratio²

(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.

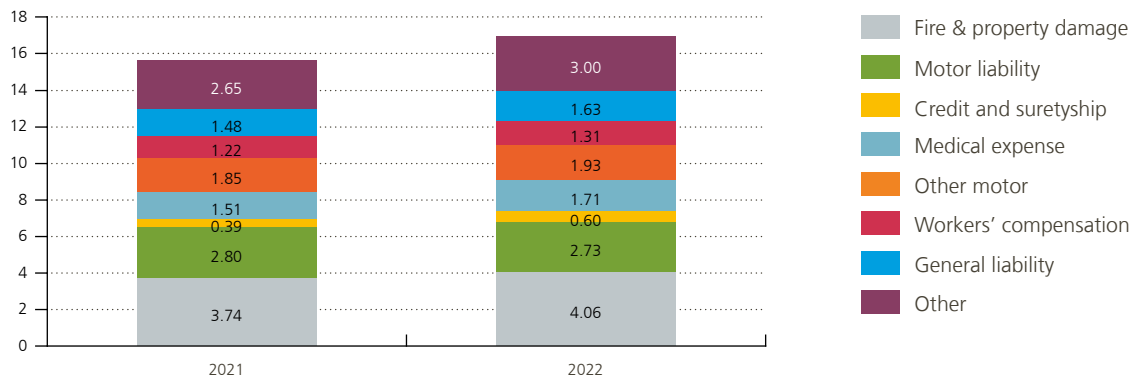
2 The combined ratio expresses the sum of the cost of claims plus operating expenses relative to net premium income.

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.

Chart 17

Breakdown of non-life insurance net written premiums

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

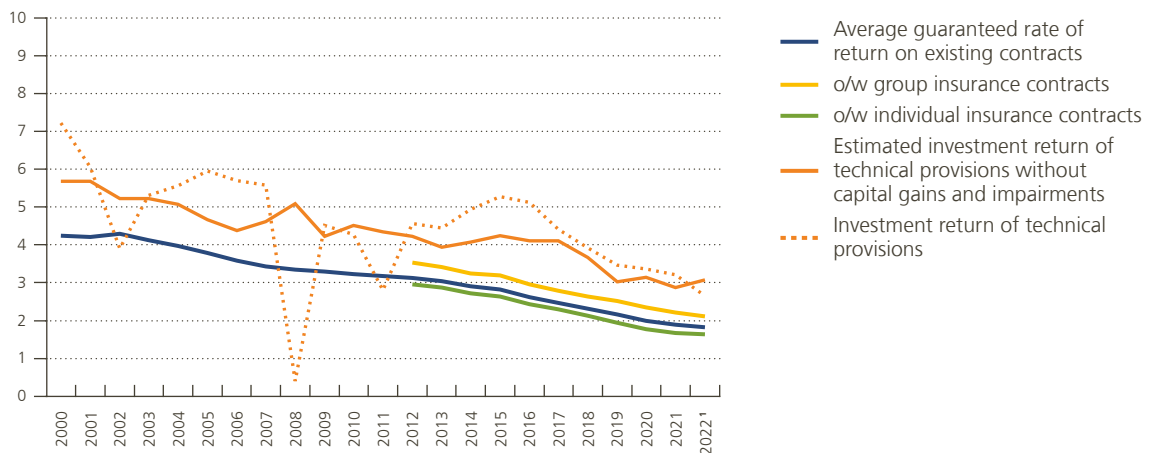


Source: NBB.

Chart 18

Life insurance guaranteed rates and investment returns

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



Source: NBB.

1 Provisional data.

Table 19

Investment return and average guaranteed return in life insurance

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

	2017	2018	2019	2020	2021	2022 ¹
Investment return of technical provisions covering guaranteed rate contracts (in %)	4.41	3.93	3.46	3.37	3.21	2.66
Estimated investment return of technical provisions without net impairments, net capital gains (in %)	4.11	3.67	3.02	3.14	2.88	3.07
Average guaranteed rate of return on existing contracts (in %)	2.47	2.31	2.16	2.00	1.89	1.83
■ group insurance	2.78	2.64	2.51	2.35	2.22	2.11
■ individual insurance	2.30	2.13	1.94	1.77	1.67	1.63
Yield gap	1.94	1.62	1.30	1.37	1.32	0.83
Flashing-light provision	7.5	7.5	7.4	7.6	7.2	n.
Flashing-light rate (in %)	1.00	0.74	0.49	0.33	0.25	n.

Source: NBB.

¹ Provisional data.

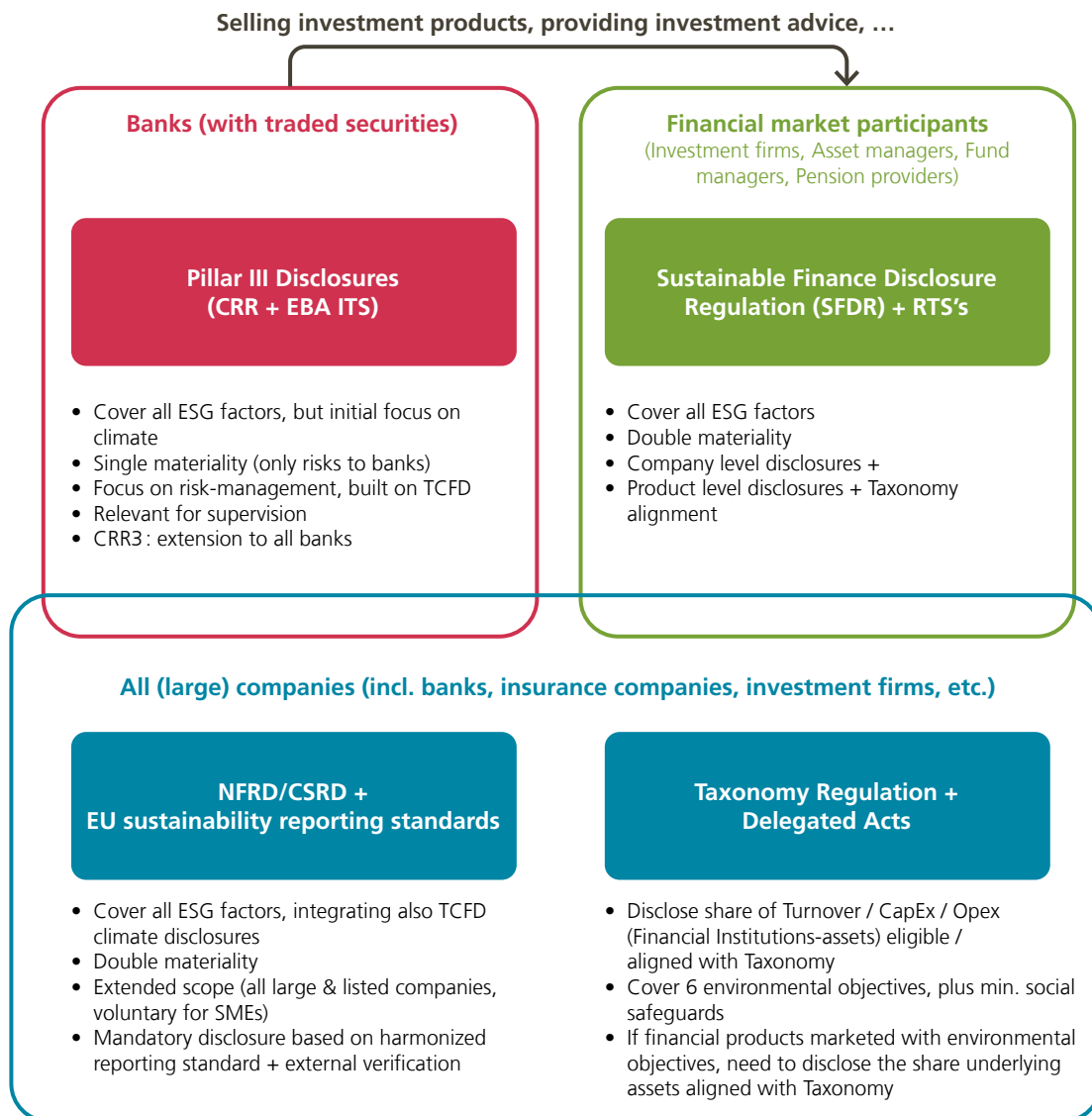
Thematic articles

Disclosure requirements on ESG risks and sustainability for financial institutions

Brenda Van Tendeloo

Disclosures are important to help stakeholders to better understand and compare an entity's business and risks and to enable an accurate assessment and pricing of climate-related risks and opportunities. The EU has several disclosure projects that are of relevance for financial institutions. This article gives an overview of the main initiatives that have an impact on the disclosure requirements of financial institutions regarding their

Chart 1



ESG (environmental, social and governance) risks, including climate-related risks, and sustainability. Figure 1 illustrates the various disclosure requirements within the EU. Figure 2 includes a timetable for the various disclosure requirements. Note that this schedule gives an indication of the year of disclosure. The disclosures typically cover the reporting period from the previous calendar year.

Non-Financial Reporting Directive/Corporate Sustainability Reporting Directive

One of the first disclosure initiatives that is going to be vital for financial institutions to gather sufficient data to be able to adequately assess their exposure to climate-related risks, and broader ESG risks, is the EU Corporate Sustainability Reporting Directive (CSRD), that is replacing the Non-Financial Reporting Directive (NFRD)¹. The NFRD and its supplement on climate-related information², which integrates the recommendations of the Financial Stability Board's Taskforce on Climate-related Financial Disclosures (TCFD)³, provide a starting point for some climate-related indicators. The NFRD is applicable to large public interest entities such as listed companies, banks and insurers with more than 500 employees⁴. For financial institutions, the availability of this information from their counterparties is crucial information to be able to assess their exposure to ESG risks. Up until now, the information disclosed has been rather scarce, partial and hardly comparable. Therefore, it was decided the NFRD should be revised to expand the scope and require the information to be disclosed to be mandatory, standardised, and audited to ensure quality, comparability, use and completeness.

To this end, the NFRD is replaced by the EU Corporate Sustainability Reporting Directive (CSRD), which was published in December 2022 and entered into force on 5 January 2023⁵. The CSRD requires undertakings within its scope to publish sustainability-related information according to Corporate Sustainability Reporting Standards developed by the European Financial Reporting Advisory Group (EFRAG). A first set of general sustainability standards should be adopted by June 2023. A proposal for these standards was published for public consultation on 29 April 2022, which were adapted and approved by EFRAG in November 2022. A second set, with additional sector specific standards, should be adopted by June 2024. The CSRD also requires undertakings to publish management and sustainability reports in electronic format.

The CSRD will apply to those undertakings that already fall within the scope of the NFRD as of financial years starting on or after 1 January 2024 (disclosure in 2025). From financial year 2025, the scope will be extended to other large undertakings⁶. From the 2026 financial year onwards, the CSRD shall apply to listed SMEs. By 30 June 2024, the European Commission is expected to adopt additional delegated acts specifying sustainability standards for those SMEs. These standards should be proportionate and relevant to the scale and complexity of SME business. Limited assurance is mandatory from the onset, possibly moving to reasonable assurance requirements, with more extensive audit checks over time. The Commission is expected to adopt assurance standards for reasonable assurance of sustainability information by 1 October 2028.

An important element for both the NFRD and CSRD is double materiality. This means that enterprises and institutions need to identify both the sustainability issues that have a financial impact on the business as well as their own impact on people and the environment.

1 Directive 2014/95/EU of 22 October 2014 amending Directive 2013/34/EU (Accounting Directive) as regards disclosure of non-financial and diversity information by certain large undertakings and groups, OJ L 330, 15 November 2014, 1–9.

2 European Commission, Communication, "Guidelines on Non-Financial Reporting: Supplement on Reporting Climate-Related Information", C(2019) 4490 final, 17 June 2019. This, in turn, is a supplement to the "Guidelines on Non-Financial Reporting" adopted by the Commission in 2017, C(2017) 4234 final, 26 June 2017.

3 TCFD, "Final Report, Recommendations of the Task Force on Climate-Related Financial Disclosures", June 2017.

4 The NFRD restricts the scope to all public interest entities with more than 500 employees. The Belgian Law of 3 September 2017 on disclosure of non-financial and diversity information by certain large companies and groups, transposing the NFRD, adds a further requirement for either total assets to exceed €17 million or total revenues to be more than €34 million.

5 Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No. 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting, 16 December 2022.

6 The scope under the CSRD is enlarged to all large companies meeting at least two out of following criteria: >250 employees, > €40 million turnover, >€20 million total assets.

Taxonomy Regulation

The EU taxonomy for sustainable finance, a classification system which defines specific characteristics and criteria for environmentally sustainable economic activities, is of course a key basis for the development of sustainable finance. It provides for a common language which could lead to higher demand for sustainable products, thereby boosting business opportunities for financial institutions. It may also facilitate financial institutions' engagement efforts and target-setting. In addition, the taxonomy is expected to bring consistency, transparency and comparability and therefore provide a mitigating factor against possible greenwashing. The EU Taxonomy Regulation¹ is implemented via a set of granular criteria for economic activities that determine whether they are sustainable. It covers six environmental objectives: (1) climate change mitigation, (2) climate change adaptation, (3) sustainable use and protection of water and marine resources, (4) transition to a circular economy, (5) pollution prevention and control, and (6) protection and restoration of biodiversity and ecosystems.

For an economic activity to be taxonomy-aligned, activities should make a substantive contribution to one of the six environmental objectives, do no significant harm to the other five objectives, and be carried out within the boundaries of social safeguards. The taxonomy focuses on those sectors and activities that have the potential to make a substantial contribution to one of the environmental objectives and are targeted for policy reform under the Green Deal. For each of those activities, technical screening criteria determine whether the activity is contributing to one of the environmental objectives and thus can be considered sustainable. Of course, not all activities that exist are incorporated into the taxonomy. If an activity is incorporated in the taxonomy, it is a taxonomy-eligible activity. If it then meets the technical screening criteria, it is also taxonomy-aligned. Technical screening criteria related to climate mitigation and climate adaptation are included in the Climate Delegated Act that is applicable since January 2022² and the Complementary Climate Delegated Act that is applicable since January 2023³.

Article 8 of the Taxonomy Regulation also includes a disclosure requirement that states that entities that are subject to the NFRD⁴, and later the CSRD, will have to disclose information on how and to what extent their activities are taxonomy-eligible and taxonomy-aligned. The European Commission published the Delegated Act on taxonomy disclosures in July 2021⁵, specifying the details of these required disclosures.

The three key performance indicators (KPIs) that have to be disclosed by large non-financial undertakings, together with some qualitative explanations and information regarding the contribution to the environmental criteria and the non-violation of the "Do No Significant Harm" criteria, are turnover, capital expenditure (CapEX) and operating expenses (OpEX). In 2022 (reporting period 2021), non-financial corporations only have to disclose the taxonomy-eligible part of these KPIs. As of 2023, these firms also have to indicate the proportion of these KPIs that is taxonomy-aligned.

The main indicator for credit institutions is the green asset ratio (GAR), which shows the proportion of taxonomy-aligned exposures to total assets. The GAR should relate to credit institutions' main lending and investment

1 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088.

2 European Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives.

3 EU Commission Delegated Regulation (EU) 2022/1214 of 9 March 2022 amending Delegated Regulation (EU) 2021/2139 as regards economic activities in certain energy sectors and Delegated Regulation (EU) 2021/2178 as regards specific public disclosures for those economic activities.

4 Financial institutions only need to report on the alignment of their activities with the taxonomy if they are required to publish a non-financial statement or consolidated non-financial statement according to Article 19a or Article 29a of Directive 2013/34/EU respectively.

5 European Commission Delegated Regulation (EU) 2021/2178 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by specifying the content and presentation of information to be disclosed by undertakings subject to Articles 19a or 29a of Directive 2013/34/EU concerning environmentally sustainable economic activities, and specifying the methodology to comply with that disclosure obligation, C(2021)4987 final, 6 July 2021.

business, including loans, advances and debt securities, as well as their equity holdings. The GAR reflects the extent to which credit institutions finance taxonomy-aligned activities. One key performance indicator for insurance companies relates to the investment policy for the funds collected from their underwriting activities and shows the share of taxonomy-aligned assets in their overall assets. A second indicator for insurers relates to the underwriting activities themselves and shows what proportion of the overall non-life insurance underwriting business is composed of non-life underwriting activities related to climate adaptation.

Financial institutions should disclose the proportion of their KPIs that are taxonomy-eligible for financial years 2021 and 2022. As of financial year 2023 (disclosure in 2024), they also have to disclose taxonomy-aligned KPIs. Financial institutions get an extra year to disclose taxonomy alignment because they need the information from their (non-financial) counterparties' disclosures. For the key performance indicators related to the trading book and commission and fees for other commercial services and activities than the provision of financing, credit institutions have been given extra time to disclose taxonomy alignment until 2026 (reporting date 31 December 2025).

These first disclosures relate to the climate objectives, for which the technical screening criteria are already applicable. A proposal for a delegated act with screening criteria for the 4 other environmental objectives, together with amendments for the Delegated Act on taxonomy disclosures, has been published for public consultation in April 2023.

Pillar 3 disclosures

The Pillar 3¹ disclosure requirements for financial institutions also include an obligation to disclose information on ESG risks. For credit institutions, a new mandate was included in Articles 434a and 449a CRR2, instructing the EBA to develop a technical standard for including ESG risks in the Pillar 3 disclosure requirements for credit institutions with traded securities. The EBA published a set of draft technical standards² for public consultation in March 2021 and the final Implementing Technical Standard was published in December 2022³.

The Pillar 3 disclosures include disclosures on climate-change-related transition and physical risks, including information on exposures to carbon-related assets (such as carbon footprints and Scope 3 emissions of institutions' portfolios, such as corporate loan portfolios) and assets subject to chronic and acute climate change events, and on institutions' mitigating actions supporting their counterparties. Information on mitigating actions is important to understand the positioning and strategies of institutions, and the ways in which they are helping their counterparties in the path towards sustainability, and thus helping them to mitigate their physical and transition risks. Among these mitigating actions, institutions are required to report their GAR, in line with the taxonomy disclosures.

Information on taxonomy alignment of counterparties that are not obliged to disclose non-financial information, such as SMEs, will most likely not be available. Should these counterparties disclose such information voluntarily, this information can potentially be included in the numerator of the GAR from 1 January 2026. By then, the Commission is expected to review implementation of the Regulation regarding SME exposures. However, all these exposures must be included in the denominator of the GAR from the start. As this may unduly underestimate

1 The prudential framework for credit institutions and (re)insurance companies covers three pillars: Pillar 1 – capital requirements; Pillar 2 – governance, risk management and supervision; and Pillar 3 – disclosure and reporting.

2 EBA, "Consultation Paper. Draft Implementing Standards on Prudential Disclosures on ESG Risks in Accordance with Article 449a CRR", EBA/CP/2021/06, March 2021.

3 EU Commission Implementing Regulation (EU) 2022/2453 of 30 November 2022 amending the implementing technical standards laid down in Implementing Regulation (EU) 2021/637 as regards the disclosure of environmental, social and governance risks, 19 December 2022.

the GAR, the EBA deemed it useful to require an additional indicator, called the banking book taxonomy alignment ratio or BTAR, allowing institutions to also include taxonomy alignment of counterparties that are not obliged to disclose information on taxonomy alignment according to NFRD/CSRD and the Taxonomy Regulation.

Pillar 3 disclosures on ESG need to be reported on an annual basis for the first year, and biannually thereafter. The first annual disclosure reference date should be 31 December 2022. In line with taxonomy disclosures, credit institutions will only have to publish information related to the GAR in 2024, with first disclosure reference dates 31 December 2023. Information regarding the BTAR will have to be disclosed as of 2025, with 31 December 2024 as the first reference date. Information on Scope 3 emissions of counterparties and sectoral Paris-alignment will have to be disclosed as of reference date 30 June 2024 at the latest. The draft of the new banking package (CRR3)¹ foresees that the requirements related to the disclosure of ESG risks is extended to all credit institutions.

On an international level, the BCBS is currently also contemplating introducing Pillar 3 disclosures on climate-related risks for banks. These should supplement the international sustainability standards that are being developed by the International Sustainability Standards Board (ISSB) for companies in general. The ISSB is working closely together with EFRAG to ensure alignment between the international sustainability standards and the European sustainability reporting standards.

Sustainable Finance Disclosure Regulation

Finally, the Sustainable Finance Disclosure Regulation (SFDR) relates to disclosure requirements for financial market participants, i.e. for investment activities for third parties or for investment advice². For financial institutions, this concerns only part of their activities, if any. According to the SFDR, financial market participants must disclose information about potential negative impacts on sustainability at the entity and product level, as well as how those products meet environmental or social goals. In addition, the Taxonomy Regulation stipulates that product disclosures under SFDR need to inform on the level of taxonomy alignment. So, information needs to be provided about taxonomy alignment and the Do No Significant Harm principle and Principle Adverse Impact³ disclosures need to be made on a “look-through” basis. The Disclosure Regulation came into force on 10 March 2021. However, the final Regulatory Technical Standards (RTS) that have been developed jointly by ESMA, EBA and EIOPA, and include the technical requirements regarding these disclosures, were not published until July 2022 and became applicable from 1 January 2023⁴. So, the ESAs had published an interim supervisory statement giving guidance on how to apply the Disclosure Regulation in the meantime⁵.

1 Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) No 575/2013 as regards requirements for credit risk, credit valuation adjustment risk, operational risk, market risk and the output floor, COM/2021/664 final.

2 Regulation (EU) 2019/2088 of 27 November 2019 on sustainability-related disclosures in the financial services sector, OJ L 317, 9 December 2019.

3 Principle Adverse Impact indicators are a set of mandatory indicators and metrics which aim to show financial market participants how certain types of investment pose sustainability risks.

4 Commission Delegated Regulation (EU) 2022/1288 of 6 April 2022 supplementing Regulation (EU) 2019/2088 of the European Parliament and of the Council with regard to regulatory technical standards specifying the details of the content and presentation of the information in relation to the principle of ‘do no significant harm’, specifying the content, methodologies and presentation of information in relation to sustainability indicators and adverse sustainability impacts, and the content and presentation of the information in relation to the promotion of environmental or social characteristics and sustainable investment objectives in pre-contractual documents, on websites and in periodic reports, OJ L 196, 25 July 2022.

5 Joint Committee of the ESAs, “Joint ESA Supervisory Statement on the Application of the Sustainable Finance Disclosure Regulation”, JC 2021 06, 25 February 2021.

Chart 2

Timetable disclosure dates

	Before 2022	2022	2023	2024	2025	2026	2027	...
NFRD/CSRD	NFRD				CSRD + EU Sustainability reporting Standards			
scope	Relevant Public Interest Entities-PIEs (Large listed undertakings, banks, insurance companies, ...) with > 500 FTEs					Relevant PIEs + all other large (non-listed) undertakings	Relevant PIEs + large non-listed undertakings + listed SMEs, small and non-complex FIs	
Taxonomy Regulation								
NFCs in scope NFRD/CSRD		% of Capex, Opex, turn-over from taxonomy eligible activities	• % of Capex, Opex, turnover from taxonomy- eligible activities and taxonomy- aligned activities					
Banks in scope NFRD/CSRD		% of Total assets from taxonomy eligible activities	• % of Total assets from taxonomy- eligible activities • Green Asset Ratio % of exposures related to taxonomy-aligned activities from lending and debt assets from firms covered by CSRD					% of commission and fee income from services other than providing finance from taxonomy aligned activities and GAR from trading activity
Insurance companies in scope NFRD/CSRD		• % of Total assets from taxonomy eligible activities (green Asset Ratio) • % of Total non-life insurance gross premiums written from taxonomy- eligible underwriting activities	• % of Total assets from taxonomy aligned activities • % of Total non-life insurance gross premiums written from taxonomy- aligned underwriting activities					
Pillar 3 Disclosures								
Banks with traded securities			Quantitative and Qualitative disclosure of ESG risks					
			Integration of Green Asset ratio					
			Integration of Banking Book Taxonomy Alignment Ratio (BTAR) (first reference 31/12/2024)					
			Scope 3 GHG emissions and sectoral Paris alignment metrics (first reference 30 June 2024)					
All banks					Extension of Pillar 3 to all banks (CRR3)			
SFDR			Disclosures for selling investment products and providing investment advice according to RTS					

Note: This schedule gives an indication of the year of disclosure. The disclosures typically cover the reporting period from the previous calendar year.

Conclusion

The aim of this article is to provide an overview of the various disclosure requirements on sustainability and ESG risks that are of relevance for financial institutions. The European Commission has also consulted on the establishment of a European single access point (ESAP) for financial and non-financial information that is publicly disclosed by companies¹. The ESAP will of course add to the availability and transparency of information and, together with the common taxonomy, a mandatory disclosure framework and sustainability reporting standards will most certainly contribute to closing the data gap on ESG risks. Improving data on ESG risks and sustainability is indispensable to be able to identify, assess and manage these risks as well as to support the transition to a more sustainable economy and society.

¹ European Commission, “Targeted Consultation Document: Establishment of a European Single Access Point (ESAP) for Financial and Non-Financial Information Publicly Disclosed by Companies, First Action of the Capital Markets Union Plan”, 20 January 2021, 19 p.

The use of energy performance as a risk indicator for real estate exposures of financial institutions

Kim Creminger
Brenda Van Tendeloo

Transition risks related to real estate exposures are among the main climate-related risks the Belgian financial sector faces. Financial institutions are therefore asked to take energy efficiency of their real estate exposures into account in their risk management and inform the Bank about energy efficiency standards for their new residential mortgages. This article sums up the progress recently made with collecting information from energy performance certificates (EPC) on new residential mortgage loans and looks at some of the lessons learned from this data collection and the role of energy efficiency in banks' risk management strategies.

Energy performance is an important risk indicator

There is a large consensus that more action is needed to meet the targets set by the Paris Agreement, aiming to keep global temperatures well below 2 °C above pre-industrial levels, and the EU's climate-neutrality ambitions by 2050, which are necessary to prevent major climate-related physical risks from materialising. The failure to cut global carbon emissions over the last few years means that limiting the temperature increase to 1.5 °C above pre-industrial levels is becoming very unlikely. The United Nations Environment Programme recently warned in its Emissions Gap Report 2022 that the world is currently on track for a temperature rise of between 2.4 °C and 2.6 °C by the end of this century¹.

In Belgium, improving the energy efficiency of the building stock seems to be an important avenue policymakers might want to follow to reduce greenhouse gas (GHG) emissions. As illustrated in Chart 1, buildings are among the main contributors to greenhouse gas emissions in Belgium (upper panel), and compared to other EU countries, Belgium is among the countries with the highest greenhouse gas intensity for heating and cooling of households (lower panel). As Reusens *et al.* pointed out in a recent article², the share of energy-efficient buildings in the Belgian residential real estate market is still very low. Policy measures such as imposing minimum energy efficiency standards or encouraging energy-saving renovations through energy or carbon taxes are therefore very plausible areas for action by the Belgian public authorities. According to Hans Bruyninckx, Director of the European Environment Agency, Belgium is one of the countries with the biggest policy gap with

1 UNEP (2022) The Closing Window, Climate crisis calls for rapid transformation of societies, 27 October 2022.

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

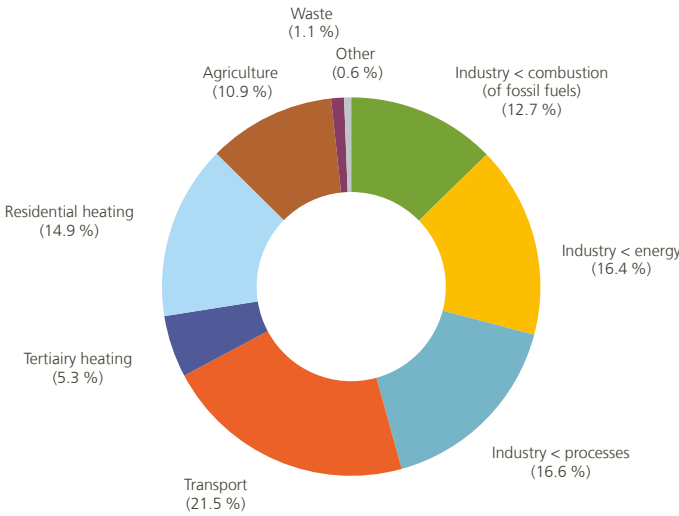
regard to the 55 % GHG reductions to be reached by 2030¹. Both the Belgian National Energy and Climate Plan 2021-2030 and Belgium's Long-term Low-Emission Development Strategy 2050 mention the building sector as one of the most important sectors for taking further measures to reduce GHG emissions in Belgium. Renovation of both public and private buildings has also been singled out as a key initiative to drive energy efficiency and deliver on climate objectives under the European Green Deal.

1 Hans Bruyninckx, Conference Fit For 55, Federal Public Service Health, Food Chain Safety and Environment, 6 October 2021.

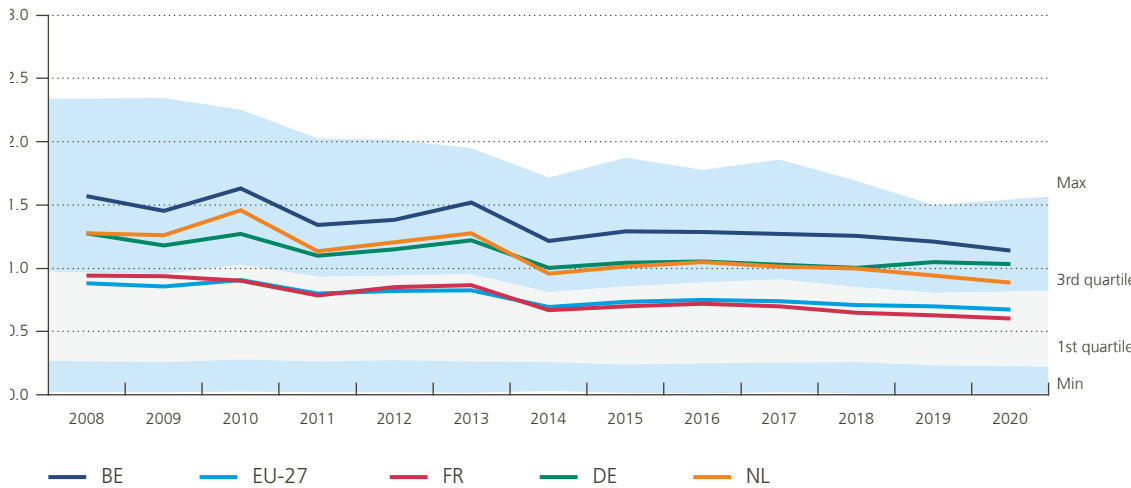
Chart 1

Contribution of buildings to greenhouse gas emissions in Belgium

Contribution to total emissions, by sector
In % of total emissions



Greenhouse gas intensity in Belgium and EU for households' heating and cooling
In tonnes of CO₂ equivalent per capita



Sources: Klimaat.be, Eurostat.

1 Banks did not need to report EPC labels for refinancings, since these are not real new loans.

2 Greenhouse gas intensity is expressed as the ratio of total emissions to gross value added (chain-linked volumes).

Potential policy measures include a carbon tax, which would tackle GHG emissions in all energy-intensive industries, as well as imposing or tightening minimum energy efficiency standards for buildings. In Flanders new building owners already need to renovate the property to at least a EPC-label D and in all three Regions, rent indexation is dependent on energy-efficiency. These announced measures however do not seem to sufficiently reflect long-term ambitions yet. The stated objective of getting to a label A for all buildings by 2050 is far from being achieved at this stage. Stricter measures in the form of minimum energy performance requirements in the short to medium term are therefore to be expected.

Besides, real estate constitutes a major exposure for Belgian financial institutions. Additional policy measures targeted at real estate might generate risks for financial stability. Stricter regulations such as imposing minimum energy efficiency requirements for buildings could affect the value of certain properties used as collateral for these loans. If the necessary adjustments are not made to meet the new standards, due to a lack of resources for the additional investment, inability to find a construction firm owing to high demand caused by the new measure, or simply because people are not willing to make the investment, the value of these energy-inefficient buildings could be severely affected. As regulation becomes stricter and energy prices remain a point of attention, people will become more aware of the relevance of energy performance, impacting the value of property even further. As shown in the paper of Reusens, Vastmans and Damen (2022), the price premium of energy efficient houses has already increased over the past decade. It is very likely it will have risen further due to the energy price surge in 2021-2022, and as people are becoming more and more aware of the importance of energy efficiency and its impact on energy costs, this price premium can be expected to grow. The value of an energy-inefficient house will as such become increasingly lower compared to the value of a comparable energy-efficient house. A lower value of buildings used as collateral for mortgage loans would mean that the loss incurred by financial institutions could increase if the counterparty defaults.

In addition, households or businesses residing in energy-intensive buildings could see their heating costs increase when energy prices rise, impacting their ability to repay mortgage debt. And, of course, stricter regulations requiring minimum energy performance levels of buildings could also force building owners to invest even more to bring their buildings up to standard. The worse the energy efficiency of the property, the larger the necessary investment. Both these elements could have a negative impact – at least temporarily for the second one – on the repayment capacity of mortgage-holders, therefore raising their probability of default.

The Bank calls on lenders to collect, report and use EPC information

Given the relevance of the energy performance as a risk indicator for transition risk and the resulting credit risk of financial institutions, the Bank published a Circular letter in December 2020 calling on financial institutions to gather data on energy performance of property for residential mortgages and corporate loans financing real estate or with real estate as collateral for all new exposures from 2021 and for existing exposures as of 2017, with a remaining LTV of more than 85 %, as well as for other commercial real estate exposures. The Circular also requires institutions to start reporting this data to the Bank for new residential mortgage loans as of 2021. Financial institutions are expected to analyse the transition risks related to their real estate exposures and to take this information regarding energy efficiency into account in their risk management.

Since then, different expectations and best practices regarding the collection, reporting and use of EPC information have also been set out in European and international legislation or other publications by supervisory authorities. A few examples are the best practices issued by the European Central Bank (ECB) following the thematic analysis in 2022¹, the report on ESG risk management and

¹ ECB Banking Supervision (2022), Good practices for climate-related and environmental risk management, observations from the 2022 thematic review, November 2022.

supervision¹, the Implementing Technical Standards (ITS) on Pillar 3 disclosures of ESG risks² and the Guidance on initiation and monitoring of loans published by the European Banking Authority (EBA), and the clarifications on the treatment of climate-related risks in the existing Pillar 1 framework³ that the Basel Committee on Banking Supervision (BCBS) has recently published in the form of FAQs⁴.

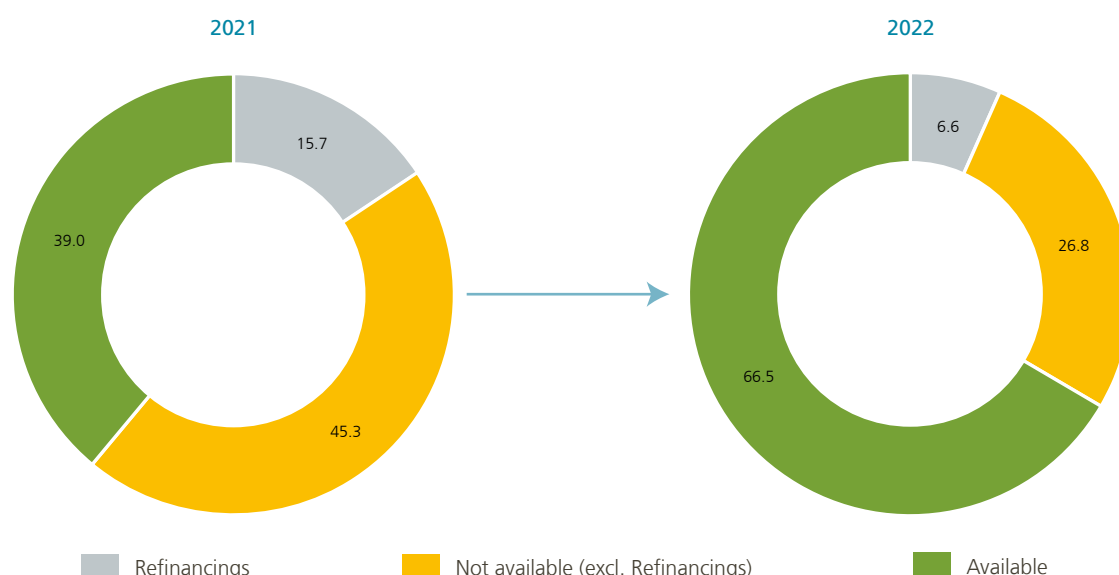
Data collected

Over the past year, Belgian banks have improved their data collection on the energy efficiency of collateral used in mortgage loans. While in 2021, banks had reported energy efficiency for 39 % of mortgages, this number has risen to 66.5 % in 2022 (Chart 2). This improvement in data availability is an important first step to meet the prudential expectations of taking energy efficiency into account in the banks' risk management.

Chart 2

Data availability¹ on energy efficiency of collateral in mortgage loans

(in % of total new production)



Source: NBB.

¹ Banks did not need to report EPC labels for refinancings, since these are not real new loans.

Looking at the breakdown of energy efficiency of new mortgage loans, the Belgian banking sector still has a large share of energy-inefficient buildings in its new production (Chart 3). As the energy performance ratings are not comparable across the Belgian Regions, the energy score, an indicator that specifies the primary energy

¹ EBA (2021), EBA Report on Management and supervision of ESG risks for credit institutions and investment firms, June 2021.

² Commission Implementing Regulation (EU) 2022/2453 of 30 November 2022 amending the implementing technical standards laid down in Implementing Regulation (EU) 2021/637 as regards the disclosure of environmental, social and governance risks.

³ EBA (2020), Guidelines on loan origination and monitoring, EBA/GL/2020/06, May 2020.

⁴ BCBS (2022), Frequently asked questions on climate-related financial risks, December 2022.

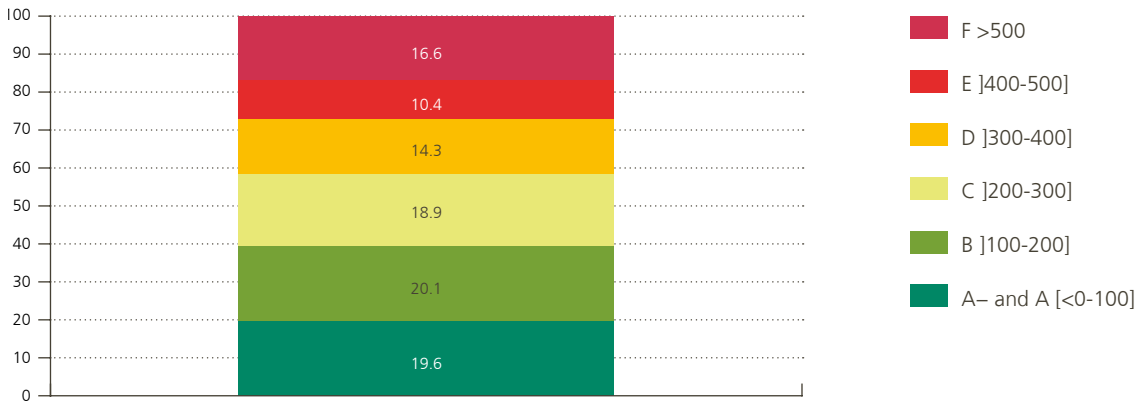
consumption per square metre of floor space (kWh/m²), has been extrapolated onto the Flanders *label*. This is also the rating used throughout this article.

Where 39.7 % of the new production was granted to energy efficient houses with a “green” EPC rating (A or B), more than 40 % of the new production of mortgages was for energy-inefficient houses with a EPC-label D, E or F. Given the Belgian banking sector’s considerable real estate exposures, this shows that the related transition risk might be sizeable.

Chart 3

EPC¹ breakdown of new mortgage loans for 2022

(in % of total new production)



Source: NBB.
1 EPC Classification according to Flanders’ label.

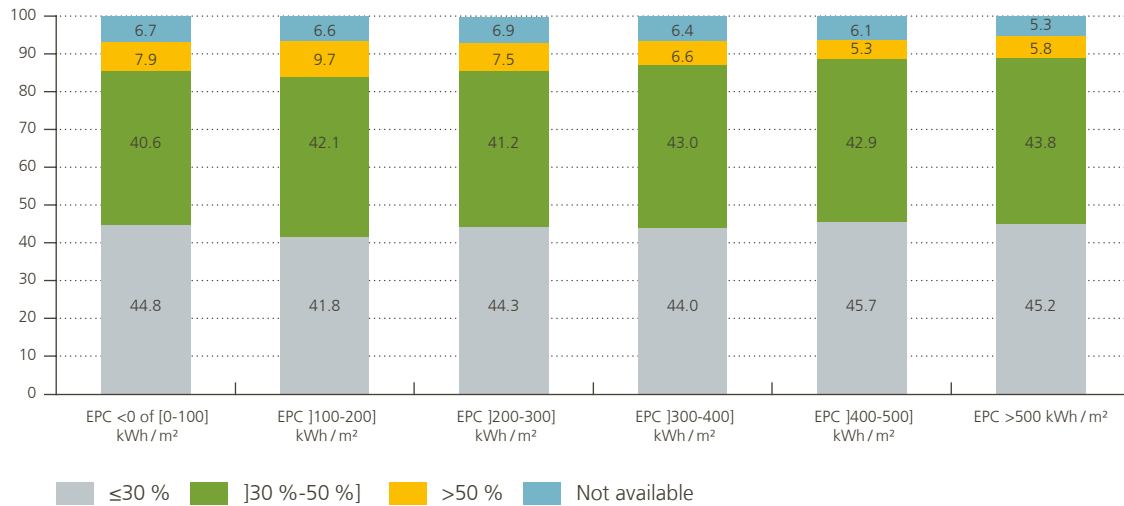
EPC reporting also includes information on creditworthiness indicators, in particular the loan-service-to-income ratio (LSTI) and the loan-to-value ratio (LTV). Those households with a higher loan compared to the value of their property and/or higher debt payments in relation to income could be doubly vulnerable if they also live in energy-inefficient houses, making them particularly exposed to higher energy prices or value losses. Analysis shows that loans for energy-inefficient residential buildings are issued relatively more to households with a higher LTV. A similar pattern is not observed, as sector level, as regards LSTI (see Chart 4). However, the negative correlation between EPC and LTV should be interpreted with caution as mortgage loans can also include an amount for (energy) renovation that is not (yet) reflected in the EPC-label at loan origination.

Chart 4

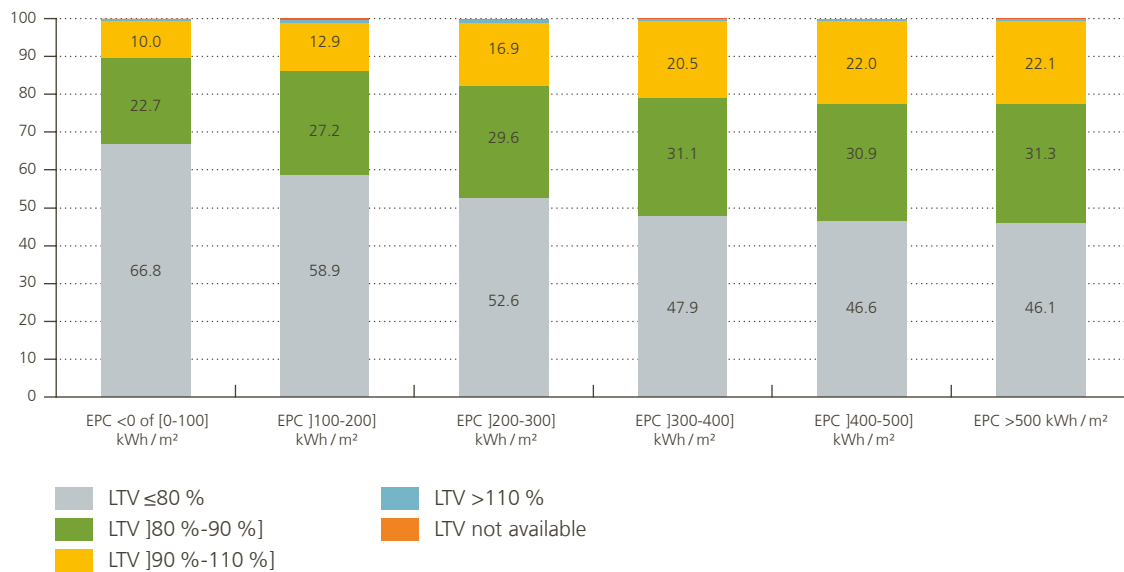
Cross-section of EPC¹ breakdown and LSTI and LTV ratios (at origination)

(in % of total new vintage by EPC label)

Breakdown of loan-service-to-income (LSTI) by EPC-label



Breakdown of loan-to-value (LTV) by EPC-label



Source: NBB.

¹ EPC classification according to Flanders' label.

Lessons learned and next steps

The NBB has organised a series of interviews with the reporting banks to gauge their experience with the EPC data collection efforts and interpretation of the data and to discuss the extent to which banks are integrating energy efficiency into their internal risk management.

Based on these interviews, the Bank gathered some important findings on the data collection and on further steps to take in the field of EPC reporting and the use of energy efficiency information in banks' risk management.

Banks should take further action to collect more EPC data for (new) mortgages

While the availability rate of data was at 66.5 % in 2022, this average conceals very large differences between individual banks. Banks should take further action to increase the availability of information about energy efficiency of their collateral. Where an EPC is required by law, financial institutions must have this certificate for new mortgage loans and take the necessary action to obtain it for the existing stock of loans. Despite the challenges related in particular to the lack of uniform methodology or market standard for gauging the energy efficiency of commercial real estate, banks should also improve data collection as regards investment loans and investment projects.

The NBB remains fully aware that access to the Regional EPC databases is crucial for the banking sector and therefore continues to support the sector in its efforts to gain access.

Banks need to take steps to integrate energy efficiency into their internal risk management

While most banks have already made considerable efforts to improve collection of EPC data for new mortgages, credit institutions seem less advanced on integrating energy efficiency into their internal risk management, for example, through the definition of a risk appetite framework concerning climate transition risk or through in-depth risk analyses based on information about energy efficiency.

It is important for banks to improve the integration of EPC information into their internal risk frameworks. Credit institutions should further develop their frameworks for risk monitoring and risk appetite in the field of energy efficiency and associated transition risks, by developing adequate internal concepts and tools to integrate energy efficiency into their overall risk management. To this end, banks could use the requested EPC data and other data about climate-related financial risks to conduct in-depth risk analysis.

The NBB has observed good practices concerning the definition of key performance indicators (KPI) and key risk indicators (KRI) in the field of energy efficiency and transition risk. To determine certain pockets of risk, various indicators related to creditworthiness were linked to these KPIs and KRIs. Frequent monitoring of these indicators and regular reporting to the relevant (risk) decision-making bodies enhances the risk awareness and risk profile of banks.

The ECB also included as good practice¹ an adequate integration of energy efficiency into bank's internal risk management and credit policy, so as to mitigate climate risk.

¹ ECB Banking Supervision (2022), Good practices for climate-related and environmental risk management, observations from the 2022 thematic review, November 2022.

Conclusions

Given the sizeable real estate exposures of the Belgian banking sector and the importance of energy efficiency in the transition to a carbon neutral economy, the NBB has asked financial institutions to collect data about energy efficiency of the collateral of new mortgage loans. The Belgian banking sector has a large exposure to energy-inefficient buildings through among others mortgage lending. Therefore, it is important for banks to take further action to improve availability of EPC data for real estate exposures. Moreover, banks also need to make further progress with integrating energy efficiency into their internal risk management. By using EPC data in their risk analysis, banks will be able to analyse the impact of transition risk on the valuation of collateral and repayment capacity of borrowers. This analysis should result in a refined and risk-based credit policy so that banks can contribute to the transition to a carbon-neutral economy.

From the input the NBB received from credit institutions, it appeared that most banks have already made considerable efforts to improve collection of EPC data for new mortgages but seemed less advanced on integrating energy efficiency into their internal risk management.

Statistical annex

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Table 1

Number of Belgian credit institutions

	2016	2017	2018	2019	2020	2021	2022
Credit institutions governed by Belgian law with Belgian majority shareholding	15	14	14	14	15	15	16
Credit institutions governed by Belgian law with foreign majority shareholding	19	19	18	17	16	15	14
EU Member States	12	12	11	9	8	7	6
Other States	7	7	7	8	8	8	8
Belgian branches of foreign credit institutions	56	54	56	54	51	51	49
EU Member States	48	46	48	48	45	45	44
Other States	8	8	8	6	6	6	5
Total	90	87	88	85	82	81	79

Source: NBB.

Table 2

Key figures

(data on consolidated basis)

	2015	2016	2017	2018	2019	2020	2021	2022
A. Large banking groups								
Balance sheet total (in € billion)	802.7	849.7	839.6	847.0	888.2	959.3	975.7	983.5
Customers' holdings (in € billion)	559.2	575.7	595.3	598.2	623.3	654.0	672.5	712.7
Loans and advances to customers (in € billion)	476.1	485.9	506.3	531.4	555.7	551.6	578.0	626.4
Risk asset ratio (in %)	17.8	17.5	17.8	17.7	17.6	19.2	19.8	19.1
Net after tax results (in € billion)	5.2	4.8	5.2	5.3	5.6	3.5	6.4	6.7
Return on average assets (in %)	0.6	0.6	0.6	0.6	0.6	0.4	0.6	0.7
Return on average equity (in %)	10.3	9.4	9.4	9.2	9.6	5.9	10.0	10.2
Cost-income ratio (in %) ¹	58.3	56.5	56.9	59.9	57.7	60.1	59.4	60.2
B. Total of Belgian credit institutions								
Balance sheet total (in € billion)	970.3	1 021.9	993.8	993.2	1 047.8	1 132.0	1 150.9	1 158.7
Customers' holdings (in € billion)	676.0	686.6	708.5	717.5	751.8	796.2	821.3	858.7
Loans and advances to customers (in € billion)	547.2	565.8	590.2	618.5	648.9	647.7	679.2	728.7
Risk asset ratio (in %)	18.7	18.8	19.0	18.8	18.8	20.3	20.4	20.1
Net after tax results (in € billion)	6.1	5.7	5.9	5.6	6.1	4.3	7.8	7.6
Return on average assets (in %)	0.6	0.6	0.6	0.5	0.6	0.4	0.7	0.7
Return on average equity (in %)	10.1	9.1	8.9	8.0	8.7	5.9	10.2	9.9
Cost-income ratio (in %) ¹	58.6	58.4	58.2	61.2	59.5	61.2	60.4	61.0

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 breach in the cost-income ratio.

Table 3

Belgian banks' funding structure and liquidity ratios

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

	2015	2016	2017	2018	2019	2020	2021	2022
Total liabilities	970	1 022	994	993	1 048	1 132	1 151	1 159
Deposits	702	725	736	745	797	884	917	915
Central banks	16	23	29	26	26	87	89	54
General governments	22	24	26	27	27	30	29	32
Credit institutions	82	105	89	85	95	70	69	69
Other financial corporations	93	76	85	79	85	93	93	98
Non-financial corporations	148	133	132	140	149	163	175	184
Household deposits	340	364	374	389	415	442	461	479
Debt securities issued	99	106	106	98	91	86	83	88
Certificates of deposits	25	35	40	30	23	14	12	18
Covered bonds	21	24	23	28	26	28	26	24
Other debt securities issued	52	48	43	40	42	43	45	46
Derivatives	72	67	49	43	51	53	39	54
Other liabilities¹	33	51	28	31	31	29	29	21
Equity	66	72	75	76	78	80	83	81
Liquidity coverage ratio (in %)	137	140	138	145	141	182	184	158
Net stable funding ratio (in %)							142	132
Customer loan-to-deposit ratio (in %)	90.8	94.9	95.5	97.5	95.9	89.0	89.6	92.0
Asset encumbrance ratio (in %)²	12.0	11.6	12.5	13.0	12.1	17.1	17.9	12.6

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 2015/779 (paragraphs 9-11 of Annex III).

Table 4

Main components of Belgian banks' income statement

(consolidated data, in € billion)

	2015	2016	2017	2018	2019	2020 ¹	2021	2022
Net interest income	14.87	14.82	14.11	14.41	14.62	14.19	14.35	15.30
Non-interest income	7.10	7.62	8.94	8.25	8.48	7.87	7.63	7.94
Net fee and commission income ²	5.87	5.63	5.62	5.58	5.57	5.59	6.43	6.55
(Un)realised gains or losses on financial instruments ³	1.17	1.50	0.86	1.22	0.53	0.01	0.56	0.80
Other non-interest income	0.06	0.50	2.46	1.46	2.39	2.27	0.64	0.59
Total operating income (bank product)	21.97	22.44	23.05	22.66	23.10	22.06	21.98	23.24
Total operating expenses	(-)	13.11	13.42	13.89	13.74	13.49	13.28	14.18
Staff expenses (excluding commissions paid to bank agents)	6.54	6.47	6.74	6.84	6.77	6.51	6.20	6.37
General and administrative expenses (including depreciation)	6.33	6.64	6.68	7.05	6.97	6.99	7.08	7.81
Gross operating result (before impairments and provisions)	9.10	9.33	9.63	8.81	9.36	8.57	8.71	9.06
Total impairments and provisions	(-)	1.76	0.67	0.83	1.26	3.12	0.23	1.11
Impairments on financial assets at amortised cost ⁴	1.15	0.90	0.41	0.61	1.05	2.77	0.19	0.84
Impairments on other financial assets	0.02	-0.04	-0.07	-0.01	0.01	0.02	0.00	-0.01
Other impairments and provisions	0.13	0.90	0.34	0.23	0.20	0.32	0.03	0.28
Other components of net operating income ⁵	0.24	0.37	0.29	0.26	0.25	0.50	1.78	1.99
Net operating income	8.04	7.94	9.25	8.20	8.35	5.96	10.25	9.94
Tax and extraordinary profit or loss	-1.22	-1.56	-2.64	-2.00	-1.78	-1.26	-2.02	-1.86
Total profit or loss on discontinued operations	-0.05	0.03	-	-	-	-	-	-
Net profit or loss including minority interest	6.76	6.41	6.61	6.20	6.57	4.70	8.23	8.08
p.m. Net profit or loss (bottom-line result)	6.14	5.75	5.95	5.60	6.12	4.26	7.76	7.62

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

	2015	2016	2017	2018	2019	2020	2021	2022
A. By the location of their registered office								
Belgium ¹	76	73	68	69	68	66	64	64
European Economic Area ²	43	45	46	46	45	37	34	35
Rest of the world ³	0	0	0	0	0	0	0	0
Total	119	118	114	115	113	103	98	99
Free service provision ⁴	970	999	917	1 095	1 118	1 123	961	768
B. By specialisation⁵								
Life insurance	21	22	20	16	16	14	12	11
Non-life insurance	72	70	67	72	71	64	62	64
Life and non-life insurance	24	24	25	24	24	23	21	22
Reinsurance companies	2	2	2	3	2	2	3	2
Total	119	118	114	115	113	103	98	99

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	285.4
All activities with the exception of class 23	229.2	229.6	228.2	236.8	246.1	249.8	252.1	242.0
Shares	13.3	13.5	14.1	14.3	15.5	16.5	19.4	19.7
Debt securities	171.1	171.4	169.2	168.1	174.7	174.2	172.2	164.6
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	13.9
Investments in affiliated undertakings	18.6	17.2	17.6	25.7	22.4	23.0	23.7	24.2
Others	12.5	13.0	11.8	12.3	14.2	15.9	16.9	17.5
Class 23	30.4	31.8	35.8	36.0	44.6	46.1	52.0	43.4
Shares	18.5	19.9	23.6	23.6	32.0	34.7	42.6	36.7
Debt securities	10.9	10.9	11.1	11.5	11.5	10.4	8.6	6.4
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	27.8
Claims and other assets	17.1	16.3	14.1	14.6	18.9	19.2	19.8	20.7
Total	286.1	284.9	284.4	293.5	319.3	332.1	346.3	333.9

Source: NBB.

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

2 Provisional data.

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	23.1
Technical provisions	242.6	243.4	245.1	243.7	262.3	269.7	277.6	264.4
Life insurance (with the exception of class 23)	175.3	173.5	171.9	170.6	172.2	170.9	169.5	159.4
Class 23	30.5	31.8	35.8	36.0	44.6	46.1	52.0	43.4
Non-life insurance	28.5	29.4	28.8	28.5	34.0	40.9	43.5	47.7
Others	8.3	8.8	8.6	8.6	11.4	11.8	12.7	13.8
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	31.6
Other liabilities	2.6	3.5	2.9	4.2	4.4	5.0	6.5	5.6
Total	286.1	284.9	284.4	293.6	319.3	332.1	346.3	333.9

Source: NBB.

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

2 Provisional data.

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	13.2
Claims paid	(-)	19.7	17.6	16.7	17.1	18.0	17.5	16.0
Change in the provisions for claims	(-)	2.0	1.4	0.6	-6.4	-0.6	-5.4	8.8
■ all life insurance classes excluding class 23	1.4	0.6	0.2	3.0	-10.7	-1.2	-9.8	16.1
■ adjustments on class 23	0.6	0.7	1.1	-2.4	4.3	0.6	4.4	-7.3
Premiums after insurance costs	-6.6	-5.7	-4.4	-0.8	-7.3	-3.3	-6.7	6.0
Net operating expenses	1.7	1.6	1.7	1.7	1.7	1.8	1.8	1.6
Result before investment income	-8.3	-7.3	-6.1	-2.5	-9.0	-5.1	-8.5	4.4
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	4.3
■ adjustments on class 23	0.6	0.7	1.1	-2.4	4.3	0.6	4.4	-7.3
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	7.8	8.1	9.7	9.4	10.9	11.9
Change in the provisions for claims	(-)	0.7	0.5	-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	2.7
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	3.7
<i>p.m. Return on equity (in %)</i>	8.2	9.8	17.6	16.4	10.3	11.4	11.3	16.1

Source: NBB.

¹ Large changes in 2018 and 2019 are mainly attributable to the inclusion of new companies in the reporting scope.² Provisional data.

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