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Introduction

After more than a decade of historically low interest rates, the euro area experienced the sharpest monetary tightening in its 25-year history, in response to the highest inflation rate recorded since the creation of the economic and monetary union. Reacting to the post-pandemic inflationary pressures that emerged in 2021 and intensified after Russia's invasion of Ukraine in February 2022, the ECB began raising its policy rates at an unprecedented pace in July 2022. High inflation and negative real rates persisted at first, but real interest rates began to rise in late 2022 and turned positive in 2023, setting in motion the broader economic consequences of this policy shift.

This article presents a helicopter view of how key areas of the Belgian economy navigated the combined challenge of an inflationary shock and a rapid rise in interest rates. As previous studies (Boeckx *et al.*, 2018) have shown, interest rate increases have a heterogeneous impact on different segments of the economy. The effect of monetary policy decisions depends not only on the structural characteristics of each institutional sector but also on past economic conditions, such as the long period of very low interest rates. The scale of the inflationary shock and the subsequent reversal of the monetary policy stance, as well as the pace and manner of transmission of these events to banks, public finances, households and firms, served as the impetus for this article. By leveraging data that have since become available,¹ the analysis presented here aims to shed new light on the key developments that have shaped the Belgian economy following the events of 2022. One of the most salient findings in this regard is the resilience it has demonstrated, as evidenced in particular by the fact that a recession could be avoided despite the significant rise in production costs.

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¹ The analysis presented in this article reflects the data available at the time of writing.

This article is structured as follows. Section 1 looks back at inflation dynamics in the euro area during the period in question and the associated monetary policy decisions. Section 2 analyses the pass-through of policy rate increases to bank funding, lending and deposit rates. Among other things, Section 3 helps to distinguish between the effects of price changes and those brought about by monetary policy on recent macroeconomic developments, using a macroeconomic model developed by the NBB.² Section 4 assesses the impact of inflation and monetary policy tightening on public finances. Section 5 focuses on household responses, particularly their financial decisions, as well as the impact on the housing market and inequalities across the population of Belgian households stemming from the inflationary shock and interest rate rises. Section 6 presents an assessment of developments in the non-financial corporate sector. The main findings are summarised in the conclusion.

1. Inflation dynamics and the monetary policy response

As the post-pandemic recovery in demand came up against persistent supply constraints and energy price shocks, euro area inflation rose to record levels, reaching a historic peak of nearly 11% in October 2022. Inflationary pressures had been building since 2021 in the context of the post-Covid-19 recovery. These pressures were the result of a marked misalignment between supply and demand: freed from the constraints of the pandemic-era lockdowns, demand rose to impressive levels but was stymied by supply bottlenecks across global production chains due to the uncoordinated re-opening of economies around the world. The global recovery in demand also translated into tensions on the energy markets, with wholesale gas prices in Europe quintupling in 2021.³

The ECB did not immediately react to what was primarily perceived as an imported commodity price shock, mainly driven by natural gas prices. The markets initially anticipated that the shock would be short-lived, as illustrated in Figure 1. It should be noted here that the pass-through of commodity prices to consumption prices is generally considered to be incomplete and to occur with a time lag. Furthermore, it is not easy to determine if and when a central bank should react to imported inflation. The policy instruments at its disposal cannot be used to treat the root cause of the problem; they can, however, be employed to curb domestic demand, which is not an easy decision when the economy is suffering from a terms-of-trade shock. In this context, policymakers may prefer to refrain from raising policy rates for as long as possible and may decide to do so only if the imported price shock proves both persistent and large enough to spread across the entire price chain, potentially triggering a wage-price spiral.⁴

In late 2021, core inflation rose above 2% and was approaching 6% by the start of 2023. In February 2022, Russia's invasion of Ukraine sent a signal to the energy markets that the observed shock might last longer than initially expected. At the same time, the acceleration in inflation began to affect wage formation.⁵ Year-on-year core inflation (i.e. the Harmonised Index of Consumer Prices (HICP) which excludes volatile components such as energy and food) crossed the 2% threshold at the end of 2021 (see Figure 2) and settled firmly above it in 2023.

2 The Belgian economy in a macro-general international equilibrium (BEMGIE) model is described in detail in de Walque *et al.* (2023). BEMGIE is a New Keynesian model that provides a robust representation of trade and financial relations between Belgium, the euro area, the United States and the rest of the world.

3 Unlike oil, which is traded on a global market, natural gas is a commodity traded on a more regional basis since it is (and was) largely dependent on fixed infrastructure (gas pipelines). This explains the marked differences observed with respect to gas prices on either side of the Atlantic.

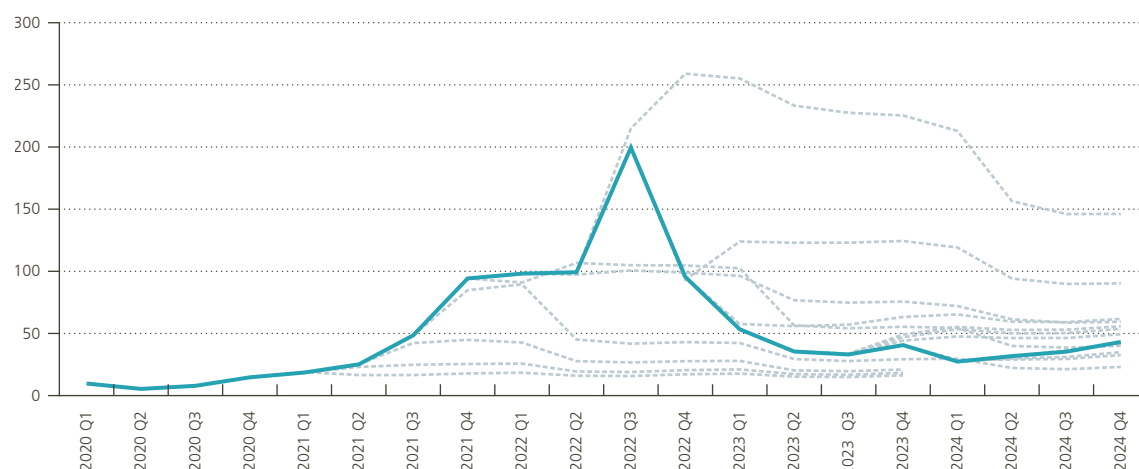
4 For more information on the associated risks when monetary policy “looks through” supply shocks, see European Central Bank (2025b).

5 It is worth noting that this happens quite rapidly in Belgium due to the country's system of automatic wage indexation (see also Section 5). In the rest of the euro area, transmission is delayed through (staggered) wage negotiations. Jonckheere and Zimmer (2024) explain the significance of wage-price dynamics for monetary policy.

Figure 1

Natural gas price: spot prices and market expectations¹

(Dutch TTF, quarterly averages, €/MWh)



Source: LSEG.

¹ The Dutch Title Transfer Facility (TTF) is a virtual trading hub for natural gas in the Netherlands which serves as the benchmark for gas prices in Europe. The spot price is represented by the solid blue line; the dotted grey lines show market expectations (expressed on the date corresponding to that on which they intersect the solid blue line).

Faced with persistent inflation, the ECB gradually shifted from scaling back asset purchases to raising policy rates, by a total of 450 basis points between mid-2022 and late 2023. In December 2021, the ECB announced that it was scaling back the pace of its asset purchase programme (APP) and putting an end to net asset purchases under the Pandemic Emergency Purchase Programme (PEPP). Through the gradual withdrawal of these unconventional monetary policy measures, the ECB eased the downward pressure on long-term interest rates, as shown in Figure 3 (left-hand graph) by the rise in the ten-year risk-free rate from the end of 2021. In June 2022, as core inflation accelerated towards 4%, the ECB Governing Council decided to end net asset purchases under the APP as of 1 July and signalled that interest rates would be raised.⁶ These hikes brought the main policy rate – the deposit facility rate – to 4% in September 2023 (Figure 3, right-hand graph). It remained at that level for several months, as the Governing Council considered that a sufficiently restrictive level⁷ of interest rates was still necessary to ensure a sustainable return of inflation to its medium-term target of 2%.

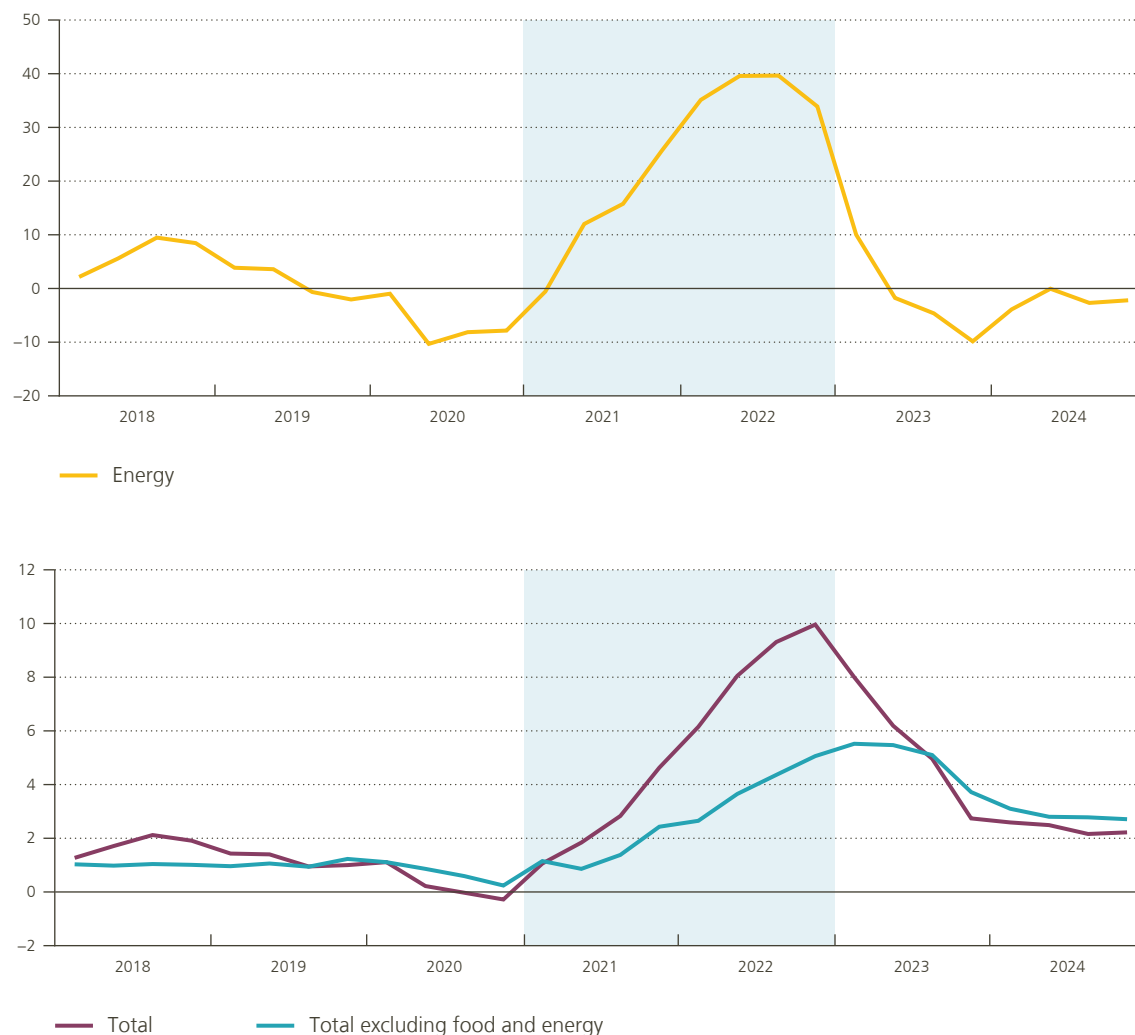
⁶ Interest rates are the main tool used by the ECB to keep inflation and inflation expectations at a “symmetric 2% target over the medium term”. In an environment characterised by significant excess liquidity, the deposit facility rate (DFR) is the main interest rate through which the ECB can affect overall financial conditions, including interest rates of varying maturities (the yield curve) through forward guidance (see Boeckx *et al.*, 2025). In October 2014, the ECB launched an asset purchase programme (APP) to push down long-term interest rates at a time when the DFR was already in negative territory and close to its effective lower bound.

⁷ On 8 September 2022, the ECB indicated that “[t]he Governing Council today decided to raise the three key ECB interest rates by 75 basis points. This major step frontloads the transition from the prevailing highly accommodative level of policy rates towards levels that will ensure the timely return of inflation to the ECB’s 2% medium-term target”.

Figure 2

Euro area inflation rate for certain categories of goods

(HICP, quarterly averages, annual rate of change)



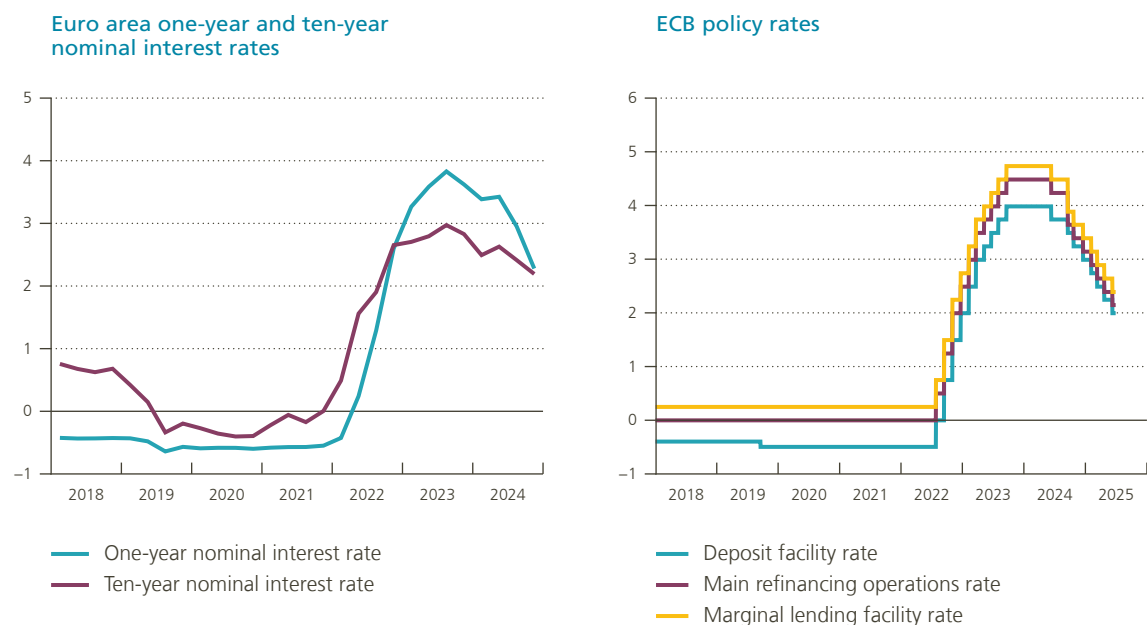
Source: FPS Economy.

By acting forcefully, the ECB helped to ensure that long-term inflation expectations remained anchored at the 2% target. These actions should be seen as a bitter pill intended to keep a more serious illness at bay, namely a prolonged period of high inflation that could contaminate inflation expectations. Market-based measures and surveys of professional forecasters showed that longer-term inflation expectations remained anchored during the inflationary surge, although shorter-term expectations were more volatile (see De Backer *et al.*, 2023). Such anchoring is key to absorbing an inflationary shock and avoiding excessive second-round effects. When households and firms believe that inflation will return to target, wages and prices are less likely to be adjusted in anticipation of persistently high inflation. This prevents the emergence of a wage-price spiral, limits the pass-through of temporary shocks to broader price-setting behaviour, and reduces the persistence of inflationary pressures. In turn, it allows monetary policy to bring inflation back to target more swiftly and at a lower economic cost.

Figure 3

Euro area short-term and long-term interest rates and ECB main policy rates¹

(%)



Source: ECB.

1 The one-year and ten-year rates are risk-free rates approximated using overnight €STR indexed swap (OIS) rates. They are expressed as quarterly averages.

Evidence from real interest rates and Taylor rule estimates shows that the ECB's monetary policy stance remained highly accommodative until late 2022. Assessing the monetary policy stance⁸ is quite challenging, and any indicator used is subject to substantial uncertainty. First, the real interest rate, calculated as the nominal rate corrected for expected inflation (see Figure 4, left-hand graph) provides a rough assessment. The lower the real rate, the more accommodative the monetary policy. According to this measure, monetary policy remained very accommodative in 2021. It took a few months before the sharp rise in policy rates that began in mid-2022 stabilised the real cost of borrowing due to the concomitant increase in inflation expectations. It was only in the last quarter of 2022 and the first quarter of 2023 that, respectively, long-term and short-term real rates entered positive territory.⁹ Second, a Taylor rule analysis yields a very similar assessment of the (accommodative) initial monetary policy stance (see Figure 4, right-hand graph). The Taylor rule is used to estimate the systematic reaction of a central bank's policy rate to a change in economic conditions, summarised by inflation and the output gap. For instance, if inflation is above target or the economy is overheating (a positive output gap), the Taylor rule provides that interest rates should increase. BEMGIE, the National Bank of Belgium's New Keynesian macroeconomic model, incorporates such a rule for the ECB (see also Section 3). Negative (or positive) deviations of the policy rate from the Taylor rule can then be interpreted as indicating monetary policy that is more (or less) accommodative than that historically observed under similar conditions. According to this estimation, the ECB's monetary policy remained accommodative until the fourth quarter of 2022. From that time on, the policy

8 According to the ECB, "the assessment of the monetary policy stance determines whether monetary policy is contributing to economic, financial and monetary developments in a way that maintains price stability over the medium term".

9 We acknowledge that focusing on the real interest rate is a bit simplistic. This measure should actually be compared with r^* , the unobserved real interest rate that would prevail in a hypothetical counterfactual economy growing at potential and with stable inflation. This concept is however quite difficult to measure, is model- and assumption-dependent and subject to a non-negligible degree of uncertainty. For example, Christensen and Mouabbi (2025) give several r^* estimates for the euro area in their study. For the period covered by Figure 4 (left-hand graph), these measures range from -1.5% to 0.7%, i.e. above the real rate before 2022 and below it from 2023 onwards, meaning the result remains the same as in our simplistic interpretation, i.e. r^* is zero.

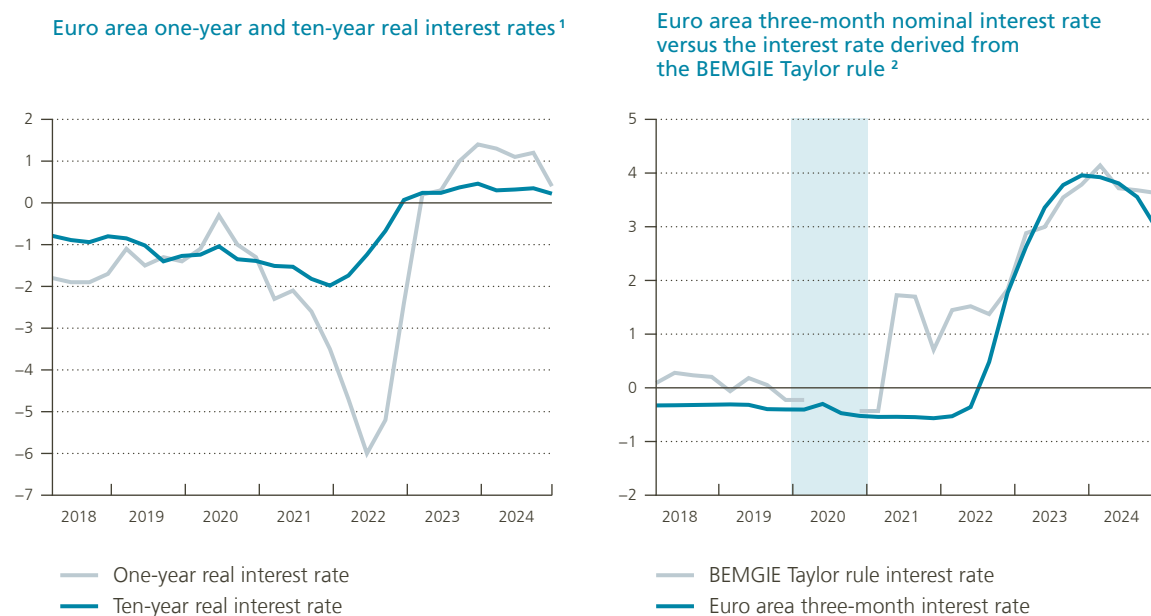
rate was roughly aligned with its estimated historical average, as confirmed by the ECB's latest monetary policy strategy review (European Central Bank, 2025b): the financial markets initially perceived the ECB's response to the 2021-23 inflationary surge to be less pronounced than in the past but to be realigned with its historical pattern as from the third quarter of 2022.¹⁰

With inflation easing and expectations remaining anchored, the ECB gradually reduced its policy rate. As the ECB's inflation projections stabilised across successive Governing Council meetings and inflation expectations indicated that economic agents continued to believe in the ECB's price stability objective, the Governing Council proceeded with a first rate cut in June 2024. With disinflation becoming more entrenched, several further rate cuts followed, the most recent in June 2025, bringing the deposit facility rate down to 2%.

Figure 4

Assessment of the monetary policy stance

(%)



Sources: Bloomberg, ECB, LSEG, NBB, own calculations.

1 (Risk-free) real rates are approximated using overnight €STR indexed swap (OIS) rates. Inflation compensation is measured by inflation-linked swap (ILS) rates.

2 The BEMGIE Taylor rule in a simplified linear form can be expressed as

$$r_t = \rho \cdot r_{t-1} + (1 - \rho) \cdot (\varphi_\pi \cdot \pi_t + \varphi_y \cdot \tilde{y}_t + \varphi_{\Delta y} \cdot \Delta \tilde{y}_t) + \varepsilon_t^r$$

where r_t is the nominal short-term interest rate, π_t denotes inflation relative to its steady-state level, $\tilde{y}_t$ is the output gap defined as the deviation of actual output from potential output, and $\Delta \tilde{y}_t$ is the growth gap, i.e. the difference between actual and potential output growth. Finally, ε_t^r represents an exogenous monetary policy shock, i.e. a deviation from estimated historical behaviour. ρ stands for the sluggishness of the policy rate reaction, φ_π governs the response of the policy rate to inflation, φ_y measures sensitivity to the level of the output gap, and $\varphi_{\Delta y}$ captures the reaction to the deviation in output growth from its potential. For the Covid-19 period, huge movements in GDP and the output gap make the BEMGIE Taylor rule unsuitable for policy analysis. Thus, it is not displayed for 2020. For more information, including parameter estimates, see de Walque *et al.* (2023).

¹⁰ Using the Bobeica and Jarocinski (2019) time varying estimation method for the Taylor rule, the European Central Bank (2025b) found that between the third quarter of 2023 and the second quarter of 2024, its response to inflation was “more aggressive than at any time in the last two decades”.

In summary, the ECB kept its monetary policy highly accommodative until mid-2022 and only thereafter managed to raise real financing costs to broadly neutral or somewhat restrictive levels. Pandemic-related measures, such as the PEPP, led to an extremely accommodative monetary policy stance throughout 2020 and likely supported inflation by keeping funding costs across the economy low for an extended period. Monetary policy remained very supportive of the real economy from 2021 through 2022, when the euro area was severely hit by a terms-of-trade shock. When the initial shock turned out to be more persistent than expected and contaminated wage formation, the monetary authorities sharply raised policy rates. This translated into higher real funding costs, i.e. adjusted for expected inflation, primarily beginning in 2023. Until then, the economy had suffered from inflation rather than higher interest rates. The consequences of the change in the monetary policy stance then rippled throughout the economy, starting with the banking sector.

2. The transmission of monetary policy tightening through the banking sector

This section looks at how banks' marginal funding costs evolved during the tightening phase and the pass-through of these changes to new business rates.¹¹ It also highlights the implications for banks' net interest income.¹²

2.1 Changes in banks' marginal funding costs

Banks' marginal funding costs remained exceptionally low until the end of 2021, reflecting the ECB's prolonged accommodative monetary policy stance. We follow the ECB's approach to measure changes in bank funding conditions (see, for example, European Central Bank, 2025a). The marginal funding cost corresponds to the average interest rate banks would incur if they had to roll over their liabilities at current new business rates¹³ (Box 1). In both Belgium and the euro area, this composite indicator hovered near zero for several years, reflecting abundant liquidity and a persistently low interest rate environment. However, in early 2022, it began to rise and, by late 2023, stood at around 1.5% in Belgium and 2.3% in the euro area (see Figure 5). This rise marked a significant shift in the funding environment for banks.

The rise in banks' marginal funding costs in early 2022 was initially driven by changes in market rates. This indicator is particularly sensitive to movements in market interest rates, as two of its components are covered bonds and interbank borrowings. Covered bond yields tend to closely follow long-term risk-free rates, which began to rise early in the monetary policy normalisation phase – even before policy rates were raised – as the markets responded to the ECB's reduction in net asset purchases (announced in December 2021) and revised their expectations as to future monetary tightening (see Section 1). Interbank rates – which underpin short-term market funding – responded rapidly to successive ECB rate hikes, adjusting in line with the rise in policy rates. These rates contributed to the increase in marginal funding costs from mid-2022, as shown by the yellow area in Figure 6. The decomposition method is explained in Box 1.

11 New business is defined as all new agreements between banks and their customers. New agreements are financial contracts that specify, for the first time, the interest rate applicable to a deposit or loan as well as newly negotiated terms and conditions for existing loans and deposits.

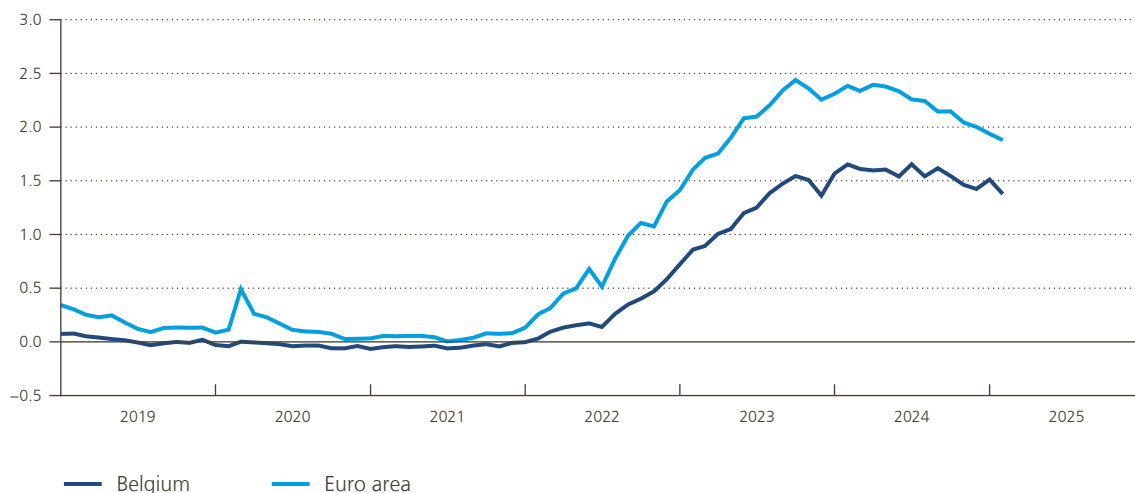
12 This analysis centres on banks' funding costs in the transmission of monetary policy. An alternative approach would be to focus on another driver – the shape of the yield curve – by analysing how changes in risk-free rates for different maturities are transmitted to new lending rates. An in-depth study of all factors contributing to the change in bank net interest income and profitability falls outside the scope of this article (see NBB Financial Stability Report, 2024 and 2025).

13 The marginal funding cost reflects the average interest rate banks would pay if they rolled over their liabilities at current new business rates. However, this indicator is subject to some limitations, particularly in relation to the use of long-term funding instruments such as covered bonds. The average funding cost, based on outstanding rates weighted by outstanding volumes, would provide a more accurate measure of banks' interest expense but cannot be implemented due to data limitations.

Figure 5

Marginal funding costs for banks in Belgium and the euro area¹

(%)



Sources: Bloomberg, CSDB, ECB, LSEG, own calculations.

1 The interest rate banks would pay if they immediately rolled over their entire stock of liabilities at current new business rates.

BOX 1

Calculation and decomposition of banks' marginal funding costs

The marginal funding cost¹ (MFC) encompasses the three main sources of bank funding: customer deposits,² covered bonds and interbank borrowings.³ It is determined by calculating the weighted average new interest rate on these components (i.e. the interest rates applicable to new funding agreements), based on their share of outstanding amounts, and is updated monthly to capture changes in funding composition:

$$MFC = \sum_i w_{i,t} r_{i,t}$$

where $r_{i,t}$ is the new business rate for funding instrument i at time t and $w_{i,t}$ is its share in the bank's total private funding based on the corresponding outstanding amounts at time t .

1 We follow the methodology used by the ECB. We thank Cyril Couaillier, Francesca Barbiero and Franziska Maruhn for their insight into this methodology.

2 Overnight deposits, deposits redeemable at notice and deposits with an agreed maturity.

3 For Belgian covered bonds, yields and weights are sourced from Bloomberg and BSI data for the period running until the end of 2021 and from CSDB microdata thereafter. For euro area covered bonds, the iBoxx Eur Bank index is used, with weights from the BSI. For interbank funding, ESTR (EONIA) is used as a proxy for money market rates, with weights derived from BSI data. Deposit rates are obtained from the MIR statistics, with weights from the BSI.

The change in the MFC can be broken down into an interest rate effect and a structure effect, in accordance with the methodology developed by Berthier (2002). The structure effect refers to how the composition of the bank's funding sources influences the cost of funds.

Between two dates, the change in marginal funding costs is defined as:

$$V = MFC_{date\ 2} - MFC_{date\ 1}$$

The contribution of each component i to V , denoted by C_i , is given by:

$$C_i = w_{i, date\ 2}(r_{i, date\ 2} - MFC) - w_{i, date\ 1}(r_{i, date\ 1} - MFC)$$

with
$$MFC = \frac{1}{2}(MFC_{date\ 1} + MFC_{date\ 2})$$

This can be rewritten as:

$$C_i = \frac{1}{2}(w_{i, date\ 1} + w_{i, date\ 2})(r_{i, date\ 2} - r_{i, date\ 1}) + (w_{i, date\ 2} - w_{i, date\ 1})(r_i - MFC)$$

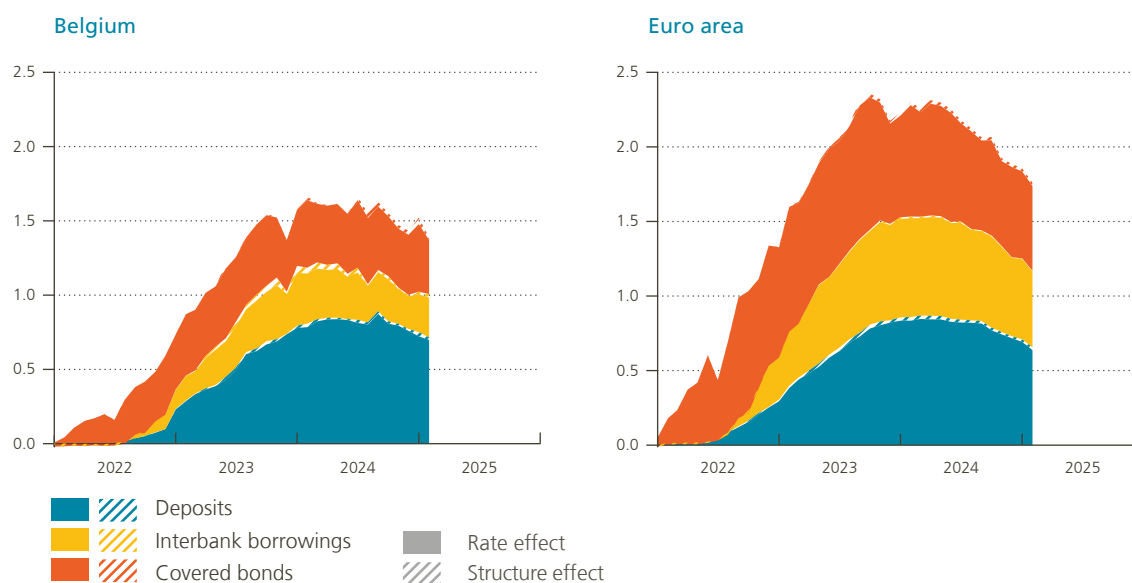
with
$$r_i = \frac{1}{2}(r_{i, date\ 1} + r_{i, date\ 2})$$

The first term represents the rate effect, while the second term captures the structure effect. The sum of these two effects yields the total change, V , in the MFC.

Figure 6

Breakdown of the change in banks' marginal funding costs

(in percentage points)



Sources: Bloomberg, CSDB, ECB, LSEG, own calculations.

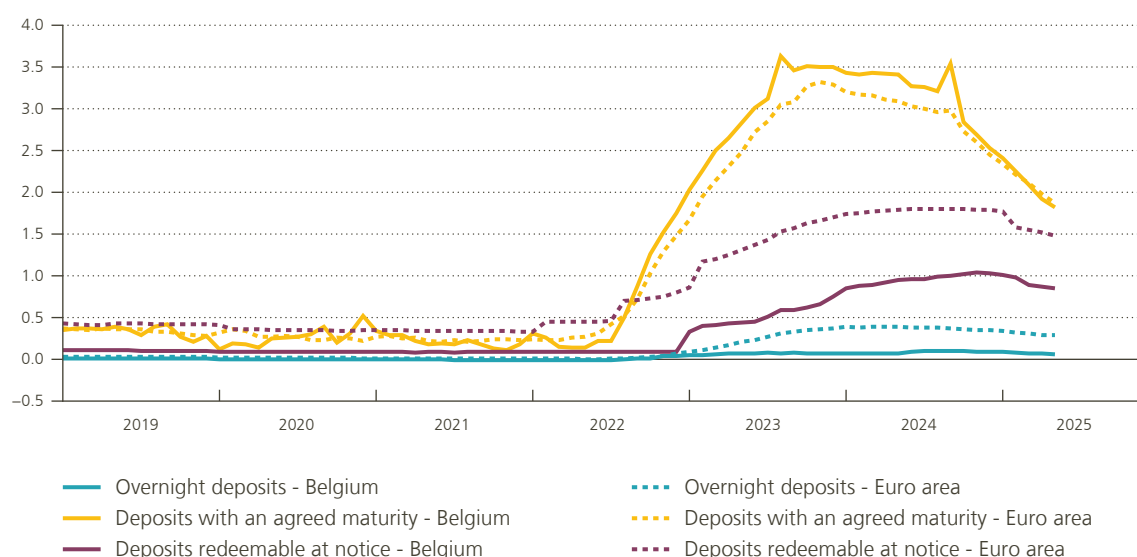
1 The charts show the change in banks' marginal funding costs since December 2021, broken down into the contributions of deposits (i.e. overnight deposits, term deposits and deposits redeemable at notice), covered bonds and interbank borrowings. The solid and dashed areas correspond, respectively, to the contribution of changes in interest rates and in the composition of the funding structure.

Banks' marginal funding costs rose throughout 2023, this time largely driven by deposit rates. We use the ECB classification of deposits and distinguish three main categories: term deposits (mainly deposits with a given maturity which, depending on national practices, may be subject to a penalty for early withdrawal), overnight deposits (mainly fully transferable sight deposits) and deposits redeemable at notice (savings deposits for which the holder must respect a fixed notice period before withdrawing the funds). From late 2022 onwards, household deposit rates increased and became a key driver of marginal funding costs, as shown by the blue area in Figure 6. In Belgium, rates on term deposits began to rise sharply in mid-2022 (from 0.1% in May), peaking at 3.5% towards the end of 2023. The euro area average remained somewhat lower, at 3.3%. Rates on deposits redeemable at notice began to rise in January 2023 in Belgium and levelled off at around 1% at the end of 2024.¹⁴ This increase started earlier in the euro area. The rates on overnight deposits barely changed in Belgium (and did not exceed 0.1%), while in the euro area they increased gradually, from 0% before the start of monetary policy tightening to an average of 0.37% in 2024 (see Figure 7).

Figure 7

Household deposit rates in Belgium and the euro area

(%, new business rates)



Source: ECB.

Reallocation to more expensive market-based funding sources, such as covered bonds and interbank borrowings, contributed only marginally to the increase in marginal funding costs (Figure 6). This limited reallocation can be explained by the high and generally stable share of deposits, which are typically remunerated at relatively low rates, in banks' funding structure. Nevertheless, it is worth noting that Belgian banks experienced deposit outflows in the third quarter of 2023 as households subscribed to the one-year State note (see Section 5.1). According to the NBB's Financial Stability Report (2024), these outflows could be absorbed by banks' liquidity buffers. Moreover, there was also a certain degree of reallocation between deposit types, as customers shifted part of their overnight and redeemable deposits to term deposits to benefit from higher rates (see Figure 13 in Section 5.1). Overall, banks faced only limited pressure to shift to more costly market-based funding sources.

¹⁴ The evolution of rates on deposits without an agreed maturity was in line with their observed repricing profile in the past, if due account is taken of the fact that banks had to restore the commercial margins on their stock of sight and savings deposits. These commercial margins eroded during the long period of low interest rates as a result of the lower bound of deposit rates (0% for sight deposits and the legal minimum of 0.11% for regulated savings deposits). Deposit rates should have turned negative during the low interest rate period in order to maintain these margins, which remunerate banks for the liquidity services they provide to clients through deposits and for the cost of collecting them (e.g. via ATMs or branch networks). See also the NBB's Financial Stability Report 2024 (pp. 27-28) in this connection.

The more limited increase in banks' marginal funding costs in Belgium than in the euro area reflects structural differences in the composition of liabilities. From late 2021 through 2023, banks' marginal funding costs rose by approximately 2.4 percentage points in the euro area, compared to around 1.6 percentage points in Belgium - a difference of roughly 0.8 percentage points. This divergence reflects the greater reliance of euro area banks on market-based funding sources, such as interbank borrowings and covered bonds, which saw the most pronounced cost increases during the tightening cycle. In contrast, the primary source of funding for Belgian banks is overnight and redeemable deposits, which were repriced only gradually, if at all, in response to the rise in policy rates. This helped cushion the impact of monetary tightening on banks' marginal funding costs.

2.2 Transmission to new business lending rates

Increases in marginal funding costs were fully transmitted to new business lending rates. The estimated pass-through of changes in marginal funding costs to new business lending rates indicates strong transmission in both Belgium and the euro area.¹⁵ The estimation method is explained in Box 2. For loans to non-financial corporations (NFCs), a one percentage point increase in the marginal funding cost led to an increase in new business lending rates of around 1.5 percentage points in Belgium after four months, with a slightly stronger and more persistent effect in the euro area (see Figure 8). For mortgage loans, pass-through in Belgium remained close to that observed for loans to NFCs, while in the euro area it was weaker and levelled off at around 1.2 percentage points.¹⁶ The less persistent effect observed in Belgium may be attributed in part to strong competition; as the NBB's Financial Stability Report 2025 notes, competition on the lending market has remained intense over the past three years.

BOX 2

Pass-through of changes in bank funding costs to lending rates

This box presents the empirical approach to assessing how changes in bank funding costs are transmitted to new business lending rates. We aim to illustrate the correlation between bank funding costs and lending rates over time, not to identify the causal impact of monetary policy shocks. We use the local projection approach proposed by Jordà (2005), with the equation estimated as follows:

$$\Delta y_{b,t+h, t-1} = \beta^h \Delta MFC_{t,t-1} + \gamma^h X_{b,t-1} + \alpha_b^h + \mu^h$$

where $\Delta y_{b,t+h, t-1}$ is the change in the lending rates of bank b , $\Delta MFC_{t,t-1}$ is the change in the marginal funding cost, $X_{b,t-1}$ is the vector of lagged control variables, α_b^h are bank fixed effects and μ^h refers to the error term.

The coefficient of interest is β^h which captures the absolute change in lending rates over an h -month horizon for banks, following an increase of one percentage point in the marginal funding cost.

15 Similarly to Beyer *et al.* (2024), we opted for a six-month horizon given the period under analysis. The much narrower confidence bands for the euro area reflect the larger sample of banks used for the estimation.

16 The data sample used for estimation presents strong pass-through, which is consistent with our estimates. Moreover, while large-scale asset purchases (see Section 1) pushed down medium-term and long-term interest rates, the normalisation of the ECB's balance sheet had the opposite effect by releasing this downward pressure, thereby raising interest rates. Consequently, lending rates have been driven not only by higher marginal funding costs, mainly reflecting the rise in (short-term) policy rates, but also by the distinct impact of quantitative tightening.

We estimate our baseline specification using ordinary least squares (OLS) over the period from January 2022 to January 2024, considering horizons of up to six months. Standard errors are clustered at bank level.

We use a dataset collected by the ECB on individual balance sheet items (iBSI) and monetary interest rates (iMIR) for a sample of banks. After cleaning for outliers and restricting the period, we obtain 215 banks in 17 euro area countries (the euro area aggregate includes Belgium) and 8 banks in Belgium. We use new house purchase lending rates (all maturities and amounts)¹ and new NFC lending rates (all maturities and amounts).

We use bank characteristics as control variables commonly found in the literature. We follow the approach of Holton and Rodriguez D'Acri (2015, 2018). Bank size is measured by the logarithm of total assets. Bank liquidity is defined as the sum of the most liquid assets over total assets; the items included are loans to MFIs (including deposits with the Eurosystem) and holdings of government and corporate securities. Due to a lack of appropriate data on individual MFI capital levels, we use a proxy variable, namely capital and reserves reported by banks expressed as a percentage of total assets.

¹ Other types of consumer loans may be underrepresented in the sample, as some consumer credit providers are excluded, for example, bank subsidiaries that offer personal loans, car loans, etc. Note that iBSI and iMIR data are not collected at the level of individual contracts.

Strong pass-through to new business rates, alongside other factors, helped strengthen net interest income during the tightening cycle.¹⁷ The strong transmission of increases in marginal funding costs to new business lending rates helped shore up banks' net interest income and profit margins. This relationship should be seen as indirect, however, since the pass-through only concerns new loans, while net interest margins are driven by interest flows on the outstanding stock of assets and liabilities.¹⁸ In Belgium, the large share of fixed-rate mortgage loans implies a slower and more limited repricing of banks' loan portfolios compared with countries where variable-rate loans dominate, partly explaining why bank profitability in Belgium increased less than in several other euro area countries. According to the NBB's Financial Stability Report (2024 and 2025), Belgian banks reported higher profits in 2023 and 2024, with a return on equity of 12.5% and 11.5%, respectively. The main driver of the higher profitability in 2023 was the strong increase in net interest income, from €15.3 billion in 2022 to €18.1 billion. In 2024, net interest income declined (to €16.9 billion), but this was offset by stronger non-interest income. At the euro area level, banks also benefited from wider interest margins. The ECB's Financial Stability Review (2023 and 2024) notes that the euro area banking sector recorded its highest profitability in over a decade, underpinned by a favourable interest rate environment and effective pass-through to lending conditions, and that profitability remained strong in 2024.

¹⁷ Unconventional monetary policy measures implemented during the low-inflation and Covid-19 periods have also supported bank profitability. See Boeckx (2023) for more information. For influential factors other than changes in lending rates, see NBB Financial Stability Report (2024 and 2025).

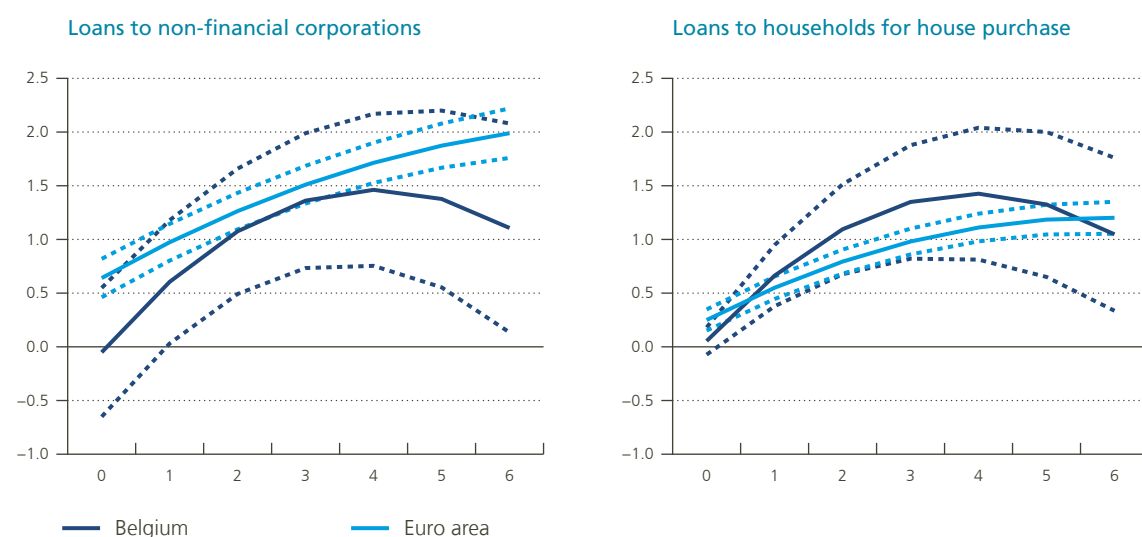
¹⁸ Portfolio lending rates adjust with a lag to changes in new business lending rates, since they represent the weighted average of rates on both newly issued and outstanding loans. The adjustment speed depends largely on the maturity structure and the prevalence of fixed-rate contracts.

Observed new business rates for both households and firms rose sharply during the ECB's tightening cycle, with dispersion across banks varying by loan type. Figure 9 summarises these developments and shows that, for both household mortgages and corporate loans, average new rates climbed steeply as from 2022, peaking in late 2023 before easing by mid-2025. On the mortgage market, Belgian and euro area rates followed a similar path and the interquartile range (a measure of dispersion between banks) remained relatively stable. For NFC loans, average new rates also evolved in a similar way in both regions. In Belgium, dispersion in corporate lending rates widened in 2023, along with the rise in interest rates, and returned to its previous (limited) level thereafter. Dispersion was, for most of the period, higher in the euro area than in Belgium, partly reflecting the larger sample of euro area banks. By mid-2025, all rates (by region and loan type) had fallen somewhat but remained well above their 2022 levels. The differences across borrower types reflect how interest rates vary with loan maturity, with NFC lending typically concentrated at shorter maturities and mortgage lending more exposed to longer ones. They may also stem from banks' commercial strategies, as housing loans are often used to build lasting customer relationships and promote the cross-selling of other retail products. This pattern is consistent with the finding that information frictions are more relevant for firms, particularly when higher funding costs reduce banks' risk tolerance, while household loans are typically secured by relatively safe, standardised collateral.

Figure 8

Impact of changes in marginal funding costs on lending rates¹

(in percentage points, new business lending rates)



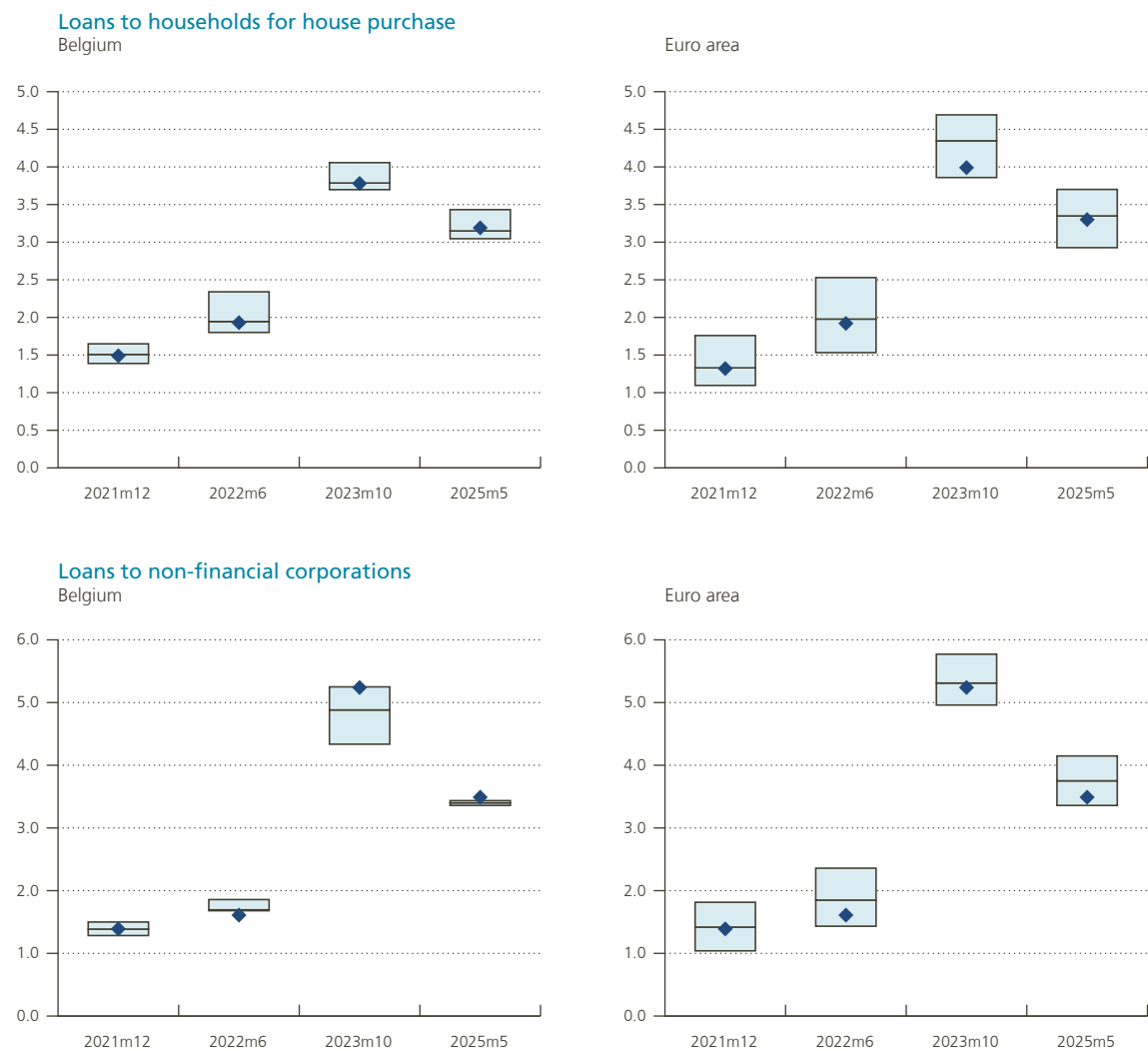
Sources: Bloomberg, CSDB, LSEG, ECB, own calculations.

¹ The graphs illustrate the cumulative effect of a one-percentage-point increase in the marginal funding cost on the interest rates for new loans to NFCs and households as well as the 90% confidence bands. The y-axis shows the impact of a one-percentage-point increase in the marginal funding cost between t and $t-1$ on the change in lending rates between $t+h$ and $t-1$ in percentage points. The x-axis represents the monthly horizon h for the change in the dependent variable.

Figure 9

Average household and NFC lending rates across banks in Belgium and the euro area¹

(%, new business rates)



Source: ECB.

¹ The charts present the interquartile range for house purchase lending rates (all maturities) and NFC lending rates (loans other than revolving loan facilities and overdrafts, convenience and extended credit card debt) across individual banks. The central horizontal line in the rectangles represents the median of all values, while the diamond indicates the average rate. Note that the Belgian sample was limited to eight banks over the period considered. There are 227 banks in the euro area sample (219 when excluding Belgium).

3. The impact of price and interest rate shocks through the lens of a macroeconomic model

The tightening of monetary policy led to a rise in financing costs in addition to the inflationary shock. The Belgian economy was therefore impacted by the combined influence of these two events; this section aims to quantify their respective effects. Rising prices and interest rates can constrain budgets and influence the decisions of governments, households, and businesses in various ways, some of which will be explored in greater detail in the following sections. This part focuses on the effects on selected macroeconomic variables, namely interest rates, consumer prices, economic activity (measured by the value added generated by the private sector), corporate investment, household consumption, and housing investment. For this purpose, we employ a macroeconomic model to isolate the effects of energy price increases and monetary policy shocks from other determinants.

Section 1 highlighted the deep interconnection of policy interest rates and inflation. This intimate relationship – reflected in the ECB's policy objective and synthesised in the Taylor rule (see Figure 4) – makes it difficult to disentangle their respective roles in business cycle dynamics. However, New Keynesian macroeconomic models such as BEMGIE (de Walque *et al.*, 2023) allow the dynamics of each variable to be decomposed around its long-term growth path based on the sources of fluctuations, attributed to exogenous structural shocks (or “surprises”).¹⁹

Shock decomposition may thus help to isolate the respective effects of price and interest rate surprises on recent developments in certain key macroeconomic indicators for Belgium. BEMGIE is well suited to this task. The model includes a complete representation of the euro area economy, in which the Belgian economy is embedded. In this context, euro area interest rates are set based on macroeconomic conditions throughout the euro area but feed directly into the Belgian economy. For the following analysis, we group shocks into four categories (domestic price shocks, energy and import price shocks, government policy shocks and monetary/exchange rate shocks) plus a residual category including all remaining shocks along with the long-run trend. Figure 10 illustrates how these different (groups of) shocks shaped the six key macroeconomic variables mentioned above over the period 2021-2024. The blue lines trace the actual path of each variable, while the stacked bars break this path down into the contributions of different shocks. We start with the root cause of the recent crisis, i.e. price shocks.

Energy and import prices affect consumption prices both directly and, with some delay, indirectly. The direct impact is felt through their share in the consumption basket, while the lagged indirect impact is transmitted through the production chain. As energy and import prices are quite volatile (especially for the period considered), related unexpected changes in these prices (see the dark blue portion of the bars in Figure 10) play an important role in consumer price inflation dynamics (Figure 10, top left-hand chart). From 2021 onwards, energy and import prices contributed to inflationary pressures in Belgium. They were subsequently supplemented, and gradually supplanted, by surprises in domestic production and consumer prices.²⁰ This contribution reversed as from the first quarter of 2023, in line with the observations illustrated in Figures 1 and 2. The lagged indirect impact of energy and import prices through the production chain explains why unexpected changes in these prices helped speed up or slow down real economic growth with a delay of around five to six quarters (see Figure 10, middle left-hand chart).

19 It should be noted that the endogenous reactions of macroeconomic variables to these shocks – such as interest rate responses to inflation – form part of the transmission mechanism and are not classified as shocks themselves.

20 The growing importance of domestic price shocks in consumer price inflation dynamics for 2022-2023 is due to the fact that the model is linear and estimated with strong nominal rigidities. These features lead it to mistakenly downsize the transmission from energy and import prices to consumer prices in this particular period of high inflation with quicker than usual price reactions. As a result, a portion of what should have been attributed to energy and import prices is wrongly attributed to domestic price shocks. This weakness of linear models for the recent period is explained by Harding, Linde and Trabandt (2023).

Due to the behaviour of relative prices, domestic price shocks positively affected private investment in 2021 and 2022. Although it may seem counterintuitive, from the fourth (or third) quarter of 2022 onwards, domestic price shocks contributed positively to growth in firm (and housing) investment (see the grey portion of the bars in the bottom charts in Figure 10). A priori, the inflationary price surprises observed at that time should not have sustained these components of private demand; to understand why this happened, we need to consider relative prices. Indeed, “domestic price shocks” include shocks caused by production prices, consumption prices and (firm and housing) investment prices. For each investment series, what matters is how the corresponding price deflator behaves with respect to the market price reference, i.e. the consumption price deflator for dwellings and the private value-added deflator for business investment. Both price deflator series grew at a faster pace than the reference market deflator up to the second half of 2022, resulting in a relative price handicap in demand for these investment items for this period. More specifically, as housing investment prices (reflecting inter alia the price of building materials) grew faster than the consumer basket between Q2 2019 and Q4 2022, it became more financially appealing to rent (with rental prices adjusted based on the health index, which is closely linked to the HICP) than to invest in bricks and mortar. The same was true for business investment, although not at the same scale. When the investment deflator increases more rapidly than the private value-added deflator, as occurred from Q1 2021 until Q3 2022, firms have an incentive to rely on rented services or to buy inputs produced elsewhere rather than to invest in new production tools. Both relative price gaps stabilised at the end of 2022, turning the previous drag into support. It is noteworthy that the relative price effects observed for both investment series in 2023 did not extend to aggregate private demand (see Figure 10, central left-hand chart). Indeed, these effects were counterbalanced by the reduced competitiveness observed on international markets due to the Belgian system of automatic wage indexation. As discussed in Section 1, the price shocks of 2021-2022 were global, and not specific to the Belgian economy. They hit consumption prices at the euro area level in a fairly similar way, as shown in Figure 10 (upper left-hand chart), though Belgian consumer prices are typically a bit more volatile.

In line with the Taylor rule (see Figure 4, note 2), upward pressure on consumer price inflation should trigger monetary policy tightening. The fuchsia and dark green portions of the bars in Figure 10 (upper right-hand graph) illustrate such inflationary shocks. However, the policy rate remained constant until the first half of 2021. BEMGIE interprets the difference between the observed short-term rate and that estimated using the Taylor rule (see Figure 4, right-hand graph) as attributable to monetary policy surprises.²¹ The light blue portion of the bars on this chart represent the sum of residual shocks and the long-run trend, a constant set at 3.9% which corresponds to a historical average. The size of these residual shocks is thus obtained by subtracting 3.9% from the light blue portions of the bars. They summarise the overall macroeconomic conditions²² that led to both the low inflation rate and the negative output gap prevailing before 2021 and exerted strong downward pressure on the policy rate until Q1 2021, pushing it far below its trend level. The contributions of these residual shocks to the policy rate decreased gradually along with the ensuing inflationary developments. Since Q1 2024, they have totalled around zero, with the light blue portion mostly accounting for the 3.9% trend. It should be noted that since the second half of 2024, inflation has been declining at a more rapid pace than predicted by BEMGIE which gives the ECB a justification to lower its policy rates.

For the reasons mentioned in Section 1, the model clearly indicates that monetary policy remained accommodative in 2021 and 2022 (see the orange portion of the bars in Figure 10). For these years, the second and third rows in Figure 10 show that departures from the historically estimated monetary policy response supported the real economy in Belgium for all aspects considered, i.e. private consumption, housing investment and business investment, which form the backbone of private value added. At the aggregate level (central left-hand chart) this support more than offset (by 33% on average) the negative impact of domestic price shocks observed during this period. The downside is that this accommodative monetary policy came at

21 Therefore, the Taylor rule, or “endogenous” component of the policy rate, amounts to the sum of the contributions of all shocks with the exception of the monetary policy shock displayed in Figure 10 (upper right-hand graph).

22 They represent long run scars from the great financial crisis and the euro sovereign debt crisis and were reinforced during the Covid-19 period.

a cost in terms of inflation (upper left-hand chart).²³ According to BEMGIE, the progressive dying out of these accommodative monetary policy shocks was sufficient to put a drag (albeit limited) on the demand components of Belgian private value added as from the second quarter of 2023, as can be seen in the two bottom rows in Figure 10. Indeed, a deviation of the interest rate below the value predicted by the Taylor rule at time t is estimated to support the quarter-on-quarter growth rate of real activity for about five quarters, which then returns to its long-term trend (see de Walque et. al 2023, Figure 1 page 42). Hence the negative contribution of the monetary policy shocks to private value added. By contrast, the dynamic response of consumer price inflation to a monetary policy shock is very short-lived. According to the New Keynesian approach incorporated in BEMGIE, the (endogenous) increase in interest rates in 2023 mitigated the reaction of consumption to imported and domestic price shocks of the previous and contemporaneous quarters (see the upper left-hand chart in Figure 10).²⁴

Looking at fiscal policy shocks, government measures appear to have provided support for real economic activity throughout the inflationary episode (see Figure 10, the yellow portion of the bars in the central left-hand chart) **while simultaneously helping to ease inflationary pressures somewhat** (the yellow portion of the bars in the upper left-hand chart). Public spending²⁵ played a key role, from the Covid-19 period onwards, in sustaining real activity through the channel of aggregate demand. It was supplemented during the inflationary episode by targeted and untargeted energy subsidies (including the so-called “social tariff”) as well as a number of energy-related tax credits. This second leg of Belgian fiscal policy appears to have helped limit somewhat the surge in inflation, overcoming the usual inflationary effect of government spending.

Since the Covid-19 pandemic, private consumption has grown at a slower pace on average than its long-run trend (0.34% per capita quarter-on quarter) but started to catch up somewhat in 2024. After the pent-up demand of 2021, households dealt with the 2022 surge in inflation by dissaving. The (delayed) income support offered by wage indexation mechanisms in 2023 (see Section 5.3 for more information) was not fully allocated to consumption and resulted in a mild rebound in the saving rate that year. This cautious behaviour vanished in 2024, however, after inflation quickly converged at normal levels.

The three components of private demand shown in Figure 10 are mostly explained by “residual shocks”, including own demand shocks. This is typically a signal that the macroeconomic model is having some difficulty matching the observed dynamics of the variable concerned for the period in question. This is particularly the case for the (highly volatile) business investment series and for the housing investment series, which dropped by 14% from its 2019 level.²⁶ It could be, for example, that the model underestimates how the accumulation of cash by firms over the last decade contributed to the investment surge observed in 2022-2023 (see Section 6). With regard to housing investment, the model may fail to account for non-linearities in the reaction of demand to the cost of labour and building materials and does not factor in the impact of longer and more uncertain permit processes and the reduction of registration duties, which have made existing dwellings relatively less expensive than new builds (see Section 5.2).

As macroeconomic models deal with “representative agents”, it is important to complement them with heterogeneity analyses, e.g. across sectors, size and market share for firms and across regions, age and wealth and income distributions for households. Looking at more granular metrics, as is done in Sections 5 and 6, provides additional insight.

23 Monetary policy shocks were a marginal force to inflation during the period of accommodative monetary policy. From the end of 2022, monetary policy shocks decreased and disappeared as the policy rate behaved mostly according to the Taylor rule.

24 From 2023 onwards the three-month interest rate follows the Taylor rule: the influence of monetary policy can no longer be seen through the associated shocks, but rather through the rapid convergence towards zero of the weight of price shocks in consumer price inflation and interest rate dynamics.

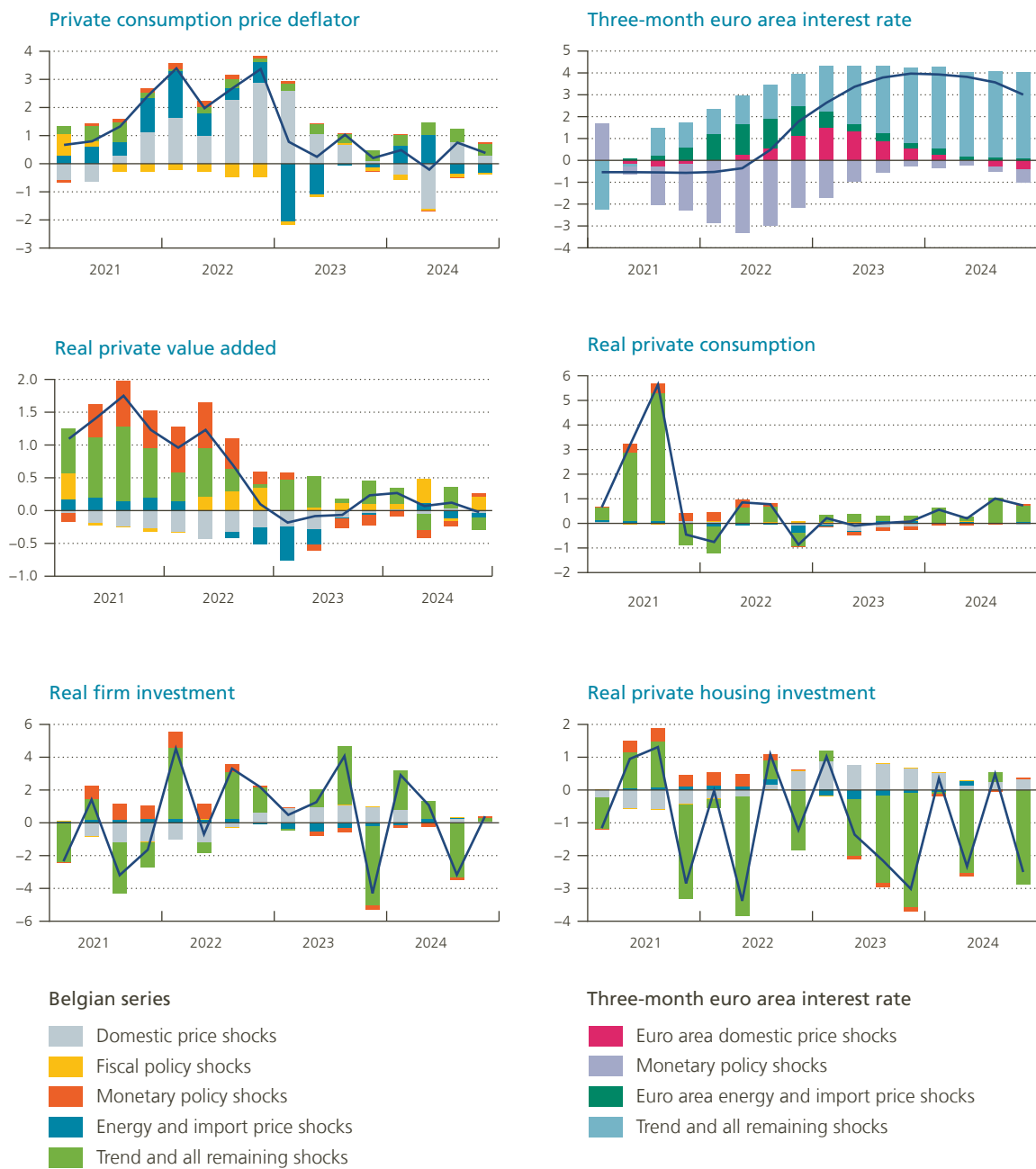
25 Excluding the wages of civil servants. Indeed, private sector value added does not include direct contributions to domestic value added of the public sector. However, government spending on goods, equipment and investment is produced by domestic firms (for their import content) and contributes to private sector value added.

26 Note that the value added of the construction sector did not suffer to the same degree and rose by 3.7% over this period. The drop in demand for housing was more than made up for by business and public investment (partly in buildings).

Figure 10

Historical decomposition of selected macroeconomic aggregates

(quarter-on-quarter growth rate for all variables expressed per capita, with the exception of the interest rate which is expressed in percentage points)



Source: Own calculations using BEMGIE (de Walque et al. 2023).

4. Impact on public finances

This section analyses the impact of the rise in interest rates on the public deficit and debt, following a long period of low funding costs. Rising interest rates imply a gradual increase in the interest expense on outstanding debt and a possible change in government behaviour. While low interest rates can serve as an incentive for governments to borrow more on the financial markets, higher interest rates should cause them to borrow less. At the same time, higher inflation reduced the debt-to-GDP ratio, as rising prices pushed up the denominator (nominal GDP).

Over the period 2013-2022, as interest rates gradually declined and remained low, interest expense fell by 0.2% of GDP on average per year, from 3.4% of GDP in 2013 to 1.6% of GDP in 2022 (see Figure 11). Existing debt was refinanced at more favourable interest rates. This contributed to an improvement in the budget balance.

In addition, the period 2013-2019 saw an improvement in the primary balance towards a limited surplus. Despite lower financing costs, which could have impelled the government to borrow more, the primary balance improved. This was necessary to put the debt on a stronger downward path, from 105% of GDP in 2013 to 98% of GDP in 2019. The government should have made even deeper efforts to achieve the targeted budget balance and put public finances on a sustainable path. Indeed, the medium-term objective of the government was to balance the overall budget, not just the primary balance.

Interest rates remained very low in 2020 and 2021, during the Covid-19 period. This was notably due to massive purchases of government bonds in the framework of the PEPP which were intended to lower borrowing costs and increase lending in the euro area in order to help citizens, firms and governments access the funds they needed to weather the crisis. As a result, the primary balance deteriorated sharply, to -7.1% of GDP in 2020 and -3.7% of GDP in 2021.

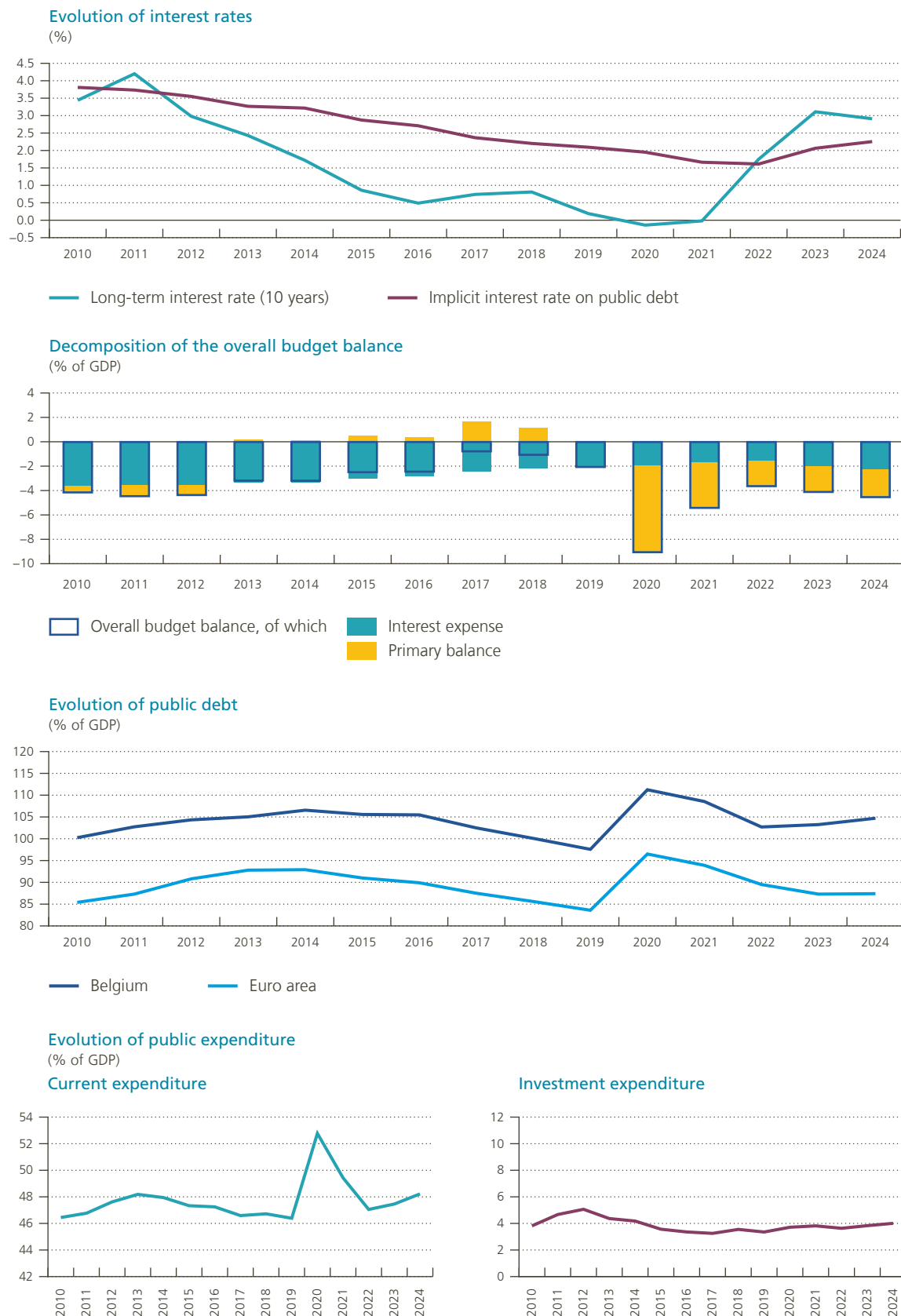
In 2022, interest rates on Belgian government debt began to increase due to rising inflation expectations and monetary policy tightening. The benchmark rate for ten-year linear government bonds (10-year OLOs) climbed from 0.3% on average in January 2022 to 2.7% on average in December 2022. In 2023, it remained close to 3%. As a result, deficits and maturing debt had to be (re)financed at higher rates. In 2022, the effect of higher interest rates on interest expense remained limited. This was due to lengthy maturities, which limited the amount of debt maturing annually. In 2022, the average interest rate on long-term debt issued by the Belgian Debt Agency was 1.7%, up from just 0.1% in 2021. Even so, this was still below the interest rate on OLOs that came up for refinancing in 2022, which had originally been issued at rates close to 3.5%. As a result, refinancing remained relatively favourable and helped offset the higher cost of servicing the primary deficit. Overall, the implicit interest rate on public debt fell slightly in 2022, albeit by a lesser extent than in previous years.

For the first time in several decades, the interest expense on the public debt rose in 2023. It was around 1.6% of GDP in 2022 and approximately 2% of GDP in 2023. Refinancing gains virtually disappeared from 2023 onwards due to the low rates on the instruments being refinanced.

Rising interest rates may discourage governments from borrowing. However, during the energy crisis, the deficit remained substantial as the government took measures to shore up purchasing power. Thus, the VAT rate on gas and electricity was lowered in 2022. In addition, the target group for the social tariff was extended to certain categories of benefits recipients. Excise duties on petrol and diesel were lowered as well. A further key policy measure was the introduction of the so-called “basic package” through which households received a monthly lump sum in the form of vouchers, regardless of their energy consumption, to help lower their energy bills. The net cost (including funding charges) of the measures taken to deal with the energy crisis and Russia’s invasion of Ukraine represented 1% of GDP in 2022 and 0.4% of GDP in 2023. Most of these measures came to an end in June 2023.

Figure 11

Interest rates and public finance indicators

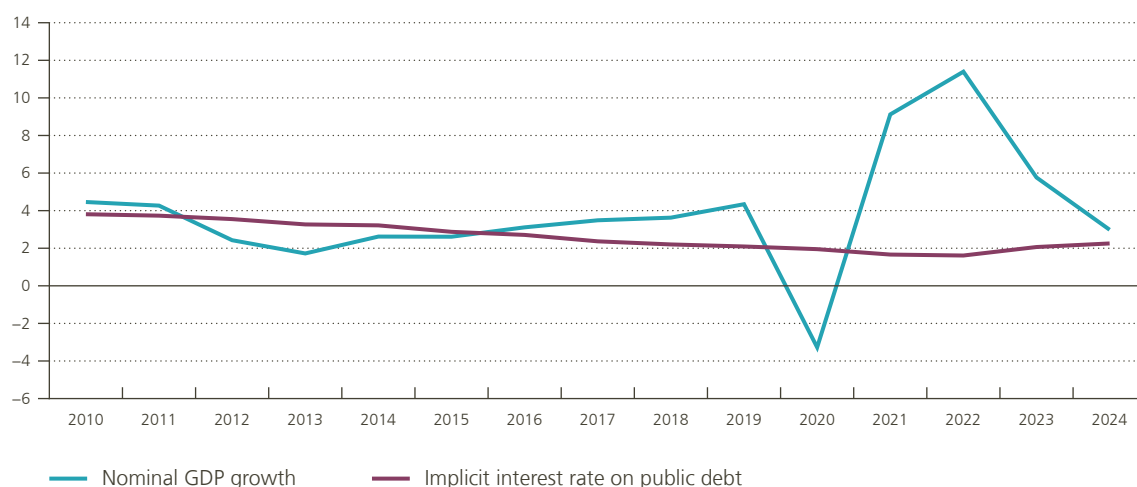


Source: NAI.

Figure 12

Interest rate-growth differential

(%)



In 2024, the deficit widened further despite the ending of temporary measures to bolster purchasing power. Current primary expenditure continued to rise sharply (e.g. due to population ageing), while public investment rose, owing also to the electoral cycle and funding through the Next Generation EU (NGEU) package. Higher interest rates therefore did not result in less borrowing by the government. As a result, following the Covid-19 and energy crises, the public deficit and debt (4.5% and 105% of GDP, respectively, in 2024) are now much larger than in 2019, while the interest rate environment has fundamentally changed. Risks to the sustainability of Belgian public debt have increased significantly as the government did not take sufficient advantage of the period of low interest rates to reduce the debt and the associated interest expense.

More broadly, the steady rise in the implicit interest rate, combined with normalising nominal growth rates, has worsened the debt dynamics via the interest rate-growth differential. The difference between the implicit interest rate on the public debt and nominal GDP growth ($r - g$) and the primary balance determines movements in the government debt ratio. When the implicit interest rate on the debt is higher than the nominal GDP growth rate ($r > g$), the debt ratio tends to increase spontaneously. Indeed, due to the rise in interest expense, the numerator of the debt-to-GDP ratio (total debt) will increase faster than the denominator (nominal GDP). In that case, the government should have a sufficiently high primary balance to offset this effect and to stabilise or lower the debt ratio. If the primary balance is too small, the debt ratio increases continuously. This explosive process, whereby the interest expense on public debt fuels the debt, is commonly called “the snowball effect”.

Despite the rise in interest rates seen since 2022, the interest rate-growth differential has remained favourable, but this may not last. The high inflation²⁷ of 2022 and 2023 pushed up nominal GDP growth, which helped set the debt-to-GDP ratio on a temporary downward path after the steep increase observed during the Covid-19 period. As nominal growth normalises, this favourable differential²⁸ is narrowing (see Figure 12) and may even turn positive (or unfavourable) in the coming years.²⁹ According to the Bank’s June 2025 economic projections, $r-g$ is set to turn slightly positive from 2025 onwards. Moreover, the Belgian government is running a high primary deficit. There is thus a real risk of a snowball effect automatically inflating the debt ratio in the coming years. A positive primary balance (or surplus) is needed to curb the rising debt path and ensure the sustainability of Belgian public finances.

27 See Cornille *et al.* (2023).

28 Since 2016, the implicit interest rate has lagged behind nominal GDP growth (except in 2020), which is unusual from a historical perspective.

29 See Godefroid and Deroose (2024).

5. Impact on households

This section looks at several aspects of how the recent episode of high inflation and rising interest rates affected Belgian households. Section 5.1 examines changes in household financial portfolios, including shifts in saving behavior and asset allocation. Section 5.2 analyses the impact on the housing market, focusing on house prices, affordability, real estate activity and housing investment. Section 5.3 investigates the uneven effects across income and wealth groups, highlighting implications for inequality.

5.1 Changes in household financial portfolios

The composition of household financial portfolios results from decisions about the types of assets in which to invest, based on expected returns and associated risks. These decisions also depend in part on household wealth and risk aversion. Consequently, they are influenced by returns across financial instruments. From 2022 onwards, as inflation took hold, some Belgian households adapted their investment decisions in an attempt to protect their savings and benefit from better investment opportunities. These adjustments affected a broad range of financial products, not only deposits.

As the interest rate differential between term deposits and savings deposits widened, households shifted some of their funds from sight and savings accounts to term deposits. As explained in Section 2, in 2023, interest rates on term deposits rose rapidly while returns on sight and savings deposits shifted more gradually, fully in line with historical regularities: while sight accounts continued to yield close to zero, regulated savings accounts gradually repriced to a level last seen in 2012, though not much higher than 1%, while the more price-sensitive term deposit rates surged above 3%, creating a strong incentive to reallocate funds. When factoring in inflation, the real interest rate on sight and savings accounts turned negative, meaning that the purchasing power of households with funds in these types of accounts dropped. In response, some households restructured their portfolios, moving from current and savings accounts to term deposits. In 2023, Belgian households withdrew nearly €31 billion from regulated savings accounts and reduced their sight deposits by about €27 billion. In parallel, nearly €7 billion was placed in term deposits in 2022³⁰ and €38 billion in 2023, marking the sharpest reallocation of household savings in decades (see Figure 13, left-hand graph). This trend continued in 2024, with outstanding amounts on term accounts increasing by a further €14 billion. Alongside term deposits, households were also attracted to other financial products, in particular debt securities such as sovereign and corporate bonds.

A portion of household savings was channelled into debt securities, particularly following the issuance of a State note with advantageous tax treatment and an attractive yield. In 2023, the Belgian Debt Agency issued a one-year State note for the first time in over 10 years, which matured on 4 September 2024. This risk-free instrument – similar to a savings account – was intended to achieve three objectives: stimulate competition for household savings and thereby raise bank deposit rates; send a positive signal to the financial markets regarding Belgians' capacity to save; and provide households with a safe, attractive short-term investment (NBB, 2024a). The response was overwhelming and resulted in a sharp increase in household investment in debt securities in 2023 (see Figure 13, right-hand graph). More than 500 000 savers subscribed, investing a total of nearly €22 billion. This represented around 5% of total household deposits (as of July 2023) and triggered a significant outflow of funds from banks. Withdrawals by households in 2023 reached the highest level ever recorded in Belgian banking statistics, with deposits shrinking by €16 billion over the course of the year. The popularity of the State note was largely due to its competitive yield at a time when, as in the past, Belgian banks only gradually passed on higher market rates to deposits.

30 The weak amount of net deposits in 2022 is discussed in Section 5.3.

When the State note matured in September 2024, households placed €18 billion in term deposits and €5 billion in savings certificates offered by the banking sector. Banks thus recovered the amounts they had lost to the State note. As a result and owing to competition between banks, returns on term deposits and savings certificates were higher than on the new State note. In September 2024, interest rates on term deposits were still at a high level, although this turned out to be temporary (Cappoen, 2024).

Overall, no major change was observed in household holdings of investment fund shares, equities and insurance products. Over the course of 2023–2024, investment funds recorded positive yet moderate net inflows. In 2020, these funds absorbed a substantial portion of the excess savings generated during the Covid-19 period as they offered better returns at that time. Holdings of insurance products continued to decline slightly, in line with earlier years. These developments reflect the continuation of pre-existing trends and also highlight that, in 2023, households shifted their attention more clearly to less risky alternatives such as term deposits and the State note, which attracted a substantial share of savings.

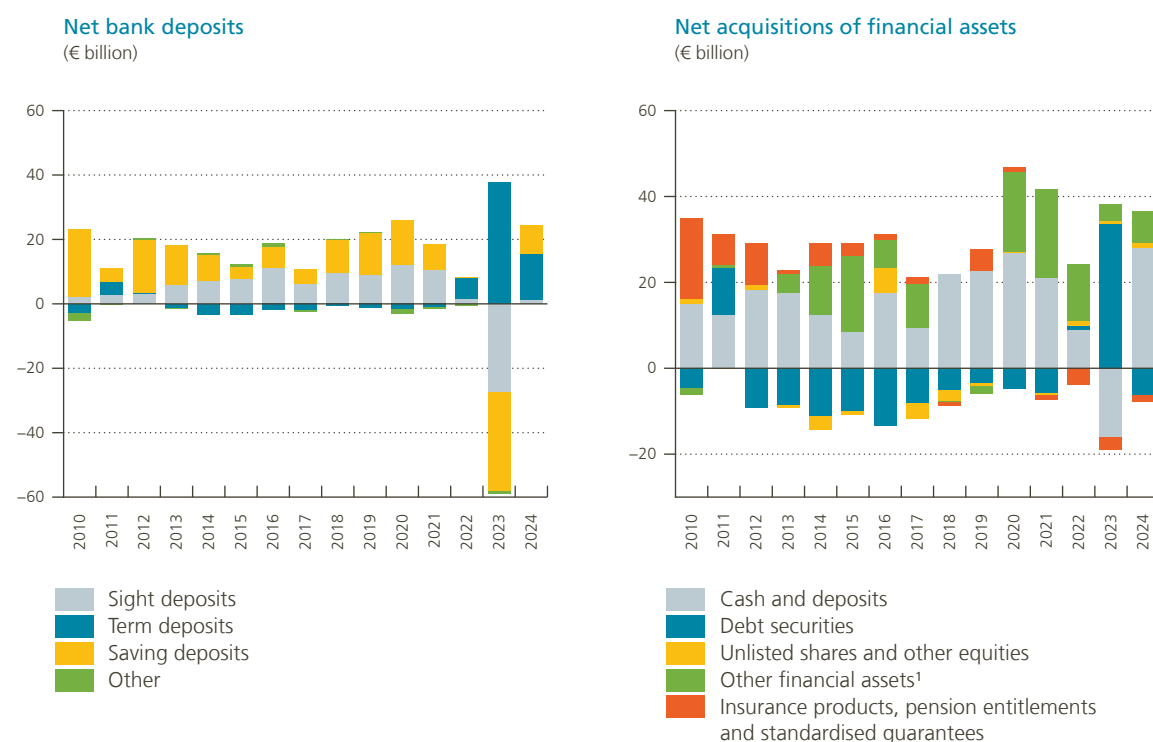
Amid rising interest rates and declining equity valuations, investor demand shifted to low-risk instruments such as State notes. The popularity of low-risk financial instruments is also related to fluctuations and volatility in the returns on higher-risk products, which vary along with financial market developments (Vu *et al.*, 2021). In 2022, equities, investment fund shares and insurance products suffered substantial valuation losses (amounting to €100 billion) due to several factors, including rising interest rates and falling stock market prices (NBB, 2023a). Compared to these risky investments, the 2023 State note was viewed by households as a risk-free alternative. Between 2023 and 2025, riskier financial assets once again recorded valuation gains, enabling households holding such assets to recoup the losses they had incurred in 2022.

Overall, over the period 2022–2024, some households benefited from the momentum of monetary tightening, while others saw their financial wealth stagnate or decline. Those who had savings mainly in current or savings accounts saw their financial assets shrink, as the interest earned on these types of products did not keep pace with inflation. The same was true for those holding (and selling) medium- and long-term bonds, the price of which fell when interest rates rose. On the other hand, households holding riskier financial assets (investment fund shares, equities, etc.) benefited from the positive valuation effects recorded over the period 2023 to 2025,³¹ which more than made up for the losses recorded in 2022. Finally, households that had invested in short-term deposits or the State note were able to temporarily protect a portion of their savings against rising interest rates, although only in part as the return on these investments was still lower than the inflation rate.

31 By way of illustration, the Eurostoxx 600 increased by 25% between the end of June 2022 and the end of December 2024. The S&P 500 rose by 55% over this same period.

Figure 13

Net flows of household financial assets

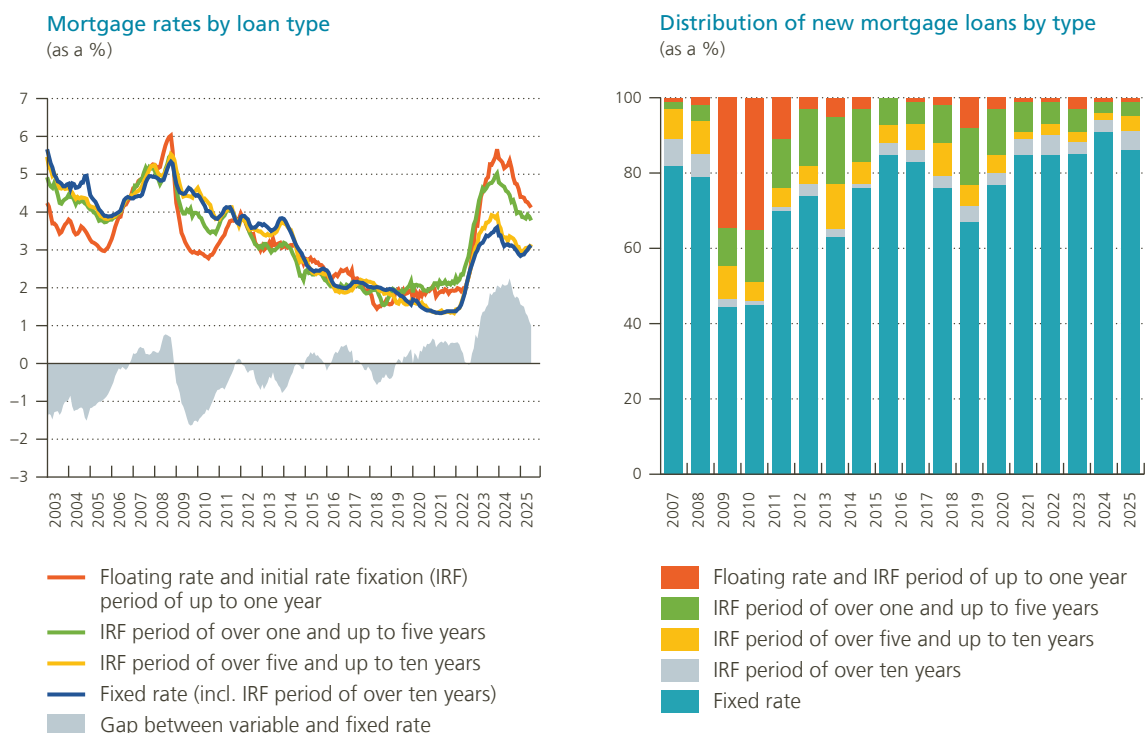


5.2 Impact on the housing market

Mortgage rates have risen sharply since 2022, with the widening gap between variable and fixed rates further reinforcing the predominance of fixed-rate mortgages. Fixed mortgage rates surged to 3.6% at the end of 2023, from a low of 1.4% in early 2022, before easing somewhat in 2024, and then rose again, to 3.1%, in July 2025 (see Figure 14, left-hand graph). Variable rates increased even more sharply, as they are closely tied to short-term market rates which rose more than long-term rates over this period (see Figure 3). This divergence resulted in a peak difference of around two percentage points between variable and fixed rates in 2024, although the spread narrowed slightly in the first seven months of 2025. This wider gap led to a further increase in the share of fixed-rate mortgages – which was already high – to around 91% in 2023; this is consistent with the strong historical correlation between the rate differential and the share of fixed- and variable-rate mortgages (see Figure 14, right-hand graph).

Figure 14

Mortgage rates and distribution of new mortgage loans by type



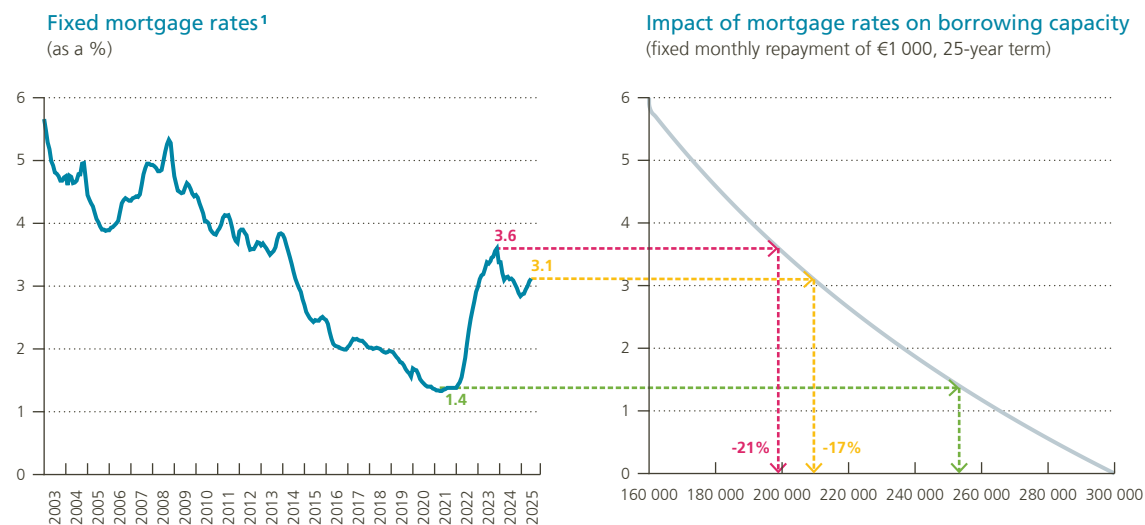
Source: NBB.

The sharp increase in mortgage rates had a negative impact on the borrowing capacity of homebuyers and also reduced demand for housing investment. As most Belgians rely on a mortgage to finance a house purchase, higher interest rates directly reduce their borrowing capacity. Figure 15 illustrates how the increase in fixed mortgage rates has reduced the amount that can be borrowed assuming a fixed monthly payment of €1 000 over a 25-year term (right-hand graph). In early 2022, €253 000 could be borrowed, but this amount had fallen to €199 000 by the end of 2023 (a 21% drop), and stood at €210 000 in July 2025 (a 17% drop). In addition, the rise in interest rates has weakened demand for investment property, reversing the strong investor appetite seen in previous years when low rates encouraged a search for higher yields in real estate.

However, the negative impact of higher interest rates on the amount that can be borrowed has been offset by a significant increase in nominal household income and longer maturities for new mortgages. The average net disposable income of households rose by 22% between 2021 and the first quarter of 2025, largely driven by very strong wage indexation in response to high inflation. At the same time, mortgage maturities for first-time buyers have lengthened significantly, with the share of mortgages exceeding 20 years rising from 59% in 2021 to 70% in 2024. This has enabled households to spread repayments over a longer period and partially absorb the impact of higher borrowing costs.

Figure 15

Evolution of mortgage rates and the impact on borrowing capacity



Sources: NBB, own calculations.

1 Average interest rate on new mortgage loans in Belgium with a fixed rate for more than 10 years.

House prices cooled following the raising of mortgage rates, but to a considerably more limited extent in Belgium than in several other euro area countries. After increasing sharply during the Covid-19 pandemic – by an average of 6.8% per year in 2020, 2021 and 2022 – nominal house price growth slowed to 1.4% on average in 2023 and 2024 (see Figure 16, left-hand graph). Real house prices peaked in Q3 2021 and have since declined substantially – by 8% at the end of 2024. In addition, since 2023, the sales-to-listing price ratio has decreased and houses are on sale for longer (Reusens *et al.*, 2025). The cooling of house prices was much more pronounced in several other euro area countries, with Germany, Luxembourg, Finland and Sweden experiencing sharp declines in nominal house prices. Belgium's relatively mild house price slowdown can be attributed to several factors, including the rapid and substantial increase in household income due to automatic wage indexation, the lengthening of mortgage maturities, the high level of household financial wealth and more stable house price expectations. More recently, house prices have begun to rise again, increasing by 1.4% in the first quarter of 2025, supported by the decline in mortgage rates, rising household income and a reduction in registration duties in both the Flemish and Walloon Regions.

The impact of the energy crisis on house prices differed, depending on the energy efficiency of the dwelling. While the prices of houses with a class D energy performance certificate (EPC) in Flanders and Wallonia were at the same level in 2023 and 2024 as in 2022, they increased for those with a class C EPC, and rose even more for those with a class A or B EPC; prices for houses with a class E or F EPC decreased (Reusens *et al.* 2025). The observed divergence in the evolution of prices of dwellings with different EPC classes since 2023 is due to the fact that buyers and banks are increasingly taking energy scores into account in their purchase decisions and the setting of mortgage conditions, respectively. This shift can be attributed to higher and more uncertain heating bills since the European energy crisis as well as to factors such as the introduction of the Flemish energy renovation obligation, the announcement of increasingly stringent energy renovation requirements and carbon prices in the coming years, a sharp rise in the cost of labour and building materials, and increased data collection by banks of energy scores.

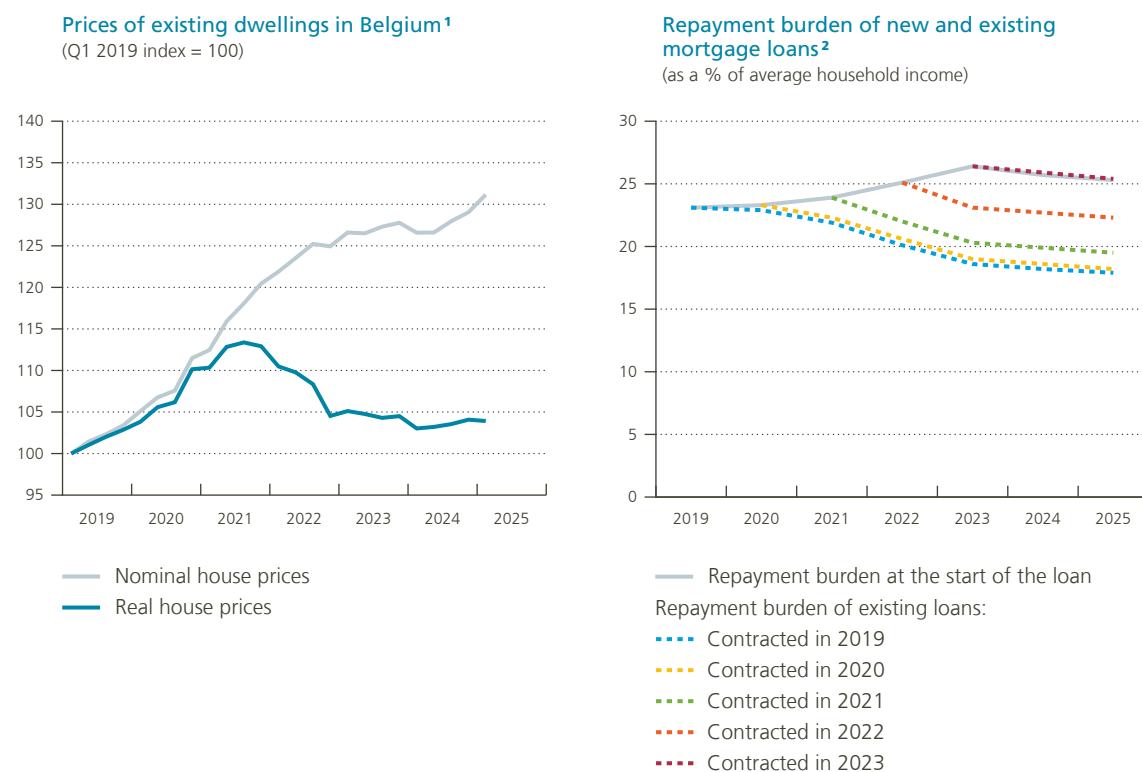
Housing affordability for first-time buyers has deteriorated since 2020, driven initially by a sharp rise in house prices and then by higher mortgage rates. The change in affordability over time is reflected in the change in the repayment burden for a mortgage with a loan-to-value ratio of 80% and a 20-year term (see

Figure 16, right-hand graph). The repayment burden rose substantially from 23.1% of net disposable income in 2019 to 26.4% in 2023. The lengthening of mortgage maturities for first-time buyers tempered the rise in the average annual repayment burden somewhat but implies that repayments are spread over a longer period of time, which increases the total amount of interest to be paid.

Figure 16

House prices and the repayment burden for new and existing fixed-rate mortgage loans¹

(as a % of average household income)



Sources: NBB, FPS Economy.

- 1 The house price index corrects for the type of housing and location but does not take into account other characteristics of the property (except in Q4 2024 and Q1 2025). Real house prices are deflated by the private consumption deflator.
- 2 The solid line shows the repayment burden at the start of the loan, while the dotted lines show how the repayment burden has evolved for loans taken out in recent years. The indicator is based on the assumption that a household with average disposable income buys an average-priced home and finances 80% of the purchase price with a 20-year fixed-rate mortgage loan. It does not take into account the tax deductibility of the mortgage or the associated transaction costs. The average house price in Belgium is used and is not adjusted to reflect changes in the characteristics of houses sold over time (except in Q4 2024 and Q1 2025). For 2025, only data for the first quarter of the year are available.

However, the unexpected surge in inflation in 2022 led to significantly lower mortgage payments relative to income for homeowners with existing fixed-rate mortgages. These households, which took out a mortgage when borrowing costs were historically low or refinanced at favourable conditions, have been shielded from the recent rise in interest rates. At the same time, their nominal income has risen very sharply due to automatic inflation-linked wage indexation, easing their monthly repayment burden. Although indexation in the wake of an unexpectedly high episode of inflation merely offsets the rising cost of living and does not increase real purchasing power, it does reduce the relative monthly repayment burden (Langenus and Reusens, 2025). As incomes rise and repayments remain constant, households naturally have more money available to spend on other things. The right-hand graph in Figure 16 illustrates this point: the repayment burden for mortgages taken out between 2019 and 2021 declined markedly in 2022 and 2023 as household income surged. In this

sense, these households indirectly benefited from the 2022 inflationary shock. Housing has become particularly affordable for households with a low fixed-rate mortgage that purchased their home before the pandemic-driven surge in house prices, especially those still benefiting from large regional mortgage tax deductions, which have been phased out across Belgium in recent years.

Finally, the rise in interest rates has increased – or will increase – mortgage payments for homeowners with a variable-rate mortgage. This type of mortgage is less prevalent in Belgium than in many other countries and more common among low-income households. Unlike fixed-rate mortgages, variable-rate mortgages are periodically adjusted in line with market interest rates, meaning payments fluctuate along with interest rates, although in Belgium such increases are capped by law at two times the initial rate. The timing and frequency of these adjustments depend on the period for which the rate is fixed in the loan agreement. As a result, depending on whether interest rates have been repriced in recent years, the borrowing costs for these households have risen or will rise in the future. At the end of 2021, 14% of outstanding Belgian mortgages were variable-rate mortgages with an initial rate fixation period of less than three years and have therefore already been affected by rising interest rates. This share is very low, as is also the case in France and Germany. In contrast, countries such as Ireland and Finland have a much higher share of variable-rate mortgages, meaning mortgage holders in those countries have been more strongly affected by the recent interest rate increases.

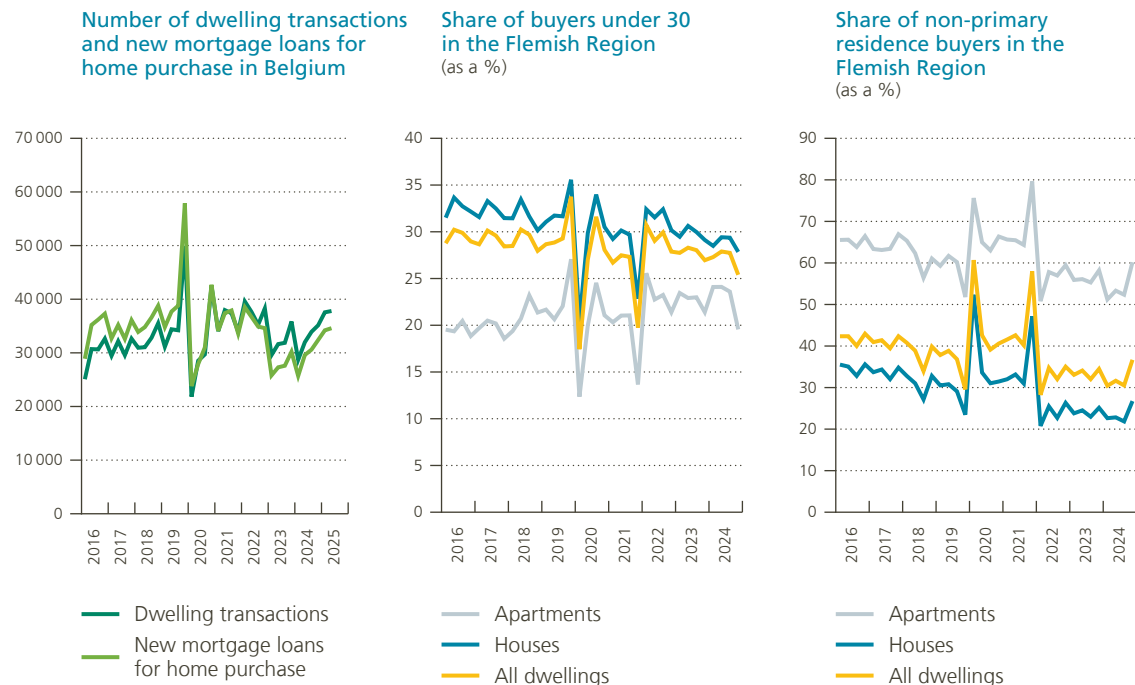
Higher mortgage rates exerted downward pressure on transactions and new mortgage lending for existing dwellings. In Belgium, the number of residential property transactions was down 12% in 2023–2024H1 compared to 2021, although activity began to recover in late 2024 and the first half of 2025 (see Figure 17, left-hand graph). Mortgage loans for existing homes declined even more sharply than transaction volumes, due to a rise in all-cash purchases and an increase in mortgage porting – a mechanism that allows homeowners to transfer their existing mortgage to a new property while retaining the original interest rate and tax benefits. According to the Federation of Notaries, mortgage porting increased from 1 000 cases in Q1 2020 to 4 000 in Q2 2025. This trend can be attributed to the phaseout of regional mortgage tax deductions (such as the Flemish housing bonus in 2020) and the mortgage rate increases seen since late 2022.

In addition to an overall decline in the total number of transactions involving existing dwellings, the proportion of purchases made by young buyers and investors also decreased. Data from the Flemish Region, where such breakdowns are available, show a notable drop in market participation by these groups. First, the share of buyers under 30 fell from an average of 29.2% in 2016–2018 to 27.7% in the first three quarters of 2024 (see Figure 17, central graph). This decline was driven by a 3.0-percentage-point decrease in the share of house purchases by this group, which was only partially compensated by an increase of 3.7 percentage points in their share of apartment purchases (a smaller segment of the market). It should be noted, however, that the share of young borrowers (defined as those below 35 years of age) in new mortgage loan production increased from 35.6% in 2016–2018 to 41.8% in 2024. This discrepancy may reflect the broader definition used for young borrowers, the national scope of mortgage data and the increased prevalence of all-cash purchases and mortgage porting among older borrowers, enabling some to acquire a new property without taking out a new mortgage. Second, investor activity in transactions involving existing dwellings also declined, partly as a result of higher interest rates, but more importantly due to the 2022 Flemish reform of registration duties, which lowered rates for sole and owner-occupied residences and raised them for second homes, thereby discouraging purchases for investment purposes. The share of transactions in the Flemish Region not benefiting from the reduced registration duty rate for sole and owner-occupied residences fell from 40.4% in 2016–2018 to 30.9% in the first three quarters of 2024. However, this classification is based on the rate of registration duty paid, which may include buyers who deliberately misrepresent their intentions in order to qualify for the reduced rate, without genuinely intending to occupy the property as their sole main residence. As a result, the observed strong decline in investor activity is likely overstated. Finally, the share of investors in the new-build segment is expected to have increased, as VAT applies uniformly to all buyers, regardless of whether the property is intended for personal use or for investment purposes.

Figure 17

Number of transactions and mortgages on existing homes in Belgium and buyer profile in the Flemish Region¹

(as a % of average household income)



Sources: NBB, FPS Economy, Vlabel.

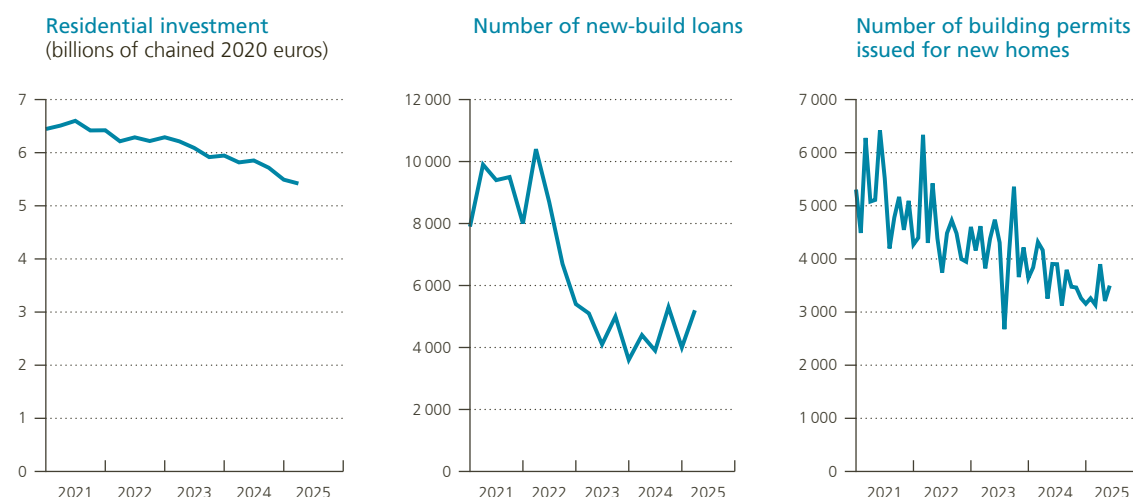
¹ The dataset on buyer profiles was developed by the Flemish Tax Administration in collaboration with Flemish Steunpunt Wonen. The statistics identify “non-primary residence buyers” based on the rate of registration duty paid. The number of buyers is used to calculate the share, with a couple buying a house counting as two buyers. It is worth noting that the sharp fluctuations in dwelling transactions observed at the end of 2019 and in early 2020, as well as at the end of 2021 and in early 2022 and the end of 2024, were largely driven by policy changes in the Flemish Region. Specifically, the phase-out of the tax deduction for mortgage repayments in January 2020 and the reform of registration duties in January 2022 and January 2025 led to temporary surges in activity as buyers rushed to benefit from the expiring incentives.

Finally, higher interest rates have contributed to the marked slowdown in housing construction, although they are not the only factor. As shown in Figure 18, both residential investment and the number of loans for new builds have declined sharply since late 2021, falling by 17% and 52%, respectively. In addition, leading indicators point to a continued slowdown in new construction in the coming years, which is likely to exert upward pressure on house prices and rents. The right-hand graph in Figure 18 highlights a 35% decline in building permits for new homes in Belgium over the first five months of 2025 compared to the 2021 average. Data from surveys of structural building work companies further confirm the weak outlook, showing little improvement in order book assessments or demand expectations. As the drop in new-build loans is much steeper than the decline in mortgage lending for the purchase of existing homes (see Figure 16), this shows that housing investment has been constrained not only by elevated mortgage rates but also by other structural factors. These include rising construction costs – driven by higher labour and material prices and stricter environmental standards – as well as more uncertain and prolonged permit procedures, with a growing number of objections. In addition, the relatively less favourable tax treatment of new builds – notably the 21% VAT rate compared to the recently lowered registration duty on existing homes in the Flemish and Walloon Regions – and the shift towards selling projects after completion rather than off-plan, which forces developers to pre-finance a larger

share of building costs, have weighed on investment, especially in the current high interest rate environment.³² Looking ahead, this decline in supply is expected to drive up both house prices and rents in the coming years, posing a significant risk to housing affordability.

Figure 18

New construction indicators



Sources: FPS Economy, NBB.

5.3 Implications for inequalities between households

The impact on households of the inflationary shock and the subsequent rise in interest rates – more specifically in terms of their financial decisions, saving and consumption patterns and housing affordability – appears to vary depending on the level and structure of household income and wealth. This sub-section delves deeper into these aspects using recently released datasets that take into account heterogeneity in household income and wealth.

Heterogeneity among households in terms of income and consumption is captured by the **distributional national accounts (DNA)**. These experimental statistics, released in June 2025 and prepared by Eurostat in collaboration with participating national institutions (including the NBB), combine granular survey data with macroeconomic data on income and consumption from the national accounts. They allow household disposable income and consumption expenditure to be broken down by income quintile³³ and provide insight into how macroeconomic shocks affect different segments of the population. Unlike the official national accounts, however, these data are not yet produced at regular intervals.

32 Although a reduced 6% VAT rate applies to certain demolition-reconstruction projects under strict conditions, this regime covers only a limited share of new housing.

33 The NBB has issued a description of the methodology used to compile the DNA for Belgium (NBB, 2025a).

Figure 19

Nominal gross disposable income and private consumption of Belgian households, by income quintile¹

(annual rate of change and contribution)



Sources: Eurostat, NBB.

¹ Due to space constraints, the second and fourth income quantiles are not shown here.

² This corresponds to the sum of household gross operating surplus and mixed income.

³ Including social transfers in kind.

At the time of writing, the DNA covered the period from 2009 to 2022, meaning they only partially capture the transmission of the inflationary shock and do not provide information on the effects of the rise in interest rates. In particular, the effect of Belgian wage indexation mechanisms is lagged, with this time lag differing between the public and private sectors. In the public sector, wages are adjusted two months after the four-month moving average of the health index exceeds a threshold known as the “trigger index”, defined as its previous value plus 2%. Social benefits are also adjusted when the trigger index is exceeded, with the adjustment taking place one month earlier than for wages in the public sector. A similar mechanism is applied in a large part of the private sector and concerned 48% of employees in 2022. On the other hand, 40% of employees see their wages indexed on an annual basis, usually in January.³⁴ In practice, this means that the income of a substantial portion of private sector employees was adjusted to reflect the 2022 inflationary shock only in 2023.

While the wages of a substantial share of employees were not adjusted to match the rising cost of living in 2022, the indexation system provided timely and robust protection to low-income households. As illustrated by the upper left-hand graph in Figure 19, households in the first income quintile benefited from a 14.1% nominal increase in gross disposable income (GDI) that year. Given that inflation measured according to the harmonised consumer price index (HICP) stood at 10.3% in 2022, these households experienced an overall real income gain. This development can largely be attributed to the indexation of employee compensation in 2022 and the swift adjustment of social transfers, which constitute a significant portion of the GDI of low-income households. Indeed, when including social transfers in kind (such as for education and healthcare), net social transfers account for 80% of the GDI of households in the first income quintile. In comparison, they represent 56% of GDI for those in the third quintile and 43% for the fifth quintile.

By contrast, for middle- and higher-income households, the increase in nominal income was less pronounced overall in 2022, and even below the inflation rate. The nominal GDI of households in the third and fifth income quintiles rose by 8.7% and 7.1%, respectively, in 2022 (see Figure 19, upper central and right-hand graphs). The slower growth in GDI observed among the most affluent households, i.e. those in the fifth quintile, can be attributed in part to the composition of their income, a higher proportion of which consists of earnings from self-employment and property income. Unlike employee compensations and social benefits, these sources of income are not subject to automatic indexation.

While the DNA data indicate a stronger rise in purchasing power for low-income households than for middle- and high-income households in 2022, there are signs that this trend reversed in 2023. This reversal is not yet reflected in Figure 19, as the data presented extend only to 2022 for the abovementioned reasons, but emerges from an analysis of banking transaction data by Peersman *et al.* (2025). In line with the data displayed in Figure 19, this study confirms that the increase in purchasing power for low-income households in 2022 was largely due to the indexation of wages and social benefits, which outpaced the actual rise in the prices of goods and services in their consumption basket. Moreover, the impact of inflation on these households was mitigated by the social tariff for energy bills, a measure described in Section 4. In 2023, however, this pattern reversed: the health index, which is used to adjust wages, rose at a slower pace than the prices of goods in the consumption basket, whereas the social tariff was phased out. As a result, the purchasing power of low-income households fell, while that of higher-income households continued to rise.

Private consumption expenditure remained generally robust for all income quintiles in 2022. As discussed in Section 3, real private consumption continued to grow following the 2022 inflationary shock, albeit at a much slower pace than in 2021. The lower graphs in Figure 19 show that an increase in (nominal) consumption was observed across the entire population of households, with a markedly more significant contribution for housing and energy-related expenses due to the surge in electricity prices. It is worth noting that low-income households

³⁴ A more detailed description of the Belgian system of automatic wage indexation can be found in Section 3.2 of the Bank's 2022 Annual Report (NBB, 2023a).

– which generally allocate a greater portion of their budget to essential items³⁵ – were more likely to reduce their energy consumption in response to the price shock. Using survey data from May and July 2022, Peersman and Wauters (2024) show that the elasticity of energy demand – i.e. the sensitivity of energy consumption to price changes – is greater among low-income households. They also find that low-income households with limited savings tend to cut back on other types of spending (unrelated to energy bills) to a greater extent, although this effect was considerably mitigated by the extension of the social tariff for gas and electricity. The smaller increase in consumption expenditure among low-income households, despite the overall stronger rise in their disposable income, suggests that higher energy prices led many of them to curb other categories of expenditure (hence the smaller contribution of the latter to total consumption growth in the lower left-hand graph in Figure 19). However, the overall picture that emerges from the lower graphs in Figure 19 – i.e. that low-income households curbed their spending more than higher-income households – likely conceals significant variation within each income quintile, depending on the composition of household consumption expenditure. De Coster *et al.* (2024) illustrate this by calculating household-level inflation rates (taking into account the specific composition of each household's consumption basket and assuming uniform prices). Their analysis shows that inflation rates vary much more within income quintiles than between them. As they put it, the impact of inflation is therefore not simply a matter of “poor versus rich.”

In 2022, the consumption expenditure of middle- and high-income households increased more than their disposable income, indicating that they drew on savings to make up for the incomplete adjustment of their income to the rising cost of living. In this regard as well, the DNA offer valuable insight into the evolution of household saving across income quintiles. First, household saving is heavily concentrated in the fifth quintile, while households in the first quintile have a structurally negative saving rate. This is because the latter group includes households in a precarious situation, particularly single-parent families, as well as retirees drawing on savings accumulated during their working lives. Second, while gross annual savings in the fifth income quintile declined from €56.3 billion in 2021 to €54.3 billion in 2022, i.e. a decrease of 4%, gross savings turned negative in the third income quintile, from €1.4 billion in 2021 to a dissaving of €615 million in 2022. Overall, the gross savings of Belgian households fell from €50.2 billion in 2021 to €41.7 billion in 2022.

The decline in household savings in 2022 translated into a stagnation of bank deposits, particularly among middle-income households. This trend can be seen in the ECB's distributional wealth accounts (DWA).³⁶ These data allow the financial and non-financial assets of Belgian households to be broken down based on net household wealth.³⁷ Figure 20 presents this distribution across three groups: the left-hand graphs show the average value, per household, of various types of assets held by the first five deciles in the net wealth distribution (the “top 50%”), the central graphs display the averages for the sixth to ninth deciles (the “middle 40%”) while the right-hand graphs illustrate the averages for the tenth decile (the “top 10%”). Focusing on the middle 40% (see the upper central graph), the upward trend in the outstanding level of bank deposits held by this segment of the population came to a halt. In 2022, their deposits increased only marginally, from €86 000 to €86 600 per household. In 2023, despite the mild rebound in the household saving rate³⁸ (see also Section 3), deposits declined across all wealth categories, largely due to withdrawals from savings accounts in favour of the one-year State note issued by the Belgian Debt Agency in September. This shift from bank deposits to debt securities was most pronounced in the top 10% of the wealth distribution, where the average investment in debt securities surged from €47 300 to €112 600 per household.

35 According to the DNA, expenses related to housing, water, electricity, gas and other fuels represent 22% of the consumption expenditure of households in the first income quintile. This is two percentage points more than for households in the fifth quintile.

36 The distributional wealth accounts are compiled by the European System of Central Banks by combining national accounts data with the results of the Household Finance and Consumption Survey (HFCS). These data are available on a quarterly basis and covered the full year 2024 at the time of writing. See Engel *et al.* (2022) for the methodological aspects.

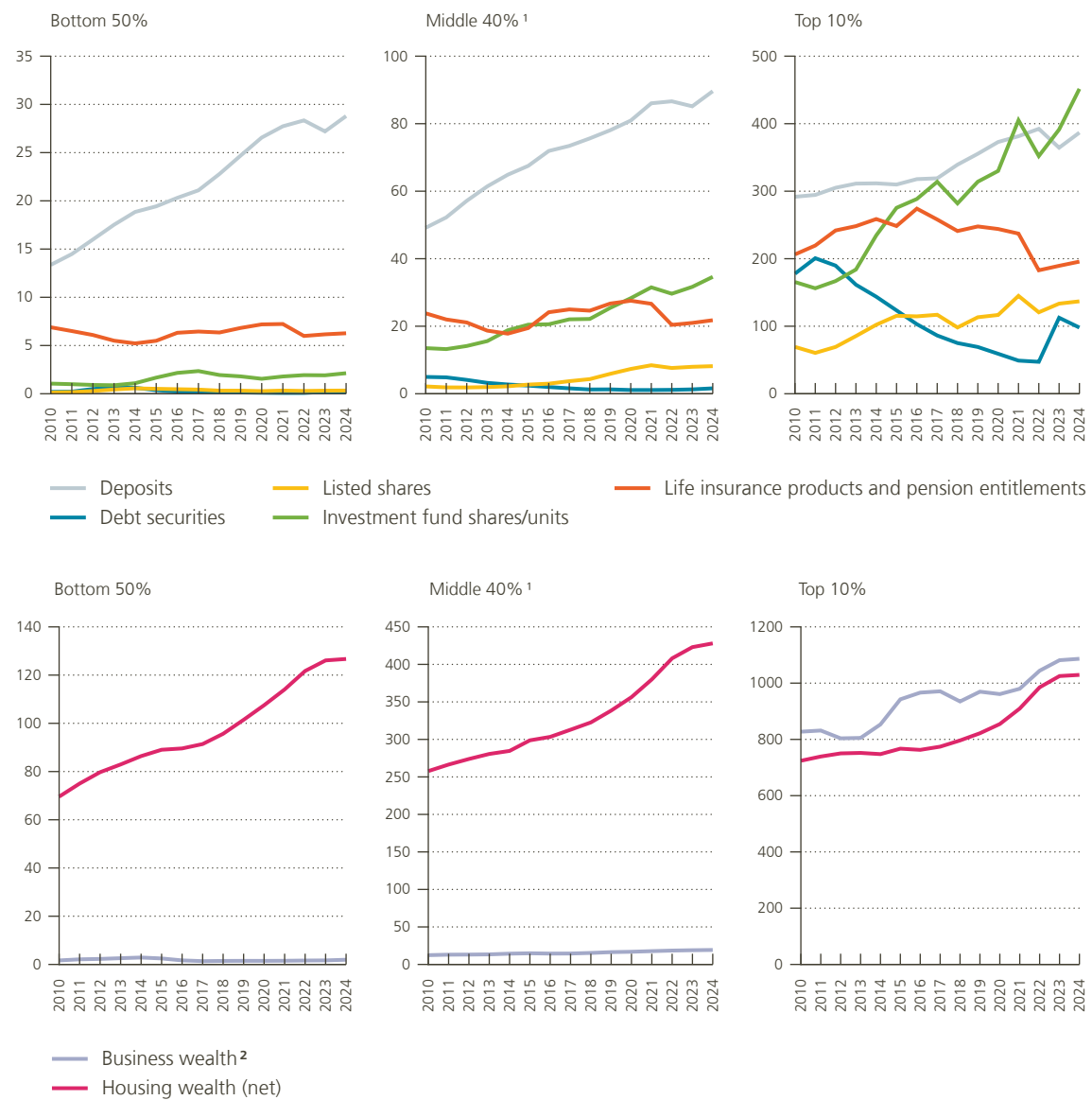
37 Net household wealth is defined as the difference between the total value of households' (financial and non-financial) assets and their liabilities.

38 According to NAI statistics, the household saving rate fell from 18.6% in 2021 to 13.4% in 2022. It then rose slightly to 13.7% in 2023 and to 13.8% in 2024.

Figure 20

Household assets by wealth category and asset type

(household average, € thousand)



Source: ECB.

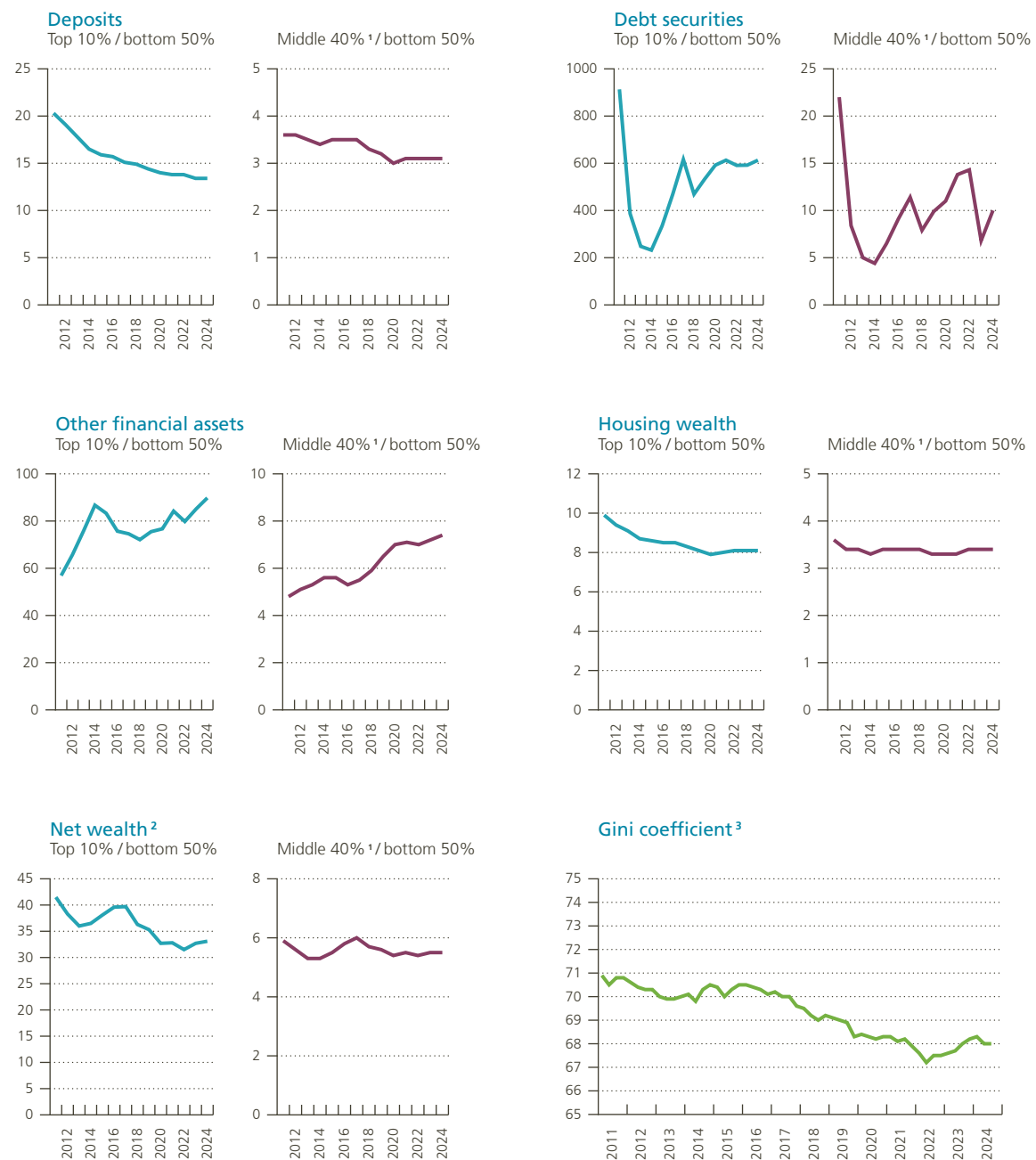
1 The middle 40% of households are those situated between the bottom 50% and the top 10%, i.e. those in deciles 6 to 9.

2 Business wealth includes unlisted shares and assets used by households to run unincorporated enterprises.

Figure 21

Concentration of assets and net wealth within the population of Belgian households

(ratio of the average amount per household in the relevant category to the average for the bottom 50%, unless otherwise stated)



Source: NBB.

1 The middle 40% of households are those situated between the bottom 50% and the top 10%, i.e. those in deciles 6 to 9.

2 Net household wealth is defined as the difference between the total value of households' (financial and non-financial) assets and their liabilities (debts).

3 The Gini coefficient summarises the distribution of net wealth on a scale from 0 to 100. A value of 0 represents perfect equality, or the situation in which everyone has the same amount of net wealth, while a value of 100 indicates maximum inequality, or the situation in which all income is concentrated in the hands of a single individual.

While home ownership has generated capital gains for a broad range of Belgian households over the past decade, the rise in financial asset prices following the energy shock has mainly benefited the wealthiest. As noted in Section 5.2, house prices rose significantly throughout 2022, but growth began to slow in 2023. These developments were reflected in the value of household real estate wealth, which stagnated in 2024 across all wealth categories. By contrast, the valuation gains on equities and investment fund shares mentioned in Section 5.1 led to an increase in the wealth of the richest households (and to a lesser extent that of the middle 40% of households), which own most of these financial assets. These capital gains are of course closely linked to developments on the financial markets, where stock prices have been on the rise since mid-2022 (see also Section 5.1). In addition, the value of business wealth – which includes both unlisted shares and assets used by households to run unincorporated enterprises, and which is also concentrated in the top 10% of households – rose significantly in 2022 and 2023. The upper two rows in Figure 21 show the share of bank deposits and debt securities held by the top 10% of households and the middle 40% compared to the bottom 50%. These indicators did not change significantly after the shift from bank deposits to debt securities in 2023. The ownership of the latter category of assets indeed remains concentrated among the wealthiest segment of the population. The central left-hand graph illustrates the growing concentration of financial wealth, driven by the abovementioned rise in asset prices, whereas the central right-hand graph shows a halt in the trend toward the deconcentration of real estate wealth in 2022, coinciding with the rise in interest rates. As noted by De Mulder *et al.* (2024), this trend contributed to the decline in wealth inequality in Belgium, as rising property prices during the 2010s benefited a broad range of households, not just the wealthiest. This is because housing wealth is more evenly distributed within the population of Belgian households than other types of assets. Ultimately, these various dynamics led to a marginal increase in the overall level of inequality in Belgium, as reflected by the Gini coefficient shown on the lower right-hand graph in Figure 21.

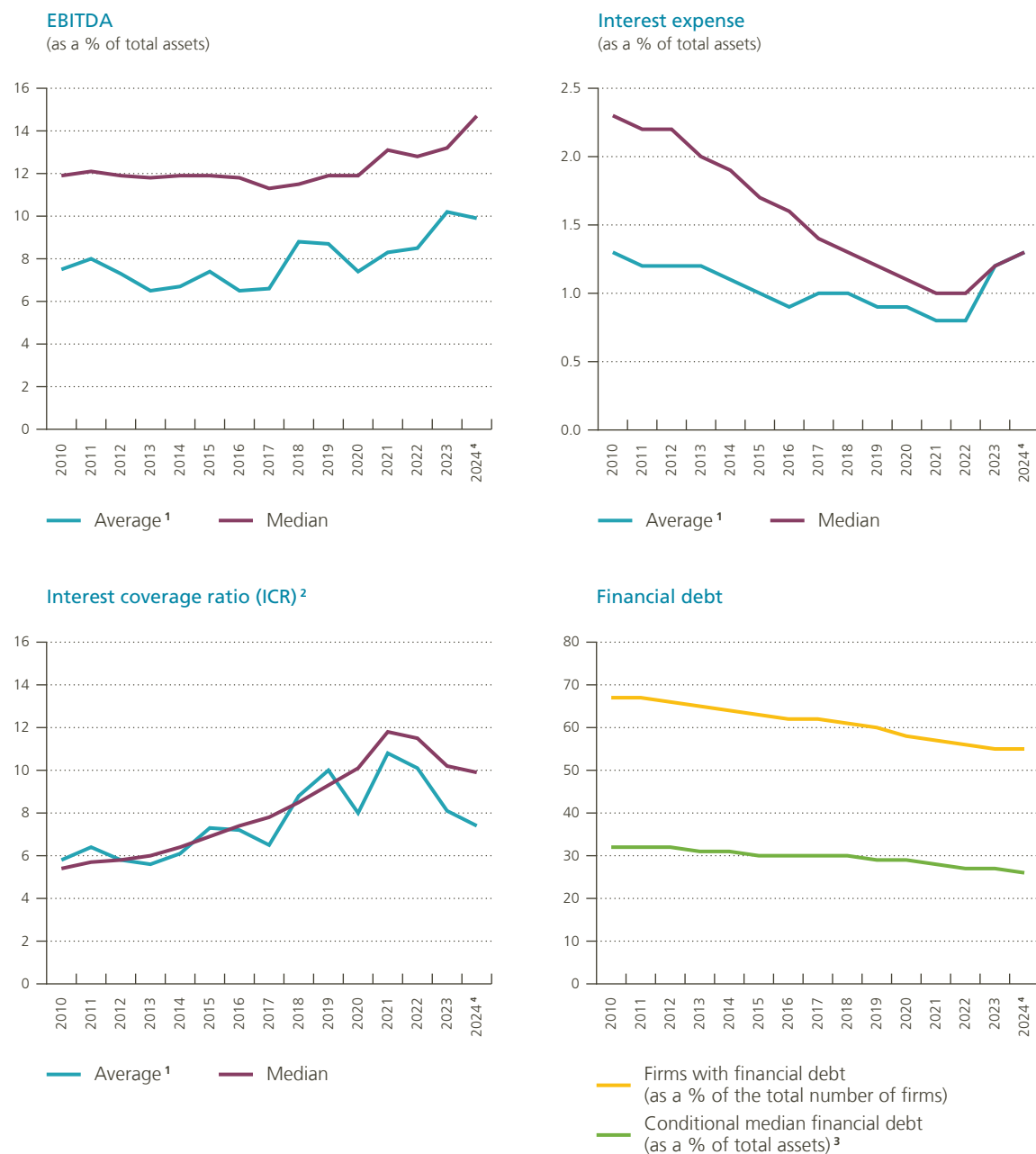
6. Impact on non-financial corporations

Belgian non-financial corporations (NFCs) essentially faced three shocks in 2022: higher energy prices which pushed up their production costs, a rise in wages triggered by automatic indexation mechanisms, and higher funding costs due to the tightening of monetary policy. This section discusses the trajectory of firms' operating profits, which reflect the performance of core business activities, and their overall profitability, which also accounts for financial costs, as well as changes in debt and investment levels following these shocks.

Overall, Belgian NFCs have been able to maintain a relatively high level of operating profit despite rising input prices and wage costs. Bijnens and Duprez (2022) estimate that firms, on average, passed on about 60% of higher input prices to customers, absorbing the rest through lower profit margins. Bijnens *et al.* (2023) attribute most of the 2023 price increases to higher input costs, with wage growth playing a smaller role. They also show that part of the recent increase in production costs was offset by a decline in markups, which helped contain the impact of wage indexation on consumer prices. Lower markups are automatically reflected in firms' profit margins. This is confirmed by the firm-level data summarised in Figure 22: the median value of Belgian businesses' EBITDA (i.e. earnings before interest, taxes, depreciation and amortisation) fell from 13.8% to 12.8% of total assets between 2021 and 2022 (see the upper left-hand graph). This decline, by one percentage point, should however be put into perspective in view of the unusually high corporate revenue recorded in 2021, which was inflated by a series of lump-sum transfers and tax exemptions granted by policymakers during the Covid-19 pandemic. Median EBITDA rose again in 2023 and 2024, a trend that naturally masks significant profitability-related heterogeneity within the population of Belgian firms. Average EBITDA, in this case weighted by firm size and therefore mainly driven by a limited number of large multinationals, has proven equally robust in the last few years.

Figure 22

Profitability and debt of Belgian non-financial corporations



Source: NBB.

1 The average is calculated as the sum of firm-level values for the indicator considered divided by the sum of firm-level total assets.

2 The interest coverage ratio is the ratio of EBITDA to interest expense.

3 The conditional median is calculated for the population of firms with financial debt.

4 The data for 2024 are incomplete.

While operating profits have proven resilient, the rise in funding costs caused by the interest rate hike had a more discernible impact on firms' overall profitability. As can be seen in the upper right-hand graph in Figure 22, Belgian firms' interest expense rose sharply from 0.8% of their assets in 2021 to 1.2% in 2023, or from 1.0% to 1.2% in median terms. In general, changes in interest rates are more rapidly reflected in the interest paid by businesses than in that paid by households. The reason for this is that a greater proportion of

business loans, such as working capital loans, have shorter maturities (see also Section 2) and are more likely to be rolled over at a higher cost shortly after a rise in lending rates. Indeed, according to the balance sheet items (BSI) statistics, 24% of outstanding corporate loans granted by Belgian banks had an original maturity of up to one year in mid-2022. By way of comparison, this was the case for only 2% of loans to Belgian households.

However, Belgian firms have been able to weather the rise in interest rate thanks to lower debt levels.

The lower left-hand graph in Figure 22 shows firms' debt servicing capacity, measured by the interest coverage ratio (ICR), i.e. the ratio of EBITDA to interest expense. The (median and average) ICR has fallen since interest rates rose in 2022 but remains well above the levels seen in the previous decade. In other words, even after the recent monetary policy tightening, firms allocate a smaller share of their profits to debt servicing than in the previous decade. The reason is that they have reduced their overall reliance on borrowing. The lower right-hand graph in Figure 22 indeed shows that the share of firms reporting financial debt on their balance sheet has gradually declined over the past decade to around 55%. Moreover, for firms with this type of debt, the median value decreased to 27% of total assets in 2023, which is four percentage points less than ten years earlier.

The deleveraging observed among Belgian businesses and, consequently, their stronger resilience in the face of higher funding costs resulted from improved profitability over the past decade. The upper left-hand graph in Figure 23 shows the evolution, at the macroeconomic level, of the profit share of non-financial corporations, calculated as the ratio of their gross operating surplus (i.e. value added less the compensation of employees) to their value added. This indicator increased significantly, from 37% of value added in 2013, a figure below the euro area average, to 44% in 2022. Higher operating surpluses translated into a higher gross saving rate, which rose from 26% of value added to 30% over the same period (see the upper right-hand graph in Figure 23). As a rule, firms can use their savings either to invest in fixed capital or to acquire financial assets. However, since their investment rates have been trending down over the last decades (see below), Belgian businesses have tapped into their increased savings to expand their cash reserves, from 24.2% of GDP in 2013 to 32.5% in 2022 (see Figure 23, lower left-hand graph). This increase in cash reserves in the Belgian corporate sector has been observed in the rest of the euro area as well. As a result, although the amount of bank loans continued to grow, firms have become relatively less reliant on this source of financing, especially short-term loans. They usually resort to this type of debt when they need to meet immediate payment obligations and their cash reserves are low. Lower demand for credit is a key factor behind the contraction in the ratio of corporate loans to GDP, which fell from 169.7% in 2016 to 122.6% in 2024 (see Figure 23, lower right-hand graph).

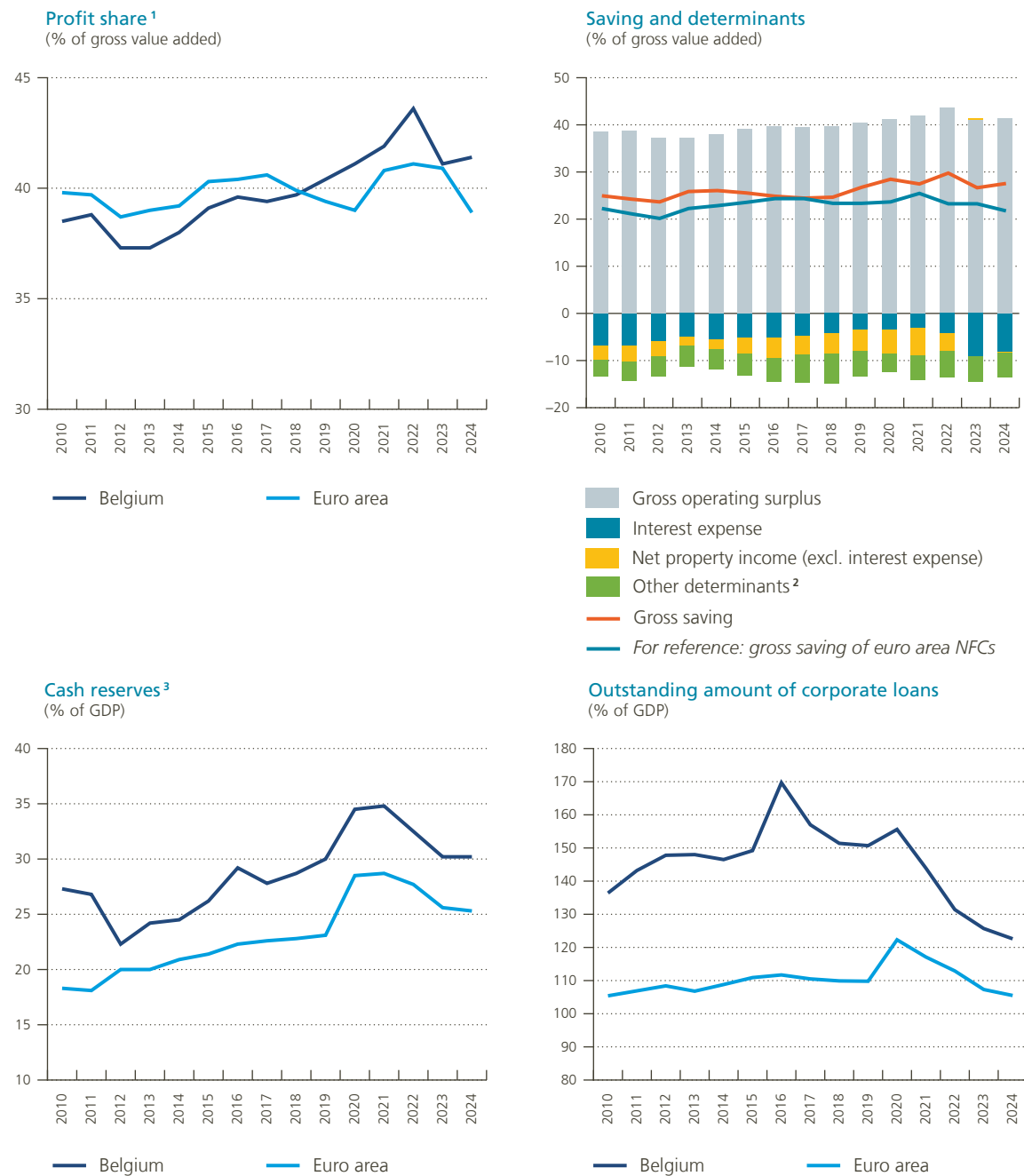
Various factors contributed to the rise in Belgian firms' operating surplus over the past dozen years.

De Keyser *et al.* (2023) have identified several of them, one of which is a composition effect: more productive sectors, such as the pharmaceutical industry, have gained weight in the economy. Furthermore, increased market concentration, particularly in the service industries, is likely to have enhanced firms' market power and therefore their profit margins. More importantly, the rise in the profit share reflects a decline in unit labour costs (i.e. wage costs relative to value added) and, consequently, a lower wage share in the value added of NFCs. This trend stems not only from productivity gains but also from a series of wage moderation policies implemented during the 2010s. As detailed by Basselier and Jonckheere (2025), these measures included the imposition of a 0% cap on negotiated real wage increases from 2013 to 2015, a temporary suspension of automatic wage indexation in 2015, a gradual reduction in employer social security contributions as of 2016, and amendment of the 1996 Competitiveness Act in 2017 to change the method used to calculate the margin for real wage increases. Therefore, the profit share in value added³⁹ – which mirrors the wage share, since operating surplus corresponds to value added less wages – rose gradually from the mid-2010s until 2022, when it peaked despite soaring inflation. This is because the effect of wage indexation lags behind increases in consumer prices (see Section 5.3). It was not until 2023 that this mechanism began to significantly impact firms' profit margins.

³⁹ It should be noted that, unlike the median and average EBITDA shown in Figure 22, the profit share calculated on the basis of the national accounts statistics is not influenced by sales volume.

Figure 23

Profit share, saving and borrowing of non-financial corporations



Sources: BIS, Eurostat, NBB.

¹ Ratio of gross operating surplus to gross value added at basic prices.

² Net social contributions, taxes and other current transfers.

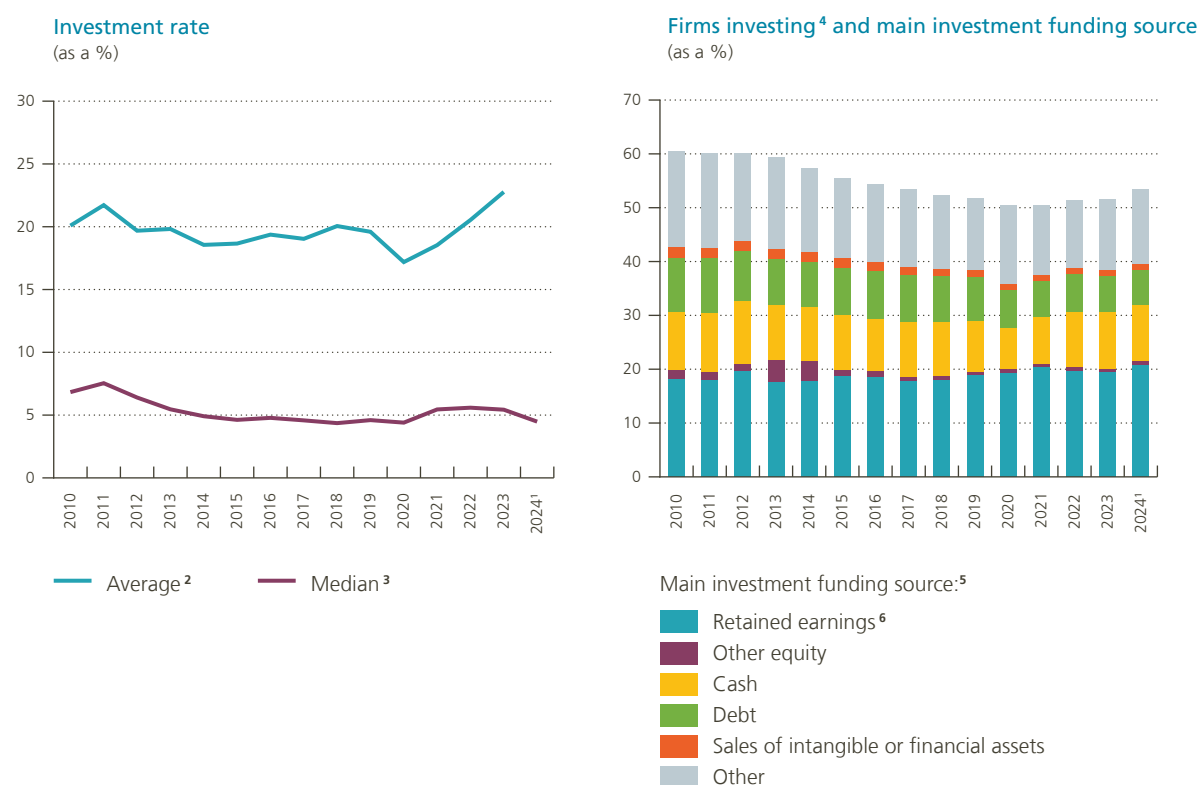
³ Outstanding amount of currency and deposits held by non-financial corporations.

Until 2022, firms' profitability was also boosted by low interest rates. This can be seen from the development of funding costs and the ICR, as shown in Figure 22. The upper right-hand graph in Figure 23 also shows that the total interest paid by NFCs as a share of their value added significantly declined from 2011 to 2021, falling from 6.9% to 3.0%. Subsequently, the rise in interest rates naturally translated into significant increases in their interest expense in 2023 and 2024, thus contributing to a decline in the saving rate. However, at the aggregate level, this negative contribution was largely offset by an increase in interest income, probably related to intra-group loans, received by certain companies.

Another driving factor behind the build-up of corporate cash reserves and deleveraging is the secular decline in business investment, a pattern observed since the 1990s. This structural decline in investment is illustrated by the left-hand graph in Figure 24, which plots the mean and median investment rate in tangible fixed assets (e.g. land, buildings, machinery, furniture and fixtures, etc.). The results appear somewhat paradoxical given the increasingly favourable funding costs during most of the period covered by Figure 24, especially following the quantitative easing that took place as from 2015. The decline was in fact driven by several factors, including subdued growth expectations and heightened economic uncertainty (Piette and Tielens, 2023).

Figure 24

Investment rate and funding sources of non-financial corporations



Source: NBB.

1 The data for 2024 are incomplete.

2 The average investment rate is defined as aggregate net purchases of tangible assets at time t divided by the aggregate net stock of tangibles at $t-1$. Both flows and stocks are expressed in net terms, i.e. after depreciation and revaluations.

3 The median investment rate is the median of firm-level purchases of tangible assets at time t divided by the firm-level net stock of tangibles at $t-1$. Both flows and stocks are expressed in net terms, i.e. after depreciation and revaluations.

4 For firms with an investment rate higher than 0%.

5 The main source of funding is determined per firm and per year by identifying the balance sheet item with the largest change from the previous year.

6 Including reserves.

The monetary tightening that began in 2022, however, marked a significant uptick in investment rates. The average investment rate is often driven by a few large multinationals; notably, the median investment rate (across individual firms) also rose, albeit only slightly. Anecdotal evidence from interviews with business leaders conducted for the NBB Business Echo suggests that this revival of investment rates was due, in particular, to investment in digitalisation and automation in response to higher wage costs and labour shortages. Investment in the greening of production processes also became more substantial, in order to reduce exposure to energy price volatility and comply with environmental regulations (NBB, 2023a; 2025b). At first glance, this uptick in investment amid rising interest rates seems to contradict a fundamental tenet of investment theory, which posits that higher rates should suppress investment by increasing borrowing costs. However, as noted above, many firms had built up substantial cash reserves during the pandemic and the preceding low-interest-rate era. These reserves enabled them to fund recent investment without recourse to external borrowing and to maintain their investment plans despite tighter lending conditions. This interpretation is borne out by the right-hand graph in Figure 24, which highlights the primary sources of investment financing and confirms that investment has largely been funded through internal sources – cash holdings and retained earnings – rather than external debt. Finally, concurrent inflationary pressures prompted firms to redirect cash holdings to real investments.

7. Conclusion

In 2022, the Belgian economy experienced the largest surge in inflation seen in decades. The shock was primarily caused by energy prices, although inflationary pressures had already emerged at the end of 2021. These were essentially associated with the global economic recovery following the Covid-19 pandemic, which had driven up commodity prices. The build-up of inflation prompted the European Central Bank to raise interest rates; these higher rates affected Belgian banks and households, mortgage and housing markets, non-financial corporations and public finances.

Banks were able to pass on the increase in their marginal funding costs through their new business lending rates, as evidenced by the strengthening of bank profitability during the tightening cycle. Banks' marginal funding costs increased during the tightening cycle, initially driven by higher market rates and later by rising deposit rates. The rise was more contained in Belgium, however, as Belgian banks rely more heavily on deposits, the rates for which rose more gradually. The rapid increase in new lending rates is among the factors that contributed to larger interest margins, although this phenomenon was more limited in Belgium, reflecting the relatively high share of fixed-rate loans. The higher return on equity of Belgian banks should allow them to raise additional capital, thus ensuring that shareholders support the organic growth of the sector's balance sheet in accordance with credit demand in the wider economy.

Belgian households restructured their financial portfolios in response to rising inflation and interest rates. As the real return on sight and savings deposits turned strongly negative, households increasingly shifted their savings to term deposits, which offered more attractive yields. The 2023 issuance of a one-year State note with a competitive return further accelerated this rebalancing, drawing substantial household savings away from banks. Banks absorbed this outflow by drawing on their liquidity buffers. Household holdings of investment fund shares, equities and life insurance products remained largely unchanged. However, capital gains were recorded on some of these assets in the years following the inflationary shock.

Higher mortgage rates reduced buyers' borrowing capacity and demand for housing investment and led to a cooling of the Belgian housing market. However, house prices did not decline as the impact of rising rates was largely offset by longer mortgage maturities and a very strong increase in household income due to automatic wage indexation. This growth in household income led to significantly lower mortgage payments relative to income for homeowners with existing fixed-rate mortgages, while the debt repayment burden deteriorated for new buyers. Finally, higher interest rates contributed to a marked decline in housing construction, a development that raises concerns as to future housing supply and affordability.

The inflationary shock and its consequences affected Belgian households unevenly in 2022. On the one hand, low-income households benefited from the automatic indexation of wages and benefits, as well as the social tariff for gas and electricity, which helped shield their disposable income from inflation. On the other hand, higher exposure to energy costs led them to cut back on other expenses. Middle- and high-income households, which rely more on non-indexed sources of income such as from self-employment and investments, saw weaker income growth and had to draw on their savings to maintain their consumption levels in the months following the inflationary shock and before the wage indexation that occurred in 2023. This led to an overall decline in household savings and a stagnation of bank deposits, particularly among middle-income households. Meanwhile, the appreciation of financial assets disproportionately benefited the wealthiest households, contributing to a marginal rise in inequality, as reflected in recent wealth concentration metrics.

Firms' operating profits, overall profits and investment rates have proven resilient in Belgium. Firms maintained strong levels of operating profit by passing rising input costs on to consumers through higher prices. Moreover, many businesses entered the energy crisis with high profit margins and substantial cash reserves, allowing them to weather the initial shock on their production costs. Their profitability and cash reserves were bolstered by wage moderation policies implemented since the mid-2010s and the low funding costs that prevailed under the accommodative monetary policies in place prior to 2022. In particular, the latter enabled firms to expand their profit margins and retained earnings and use those funds to strengthen their balance sheet, improve their liquidity position and reduce their reliance on bank debt. This lower level of indebtedness has had a two-fold advantage. First, it has kept interest expense in check in a rising interest rate environment, thereby dampening the adverse impact on firms' bottom-line. Second, it has allowed firms to finance new investments without recourse to external borrowing and enabled them to maintain their investment plans despite tighter lending conditions.

After a long period of low funding costs, the rise in interest rates began to exert additional pressure on Belgium's public finances. While the initial impact in 2022 was muted due to favourable refinancing conditions and long-term debt strategies which limited the annual volume of maturing debt, the situation changed in 2023 as refinancing gains diminished and interest expense rose significantly. Higher borrowing costs did not make the government borrow less: in fact, primary deficits increased under the impetus of temporary inflation-related support measures and structurally rising expenditure items. All of this has raised concerns about debt sustainability. Although high nominal GDP growth temporarily offset the effects through a favourable interest rate-growth differential, the narrowing of this gap risks triggering an interest rate "snowball effect", whereby rising interest expense fuels further debt accumulation, leading to an unsustainable fiscal path. In any case, the high and persistent primary deficits must be turned into surpluses in order to put the public debt ratio on a downward path.

The NBB's BEMGIE model provides a comprehensive framework that gathers some of the aforementioned forces into a unified narrative. The model traces the impact of various shocks – energy and import prices, domestic prices, monetary policy and fiscal intervention – and unpacks their effects on macroeconomic indicators. Two key insights can be derived from this exercise. First, monetary policy remained accommodative throughout the inflationary period, providing crucial support to domestic demand. In particular, deviations from the historically estimated monetary policy rule significantly bolstered private consumption and investment in 2021 and 2022, even as inflationary pressures intensified. Second, fiscal policies helped to sustain real growth (mostly through public expenditure) and relieve inflationary pressures (through tax credits and targeted and untargeted energy subsidies).

In summary, the Belgian economy has demonstrated notable resilience to the dual shocks of inflation and rising interest rates, thanks to specific features such as widespread support for household purchasing power, mainly through automatic income indexation, banks' reliance on a stable deposit funding base, the predominance of fixed-rate mortgages, and robust profit margins and sizeable financial buffers in the corporate sector prior to the crisis. This overall robustness, however, masks an uneven impact on households and between existing mortgage holders and first-time buyers. Moreover, while public investment has helped sustain real activity thus far, persistent fiscal deficits in a higher-interest-rate environment may pose significant challenges for debt sustainability going forward.

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Conventional signs

e.g.	exempli gratia (for example)
<i>et al.</i>	et alia (and other)
etc.	et cetera (and other similar things)
i.e.	id est (that is)
ppt	percentage points
€	euro
%	percent

List of abbreviations

Abbreviations

APP	Asset purchase programme
BEMGIE	Belgian Economy in a Macro General International Equilibrium
BIS	Bank for International Settlements
BSI	Balance sheet items
CSDB	Centralised Securities Database
DFR	Deposit facility rate
DNA	Distributional national accounts
DWA	Distributional wealth accounts
EBITDA	Earnings before interest, taxes, depreciation and amortisation
EC	European Commission
ECB	European Central Bank
EONIA	Euro overnight average index
ESTR	Euro short-term rate
FPS	Federal public service
GDI	Gross disposable income
GDP	Gross domestic product
HICP	Harmonised Index of Consumer Prices
ICR	Interest coverage ratio
ILS	Inflation-linked swap
IRF	Initial rate fixation
LSEG	London Stock Exchange Group
MCF	Marginal cost of funds
MIR	Monetary interest rates
NAI	National Accounts Institute
NBB	National Bank of Belgium
NFC	Non-financial corporation
NGEU	Next Generation EU
OIS	Overnight indexed swap
OLS	Ordinary least squares
OLO	Belgian linear bond
PEPP	Pandemic emergency purchase programme
TTF	Title transfer facility
VAT	Value added tax

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