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Macroprudential policies to mitigate housing market risks

Country case study: Belgium

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Macroprudential policies to mitigate housing market risks
Case study – Belgium

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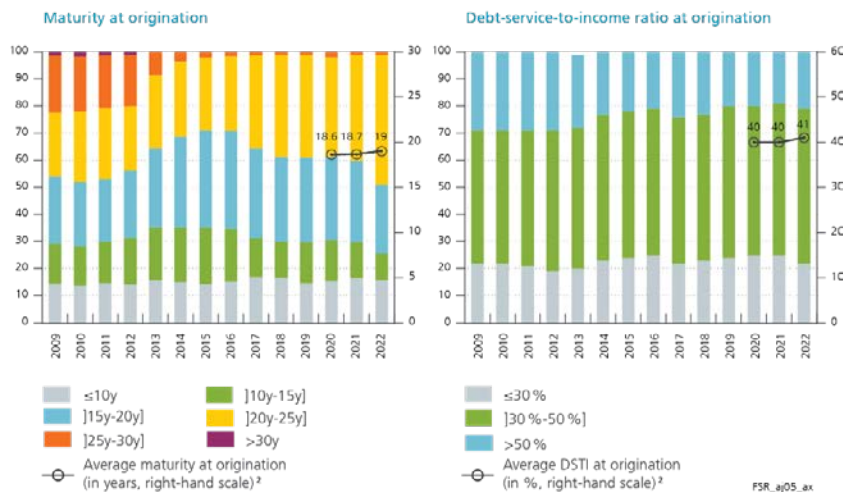
1.   Housing as a source of risk

The quantitative indicators used to assess the build-up, decline and residual stock of risks arising from housing and mortgage market developments are the first pillar of the integrated risk monitoring and policy framework of the National Bank of Belgium (NBB) to mitigate housing-related risks. The standard indicators covering developments in the housing market (house prices, valuation indicators, transactions, housing supply) and mortgage lending (housing loans, household debt) are complemented by extensive data collection on mortgage loans granted and held by Belgian banks or insurance companies. This data collection was launched in 2010 and covers more than 95% of the stock of Belgian mortgage loans.
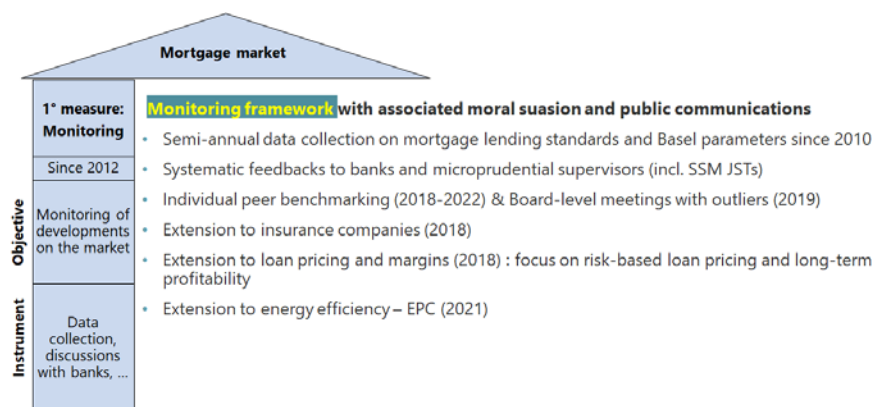
Since 2012, the data collection has been used in every reporting round (semiannual for banks, annual for insurers) to provide the reporting institutions with detailed peer benchmarking feedback and it has been very instrumental in having (robust) dialogues with institutions regarding credit policies, outlier positions in terms of credit standards and a better understanding of market developments more generally. In particular, this peer benchmarking and related moral suasion by the NBB contributed to a marked reduction of long loan maturities in new mortgage loan production after 2012 (see Graph 1) in order to create the necessary room for manoeuvre to absorb a significant increase in mortgage loan interest rates in the future.

Graph 1 – Maturities and debt service-to-income ratios at origination[1]

As a percentage of total loans granted during a particular vintage

Maturity at origination

Debt-service-to-income ratio at origination

Legend (Maturity at origination):
- ≤10y
-]10y-15y]
-]15y-20y]
-]20y-25y]
-]25y-30y]
- >30y
- Average maturity at origination (in years, right-hand scale)[2]

Legend (Debt-service-to-income ratio at origination):
- ≤30%
-]30%-50%]
- >50%
- Average DSTI at origination (in %, right-hand scale)[2]

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[1] These data include refinanced loans recorded as new contracts (such refinanced loans may artificially improve the credit standards of new mortgage loans, as a proportion of the loan has already been repaid). [2] The average maturity and debt service-to-income (DSTI) ratio at origination are available since 2020.
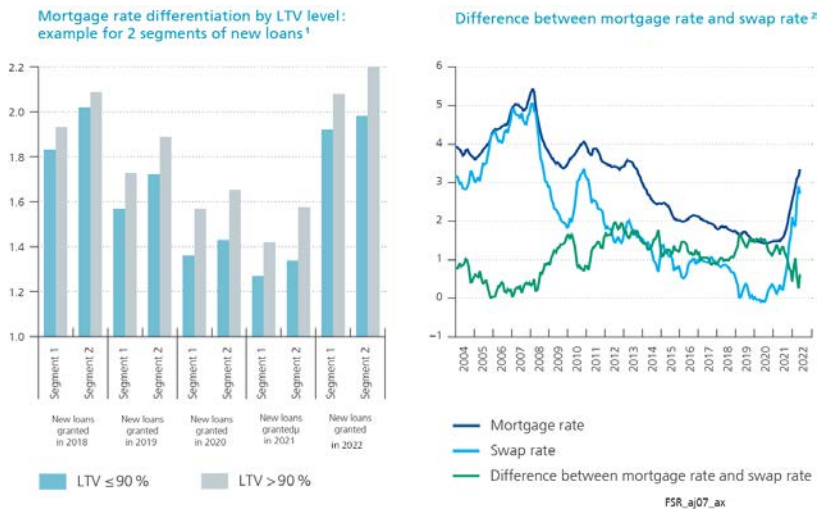
Source: NBB (PHL survey of the banking sector).

The granular information on credit standards and the related Basel parameters (PD, LGD, average risk weight) provided the basis for the activation of the second pillar in 2013: a macroprudential capital buffer for banks using an internal ratings-based (IRB) model (see below for more details). In 2018, the data collection was extended to loan pricing and margins, including a breakdown for the different composing elements of this margin (risk premiums, cost coverage and return on allocated equity). An illustration can be found in Graph 2.

As the data collection showed a deterioration of lending standards amidst very dynamic market conditions, the NBB decided in 2019 to complement the existing capital buffer (covering the stock) with the third pillar: supervisory expectations akin to borrower-based measures, which started in 2020 and focused on reducing high risk-loans in new production (flow measure; more details below). As of 2021, the data collection also includes an additional part focused on the energy efficiency of the housing collateral.

Graph 2 – Risk-based pricing and commercial margins for new mortgage loans
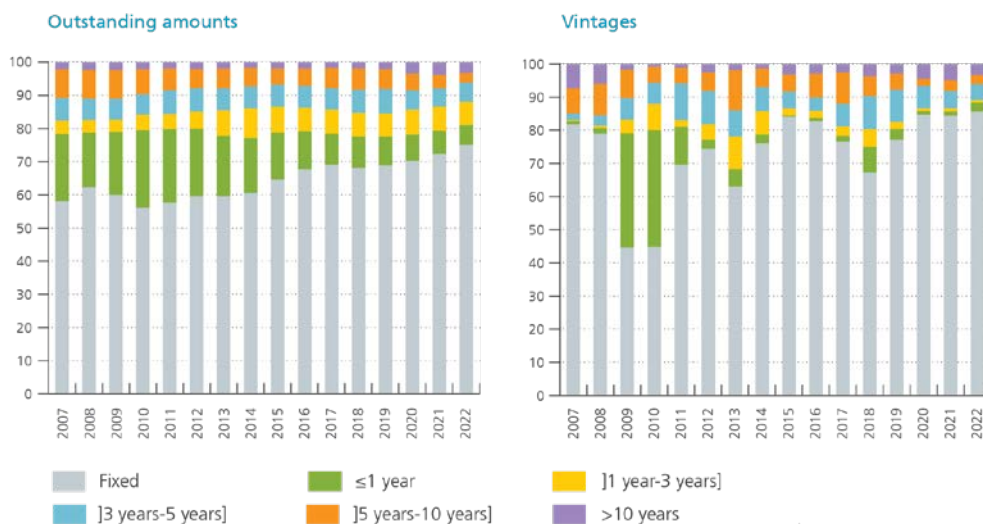
In per cent

Mortgage rate differentiation by LTV level: example for 2 segments of new loans[1]

Difference between mortgage rate and swap rate[2]

- Mortgage rate
- Swap rate
- Difference between mortgage rate and swap rate

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LTV ≤ 90 %   LTV > 90 %

[1] Segment 1 includes new fixed rate loans with maturity of ≤20y and DSTI between]30%–50%]; Segment 2 includes new fixed rate loans with maturity between]20y–25y] and DSTI between]30%–50%]. These data are sourced from the PHL survey of the banking sector.   [2] The gross commercial margins earned by banks on new mortgage lending are approximated by the difference between the average rate charged on new mortgage loans and the corresponding swap rate according to the maturity of the period for which the mortgage rate is fixed (the swap rate is weighted by volume over the various maturities). Last observation: March 2023.

Source: NBB.

Graph 3 – Breakdown of mortgage loans by interest rate variability[1]

As a percentage of total stock or loans granted during a particular vintage

Outstanding amounts

Vintages

- Fixed
- ≤1 year
-]1 year-3 years]
-]3 years-5 years]
-]5 years-10 years]
- >10 years

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[1] Fixed" refers to contracts in which the interest rate is fixed for the whole maturity of the loan.

Source: NBB.

Country-specific factors that contribute to mitigating the housing risks in Belgium (Graph 3) are the system of automatic wage indexation (ex post compensation for consumer price inflation) and key features of the Belgian mortgage loan market, which is characterised by:

- short maturities at origination (on average less than 20 years, almost no loans with maturity longer than 25 years);

- regular amortisation of capital (93% of stock has full amortisation, 2% partial amortisation and 5% are bullet loans, including short-term bridge financing loans);

- mortgage rates fixed for the whole maturity of the loan (75% of the stock) and not less than 1 year (by law, which also caps the client rate at twice the initial rate);

- fiscal incentives for mortgage borrowing that have largely been phased out in recent years.

2. Governance

The NBB is the designated macroprudential authority in Belgium. Its macroprudential mandate is exercised within the broader context of the Single Supervisory Mechanism (SSM). However, the ECB's power regarding macroprudential policy under the SSM is more restricted than the competences of national authorities, being limited to instruments foreseen in the Capital Requirements Directive (CRD) and Capital Requirements Regulation (CRR) and that the ECB may only apply more stringent requirements. In addition, at the EU level the European Systemic Risk Board (ESRB) can draw up guidelines, recommendations or opinions on the use of specific macroprudential instruments. The NBB is responsible for following up on the recommendations related to the macroprudential instruments under its control.

In Belgium, the macroprudential instruments under direct control of the NBB are legally enforced by regulations it lays down, but these only come into force after being enacted by Royal Decree – depending on the instrument, requiring approval by the Minister of Finance or the Council of Ministers – and published in the Belgian Official Gazette. Legally binding borrower-based measures are not part of the NBB's macroprudential toolkit (these are the domain of the Belgian legislator). The NBB's Organic Law provides it with the authority to address recommendations to relevant authorities when actions required to maintain financial stability are beyond its competences. In the event of non-compliance with recommendations, the targeted authority will have to state the reasons for this. Recommendations might be related to specific measures, such as lending limits in the form of caps on LTVs or D(S)TIs if some specific risks emerge, for instance in the real estate sector.

3. Objectives

The primary objective of the Belgian macroprudential authority's policies to mitigate housing-related risks is to maintain the stability of the Belgian financial system, which has a large exposure to the domestic residential housing and mortgage market. The intermediate objectives focus on strengthening lender and borrower resilience to deal with potential adverse shocks in these markets. The objective of borrower resilience focuses on avoiding losses for lenders but also on avoiding negative spillovers of market shocks through borrower behaviour to the housing and mortgage markets or the economy in general.

The instruments that have been used to achieve these intermediate objectives – peer benchmarking and moral suasion, capital buffer, supervisory expectations for credit standards – were

binding at the moment they were used and resulted in a net reduction of the level of risk after their implementation.

4.   Macroprudential instruments in practice

In addition to the monitoring framework (with peer benchmarking and moral suasion), the NBB has used two additional macroprudential instruments to mitigate housing-related risks.
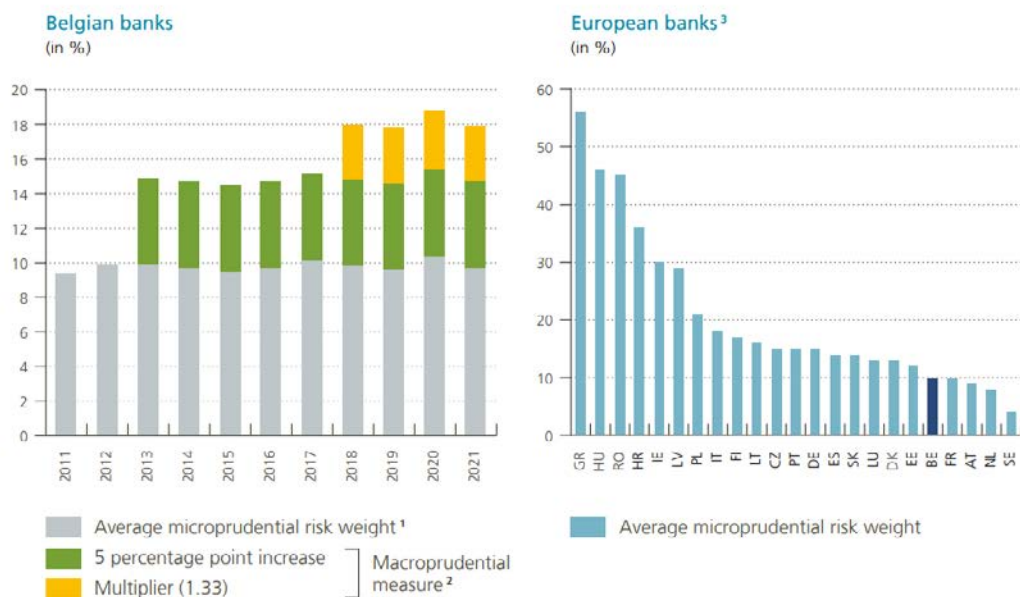
4.1   Macroprudential capital buffer for banks using an IRB model for domestic mortgage loans

For the bulk of the stock of Belgian mortgage debt, the minimum required regulatory capital is calculated using the IRB approach. In order to compute these risk weights, Belgian banks calibrate their models on historical credit loss data. Since these data do not include a crisis period for the historic time span considered – quite the contrary; the Belgian residential real estate market has enjoyed rather buoyant market conditions during that time – the risk weights calculated within those internal risk models are low (Graph 4).
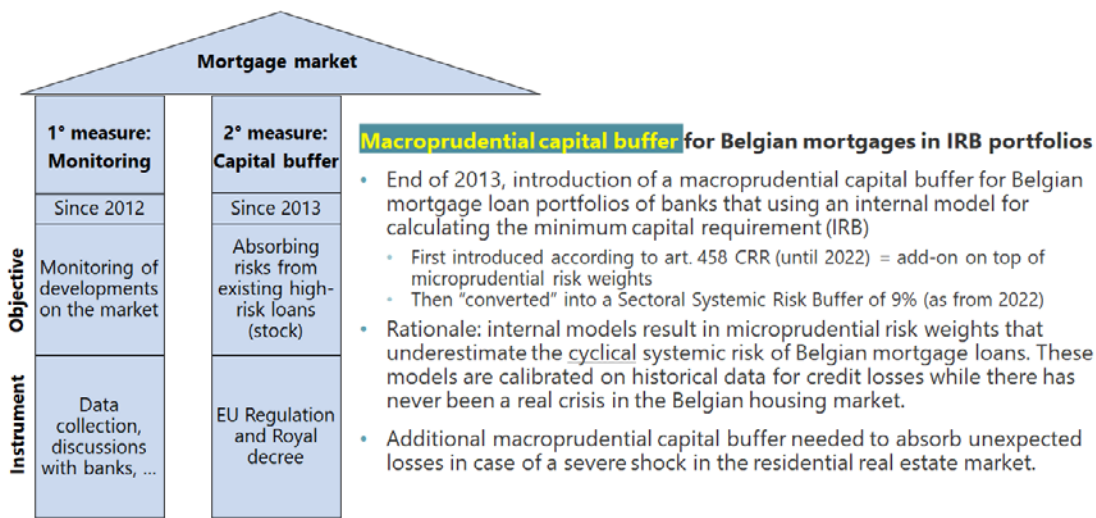
The average IRB risk weight of Belgian banks for domestic mortgage loans has been stable at around 10% during the last 15 years. Since the end of 2013, the NBB has judged that these risk weights resulting from IRB models could be insufficient for the losses that banks could incur if market conditions were to deteriorate and if risks inherent in certain subsegments of the Belgian banking sector's mortgage portfolios were to materialise. It has therefore strengthened the resilience of Belgian banks using IRB models for Belgian mortgage loans through the second pillar, a dedicated macroprudential capital buffer (Graph 4), that is calibrated on the basis of a scenario analysis (stressed PD and LGD).

Graph 4 – Average risk weight for domestic mortgage loans as calculated in IRB models

Belgian banks (in %)

European banks[3] (in %)

Average microprudential risk weight[1]
5 percentage point increase } Macroprudential measure[2]
Multiplier (1.33)

Average microprudential risk weight

[1] As calculated in IRB models. [2] Macroprudential measure applied under article 458 of the CRR. [3] Data for September 2021. Excluding the macroprudential measures that have been implemented in several countries.

Sources: ECB; NBB.

At the end of 2013, the NBB introduced a flat rate 5 percentage point add-on to the risk weights calculated by IRB models – and not a floor, for example so that banks' incentives to maintain sound credit standards were not affected – after institution-specific data had shown that risk weight variations between the nine Belgian credit institutions using an IRB model were largely attributable to variations in their risk profiles. As a result of the introduction of the add-on, the average risk weight of the IRB banks for Belgian mortgage loans went up from around 10% at the end of 2012 to about 15% at the end of 2013 and in the years thereafter. In 2017, in view of the continuing vulnerabilities and the observed deterioration of credit standards, a stricter measure seemed necessary to maintain banks' resilience to potential shocks and to restrain the further build-up of risky subsegments. This new measure, introduced in 2018, consisted of two components that increase banks' IRB risk weights for the domestic mortgage loan portfolio: the previous linear component of 5 percentage points ensuring continuity with the previous measure and a second, non-linear, more targeted component introducing a factor of 1.33 by which the initial risk weights (excluding the linear add-on) have to be multiplied. Until April 2022, this macroprudential capital buffer was based on Article 458 of the CRR.

At the end of 2021, with a view to extending this macroprudential capital buffer beyond its expiry date of April 2022, the NBB considered it useful to maintain the buffer at the same level – ie approximately €2 billion for the entire banking sector – but to use, as of May 2022, the new European instrument introduced with the CRD V: the sectoral systemic risk buffer (SSyRB). This SSyRB became effective on 1 May 2022 with a rate of 9% (applied to the risk-weighted assets of the Belgian mortgage loan portfolio of each bank).

This macroprudential capital buffer applies to the stock of domestic mortgage loans for which banks use an IRB model to calculate the microprudential minimum capital requirements. It mainly targets lender resilience, but in case of systemic crisis, the NBB will implement a _conditional_ release of this buffer, specifying what it wants banks to do with the released capital buffer. These conditions could include a

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framework with expectations and objectives in terms of banks providing solutions for borrowers with payment difficulties (ie debt restructuring or forbearance), which would help to avoid a downturn in the residential real estate market being amplified by a large wave of mortgage loan defaults, house evictions and forced home sales and eventually contributing to an outright real estate crisis. In that case, it would also target borrower resilience.

4.2 Macroprudential supervisory expectations for credit standards of domestic mortgage loans

While the monitoring framework (with peer benchmarking and moral suasion) had contributed to a lasting decline in the share of loans with an LTV ratio of more than 100% (Graph 5), the LTV profile of new production started to deteriorate again amidst intensifying competitive pressures in the period 2015–18. In order to reverse this negative trend and guide the market towards more sustainable LTV ratios, the NBB decided to issue prudential expectations for institutions granting mortgage loans. This new macroprudential measure (third pillar) entered into force in 2020 and aims to protect both borrowers (from taking on excessive debt) and financial institutions (against a further increase in the risks in their mortgage loan portfolios).

Graph 5 – LTV ratios at origination[1]

As a percentage of total loans granted during a particular vintage
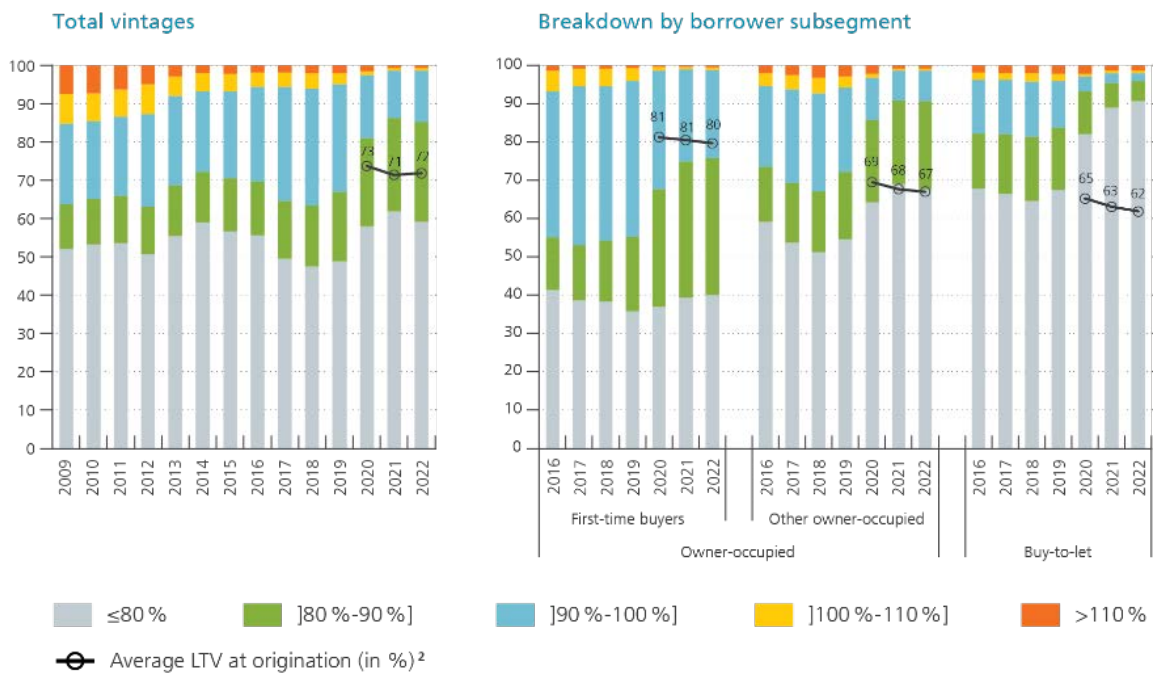
Source: NBB.

The prudential expectations set reference thresholds for LTV ratios in new mortgage production, together with tolerance margins that define the share of this production that is permitted to exceed these thresholds. These thresholds and tolerance margins were established at different levels for three different

subsegments of borrowers (first-time buyers, other owner-occupiers and buy-to-let). More flexibility is allowed for first-time buyers – who are often younger borrowers with more limited accumulated funds – than for borrowers who take out a loan to finance a second home or a buy-to-let property. As the calibration of the levels – based on the historical development and expert judgment – was binding in all three subsegments, it led to a net reduction in the share of riskier loans in mortgage production (banks and insurance companies even subsequently over-complied with the expectations).

LTV-caps, by subsegment Per subsegment		Tolerance margin (speed limit)
First-time buyers	LTV > 90%	35%
	LTV > 100%	5%
Other owner-occupied	LTV > 90%	20%
	LTV > 100%	0%
Buy-to-let	LTV > 80%	10%
	LTV > 90%	0%
Pockets of risk		
All loans	LTV > 90% en DSTI > 50%	5%
	LTV > 90% en DTI > 9	5%

These supervisory expectations are <u>not legally-binding</u> borrower-based measures (which is the prerogative of the Belgian federal government and parliament) but are based on <u>a formal and strict "comply or explain" mechanism</u>. They mainly focus on LTV, but also include expectations for pockets of risk (combinations of a high LTV ratio with a high DSTI or DTI ratio). The supervisory expectations are applicable to all institutions that originate Belgian mortgage loans. The formal comply or explain mechanism is limited to institutions with a stock of Belgian mortgage loans of at least €1 billion (currently 14 banks and five insurance companies). The annual comply or explain report is signed by the CEO and chair of the board. In case of non-compliance, the NBB will request the institution to submit an action plan to remedy this.

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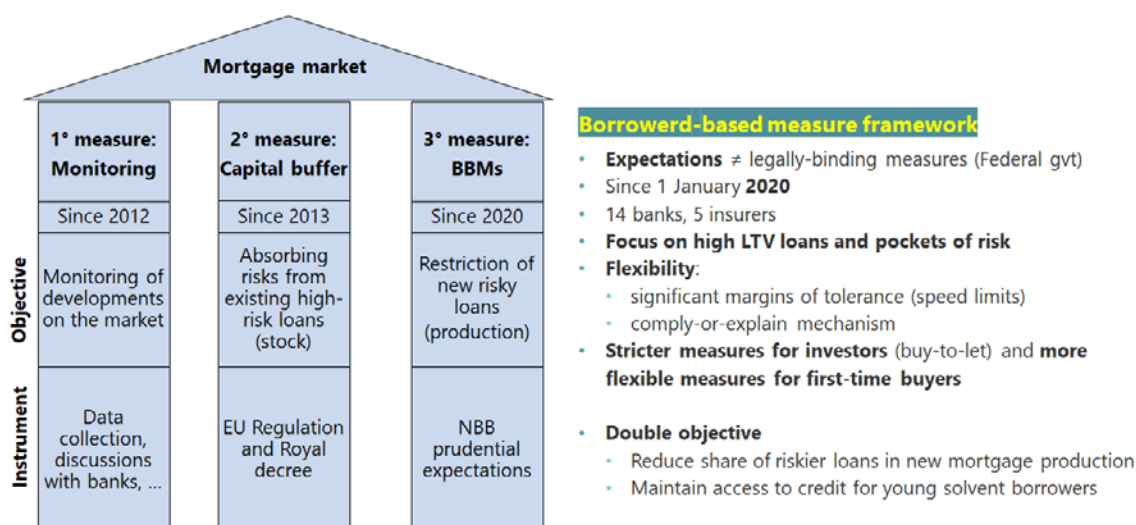
The solvency of mortgage debtors depends on a wide range of relevant factors: (self-)employment status and type of professional activity, household composition, level of net disposable income of the household, amount of net disposable income that remains after debt service, level of financial assets, etc. Debt service-to-income ratios were therefore not considered to be the best tool to ensure the double objective of the supervisory expectations: to reduce the share of riskier loans in new mortgage production while maintaining access to credit for (young) solvent borrowers.

Given the quite conservative loan amortisation, loan maturity and interest rate variability characteristics of the Belgian mortgage loan market, nor was it necessary (at this stage) to include these in the supervisory expectations. Loan maturities could thus fully play their shock-absorbing role, as intended, when mortgage rates rose (Graph 1), a development explicitly welcomed by the NBB.

5. Effectiveness

5.1. Measuring success

The real effectiveness of the macroprudential measures will only show if (not when) the Belgian residential housing and mortgage markets experience a crisis; the sharp increase of mortgage loan rates in the most recent period could provide a first test in this regard. There is also no counterfactual analysis available that would show what the risks would have been in the absence of the measures taken.

While the introduction of the capital-based measure in 2013 is unlikely to have had, of itself, a significant impact on credit standards or loan pricing over the last 10 years (nor was this the targeted objective), the measure has undoubtedly helped – in combination with the risk monitoring framework, peer analysis and related moral suasion – to raise awareness in the sector of the need for sound(er) credit standards.

As shown before, the risk monitoring framework, and more recently the supervisory expectations, have helped to reduce the production of riskier loans. In the absence of such measures, it is likely that the risk profile of the stock would now be weaker, including with long loan maturities so that the shock of higher interest rates could not be mitigated. If house price developments compared to other countries can be used as an "indirect" yardstick of the relative dynamism of national housing markets, the more muted house price developments in Belgium since 2014 compared to most other euro area countries could be seen as a sign that the NBB measures have helped to contain to some extent the "boom" during the low interest rate period.

In the absence of a real crisis or a good counterfactual analysis, the measure of the effectiveness of the three "pillars" described above has to rely on an assessment of whether they were successful in meeting their direct objectives. The conclusion here is that they have been very successful.

Since the end of 2013, the resilience of the banking sector to domestic housing risks has been increased by the macroprudential capital buffer. This objective has been achieved from the day that the buffer was implemented and, as explained before, it could also help to reinforce borrower resilience in case of a crisis (conditional release of the capital buffer).

The risk profile of new mortgage lending and risk-based loan pricing have improved since the introduction of the monitoring framework and supervisory expectations, though not always in a linear way. Compliance with the supervisory expectations is very high and the NBB is comfortable with the risk-mitigating policies that banks have used in order to justify non-compliance (eg the explicit pledge of a financial asset portfolio as guarantee for high LTV loans extended to high net worth debtors in the context of a private banking wealth management relationship). Thanks to this reduction in the production of loans

with a higher risk profile, there are now clear improvements in the risk profile of the stock of Belgian mortgages, as measured for example by the default profile of the successive mortgage loan production vintages, the distribution of the current (indexed) LTV ratio or the relative share of loans with the combination of a high LTV, DSTI and/or long maturity at the moment of origination (see the graphs in the Annex). All other things being equal, the ability of both lenders and debtors to deal with shocks has improved compared to the past.

If necessary, the <u>supervisory expectations can be adapted quickly</u>. So far they seem to have been very successful in reaching the double objective of reducing the share of riskier loans in new mortgage loan production (Graph 5) while maintaining access to credit for young, solvent borrowers (Graph 6). If the risk profile of the stock improves as a result of the flow measure (supervisory expectations), a recalibration of the stock measure (capital buffer) could be envisaged.

5.2. Factors influencing/hampering success

The monitoring framework with regular feedback to reporting institutions and peer analysis has been a key success factor. It created much needed transparency for all market participants on the credit standards being used in the market and provided an objective measure to identify outliers with weak credit policies. The capital measure and the supervisory expectations were also built upon data collected through this monitoring framework.

The flexibility built into the supervisory expectations – speed limits and the comply or explain mechanism – is a second success factor. It provides the scope to cater for the high diversity in the many parameters that determine whether a particular level of a credit standard is compatible with the individual debtor's solvency and resilience to shocks.

The very accommodative monetary policy environment and very low level of interest rates may have offset to some extent the positive effects of the macroprudential measures (overall lending and market dynamics were probably stronger than would have occurred in a more standard macro environment).

5.3. Leakages

Leakages have remained very limited, also thanks to the following elements of the measures:
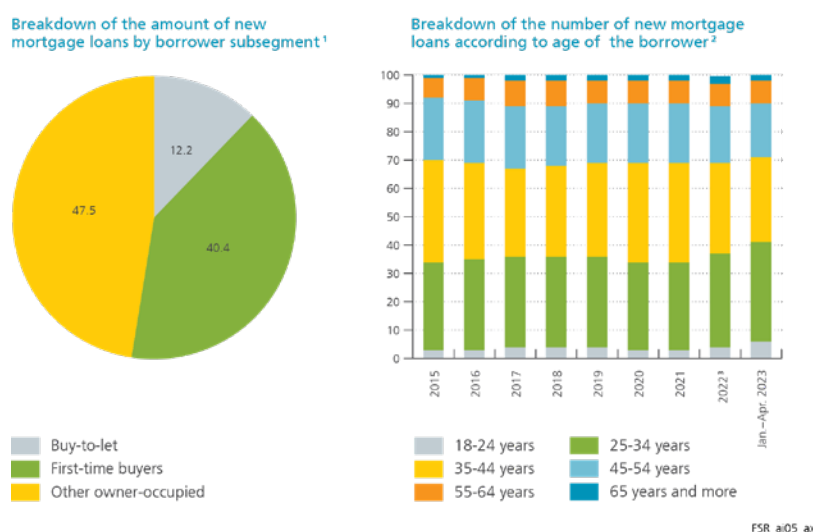
- leakages from instruments: the LTV calculation must also include other types of credit (eg consumer credit) when they are "part and parcel" of the mortgage loan transaction;

- leakages across lenders: there is a level playing field for both the capital- and borrower-based measure that includes all relevant institutions (banks and insurance companies); we have not seen evidence of regulatory arbitrage between banks and insurance companies (different capital rules for mortgages);

- leakages across countries: there is limited cross-border mortgage lending and other countries apply "reciprocity" following a recommendation of the ESRB.

6.   Costs, benefits and unintended consequences

The costs and unintended consequences of the measures taken appear to be very limited. This is also due to the recent (countercyclical) lengthening of loan maturities for new mortgages, which is helping to absorb the shock of higher interest rates (helps to stabilise the borrowing capacity of debtors).

Graph 6 – Borrower subsegments and age of borrower

As a percentage of total loans granted during a particular vintage

Breakdown of the amount of new mortgage loans by borrower subsegment [1]

Breakdown of the number of new mortgage loans according to age of the borrower [2]

Legend (pie chart):
- Buy-to-let
- First-time buyers
- Other owner-occupied

Legend (bar chart):
- 18-24 years
- 35-44 years
- 55-64 years
- 25-34 years
- 45-54 years
- 65 years and more

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[1] Data relate to mortgage loans granted in 2022 by the banking and insurance sector, excluding renegotiations of existing loans.   [2] Data from the Central Individual Credit Register.

Source: NBB.

As borrower-based measures are a highly sensitive issue for the political world, the supervisory expectations have taken into account the need to maintain access to the property market for solvent borrowers while still reducing the risk profile of new mortgage loans. This seems to have worked very well up till now, including thanks to the use of supervisory expectations with a formal comply or explain mechanism (which is fully within the mandate of the macroprudential authority). It is also a very flexible regime that can be adapted quickly if necessary. Legally binding borrower-based measures can only be taken by the Federal government and parliament (they could be used in the event that the sector was no longer complying with the supervisory expectations, but so far there is high (commitment to) compliance).

Annex graphs

Annex graph 1 – Mortgage loans with payment defaults[1]

As a percentage of total loans granted during a particular vintage
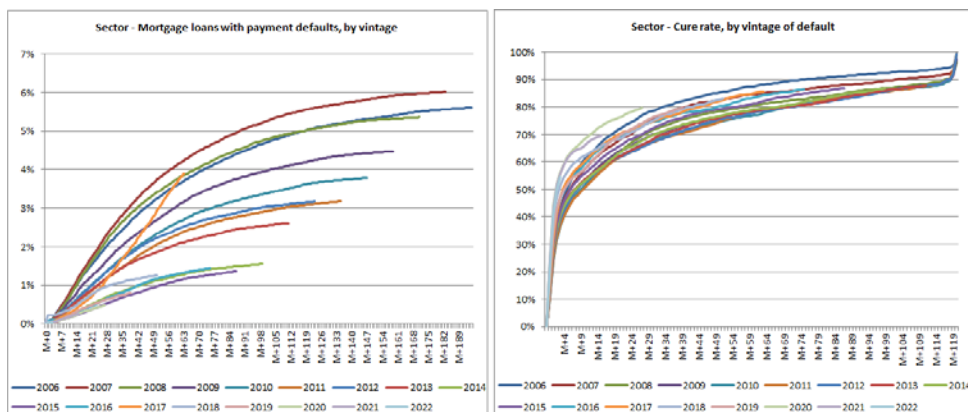
[1] As recorded in the Central Credit Register. Production vintages group together loans granted during the same year. In the left-hand panel the curves show, for each vintage, the number of defaulted loans as a percentage of total original loans after a certain number of months since the loans were granted. Possible regularisations (cures) of loans are not taken into account. The right-hand panel shows the corresponding cure rates.
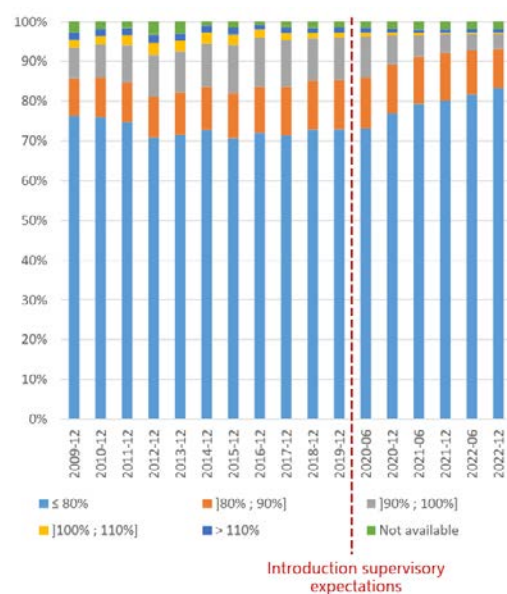
Source: NBB.

Annex graph 2 – Default rate of Belgian mortgage loans

Number of defaulted contracts, percentage of total outstanding contracts
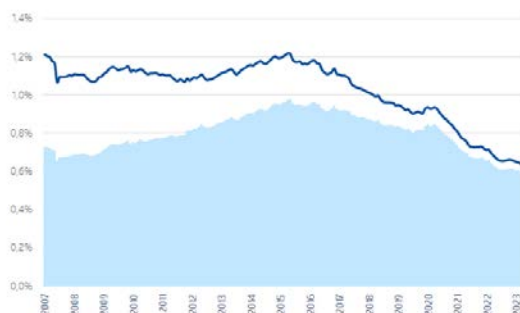
Source: NBB (credit register for loans to Belgian households).

Annex graph 3 – Breakdown of the stock of Belgian mortgage loans by current/indexed LTV[1]

[1] The development of the indexed LTV is driven by the amortisation of loans (decline of L), changes in house prices (V) and new mortgage loan production.

Source: NBB.

Annex graph 4 – Breakdown of the stock of Belgian mortgage loans by pockets of risk[1]

"Pockets of risk"	2018	2019	2020	2021	2022
LTV-O > 90%, DSTI-O > 30%	27,6%	27,1%	23,1%	20,7%	18,8%
LTV-O > 90%, DSTI-O > 30% M-O > 20y	16,3%	16,6%	15,1%	13,5%	12,7%
LTV-O > 90% DSTI-O > 50%	7,0%	6,2%	5,0%	4,5%	3,9%

Introduction supervisory expectations

[1] Pockets of risk defined as loans with a combination of a high level for LTV, DSTI and/or maturity at the moment of the origination of the loan.

Source: NBB.

Annex graph 5 – Risk-based loan pricing (average client rates for mortgage loan production of 2022)[1]
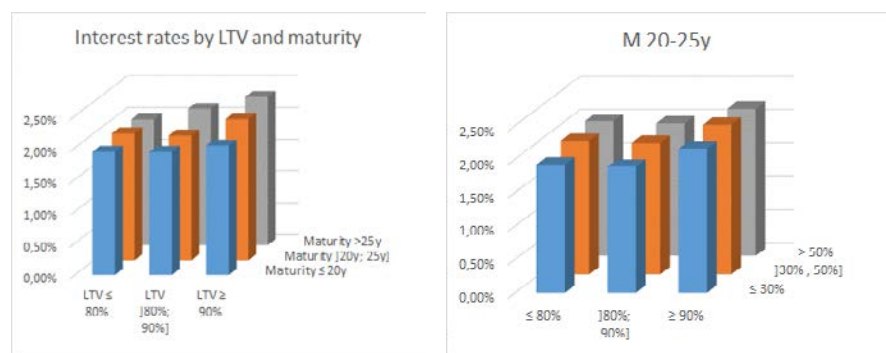
[1] The left-hand panel shows the average client rate for different combinations of LTV and maturity (at origination). The right-hand panel shows the average client rate for different combinations of LTV and DSTI (at origination) for loans with a maturity (at origination) between 20 and 25 years.

Source: NBB.