Setting the countercyclical buffer rate in Belgium: A policy strategy

1. The countercyclical capital buffer as part of a macroprudential policy framework

1.1 The need for a macroprudential policy framework

In the aftermath of the 2007-2008 financial crisis, the regulatory framework of the financial system was radically reformed. In addition to new requirements with respect to solvency and liquidity standards for individual institutions aimed at improving the sector's loss-absorbing capacity, a broad macroprudential policy covering the entire financial system was considered a prerequisite for avoiding economically and socially costly financial crises.

Macroprudential policy aims at safeguarding the stability of the financial system as a whole. It notably targets the negative externalities arising from individual institutions' behaviour, as reflected in spillover effects through direct and indirect interconnections of financial institutions and the inherent pro-cyclicality of the financial system. Safeguarding financial stability implies a twofold objective for macroprudential policy. The first – cyclical – policy dimension seeks to curb the emergence of systemic vulnerabilities in upward phases of the cycle, or when lending surges. This is achieved by creating buffers intended to absorb aggregate systemic shocks and that can be used to support supply of credit to the economy even during economic downturns. The second policy dimension aims at managing fundamental systemic risks stemming from vulnerabilities such as tight interconnectedness between financial intermediaries, high concentration of exposures of these institutions and the crucial role they play in significant markets, attributing them "too-big-to-fail" status.

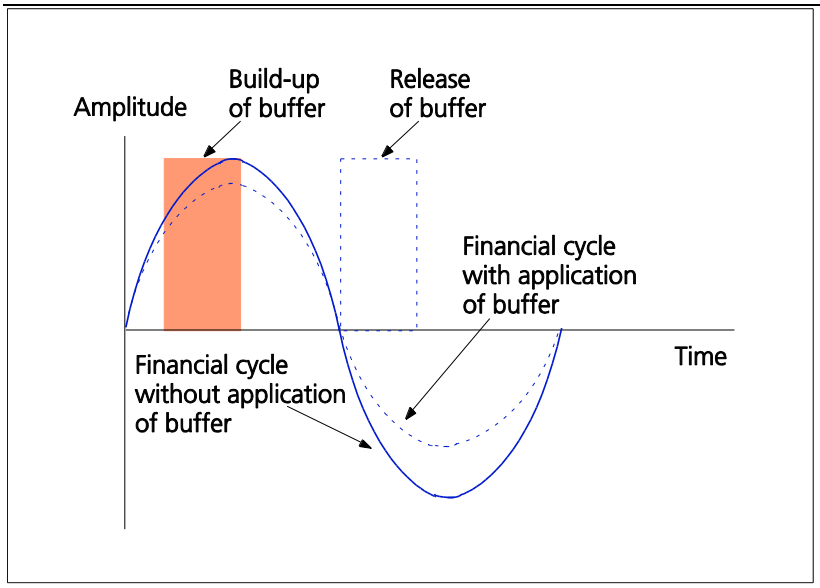
A precondition for macroprudential policies to be effective is that authorities in charge of these policies have clearly defined objectives and powers. In particular, macroprudential authorities should have at their disposal a set of instruments that can be applied to target systemic risk. Such macroprudential instruments, which include capital- and liquidity-based instruments as well as direct limits to lending, generally aim at strengthening the resilience of the financial system as a whole by increasing institutions' capacity to withstand institution-specific or sector-wide shocks. In addition, they may also be used to deliberately curb the upswing of the financial cycle through their effects on credit supply and/or asset prices (often referred to as "leaning against the wind").

1.2 The countercyclical capital buffer

The countercyclical capital buffer is a macroprudential instrument designed to mitigate cyclical systemic risks and to counter pro-cyclicality in the extension of credit. Its objective is to support the sustainable provision of credit through the cycle by strengthening the resilience of credit institutions. In particular, capital buffers will be imposed whenever there is an increase in cyclical systemic risks (i.e. with excessive growth in lending), so that these additional requirements can be relaxed when the cycle turns and the risks start to decline. If risks emerge – in a situation of financial stress for instance – a decision can be taken to release the buffer instantly in order to give the banks some extra breathing space and thus put them in a better position to absorb losses and keep up their level of lending.

Hence, the release of the buffer in the downturn aims at mitigating the pro-cyclical effects of credit crunches when the economic and financial environment is vulnerable. If the higher cost of funding resulting from higher capital requirements is passed on to credit markets, raising the buffer in buoyant times may also contribute to smoothing out the upswing in the credit cycle (Chart 1).

Chart 1: Stylised transmission of buffers over the financial cycle



Source: ESRB (2014).

The Capital Requirements Directive[1] contains provisions regarding the countercyclical capital buffer rate. These provisions are implemented in Belgian legislation through the Law of 25 April 2014 on the status and supervision of credit institutions (Article 5 in Annex IV), stipulating that all credit institutions incorporated under Belgian law will be required to maintain a counter-cyclical capital buffer. An institution's counter-cyclical capital buffer consists of common equity tier 1 capital and is calculated as the total risk exposure amount multiplied by the weighted average of the countercyclical buffer rates that are applicable in the jurisdictions in which the institution has credit exposures. It applies at both individual and consolidated basis. The countercyclical buffer rate, expressed as a percentage of institutions' risk-weighted assets, shall generally be between 0 and 2.5% (varying with steps of 0.25% points), but can be set higher when justified by the underlying risk.

2. Setting the countercyclical buffer rate in Belgium

2.1 The Belgian macroprudential policy framework

2.1.1 The Bank's macroprudential policy responsibilities

In line with a recommendation from the European Systemic Risk Board, the Law of 25 April 2014 appointed the Bank as the macroprudential authority. This new mandate was incorporated in the Bank's Organic Law as an element of its general mission of contributing to financial stability. Within this new institutional framework, the Bank is responsible not only for the detection and monitoring of systemic risks but also for their follow-up, including taking policy action when deemed appropriate.

In this context, the Bank was endowed with a wide range of macroprudential instruments which may be activated to mitigate emerging systemic risks. The Bank can impose additional capital or liquidity requirements, but also has tools beyond capital- and liquidity-based ones at its disposal. The Bank nevertheless has no responsibility for imposing lending limits. In particular, imposing ceilings on the amount of mortgage debt in relation to the value of the property and the level of debt repayments relative to income is a competence of the federal government.

1 Directive 2013/36/EU of the European Parliament and the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC.

More generally, the Bank has the authority to address recommendations to public authorities or private entities when their policies or actions could threaten financial stability, thereby broadening its scope to tackle systemic risks emerging beyond the banking sector.

2.1.2 The Bank's framework for macroprudential risk assessment

Effective macroprudential policy is not feasible without regular and comprehensive analyses of potential risks for the stability of the financial system, and related vulnerabilities in systemically important financial institutions or in the sector at large. Macroprudential risk analyses combine information obtained from three pillars, which consist of a top-down approach, a bottom-up approach, and an indicator- and model-based identification of the potential threats to the financial stability in the Belgian financial sector.

The top-down approach is based on analyses of general economic and financial developments backed by the assessment of the relevance of a broad range of economic parameters such as economic growth, macroeconomic imbalances, interest rate levels, the sustainability of public finances, credit growth, the financial position of households and businesses, growth in house prices, etc. This approach includes determining the potential risks for the sustainability and viability of Belgian banks, insurance companies and financial market infrastructures, and the associated consequences for financial stability. This also includes an analysis of the impact of a variety of economic variables on financial institutions' profit and loss accounts, balance sheets or liquidity profile.

The bottom-up approach aims at highlighting the main points of attention in the ongoing risk analyses in the departments of the Bank responsible for the microprudential supervision of Belgian banks, insurance companies and financial market infrastructures. Such attention points result from the analysis of developments specific to various institutions on an individual basis or of sector-specific challenges, and may or may not be connected with changes in the macrofinancial parameters. Relevant information resulting from market intelligence is also part of the bottom-up approach.

The third pillar consists in an indicator- and model-based approach, intended to detect potential threats to the stability of the Belgian financial sector. A financial conditions index (FCI) is calculated on the basis of a series of indicators relating to credit trends, the banking sector, the level of debt in the economy, the property market and current developments in the financial markets. Sub-indices are calculated for each category and are then aggregated into an FCI. In addition, a risk dashboard comprising a wide range of indicators for detecting and monitoring risks to financial stability is also used[2]. A sub-set of the indicators in the risk dashboard is aggregated in 'model-based' composite indicators that reflect the Belgian financial cycle. The levels of the individual indicators of the risk dashboard and composite indicators in the model-based approach are compared to threshold levels in order to determine whether the indicators signal heightened risk. The Bank's risk dashboard contains around 150 risk indicators covering the build-up of risk in financial institutions (banking sector, insurance sector, non-bank non-insurance financial entities), the non-financial private sector (households and non-financial corporations), financial markets and the real estate market. The risk dashboard also contains indicators capturing the materialisation of risks, including credit losses, liquidity and interest rate risk, and financial market indicators.

The three-pillar-based macroprudential analysis forms the basis for prioritising risks requiring further attention, and for deciding on any measures to be taken with regard to supervision policy, such as the activation of macroprudential instruments.

To ensure adequate preparation of the risk assessment and to underpin decisions on potential policy actions, including the selection and calibration of macroprudential instruments in the event of an

[2] See the article « A risk dashboard for detecting and monitoring systemic risk in Belgium » published in the NBB Financial Stability Report 2019 for more details.

occurrence of threats to financial stability, the Bank has developed a specific in-house organisational framework. This framework relies on different internal structures, which bring together all the relevant departments of the Bank at different stages of the assessment and decision process. The cross-departmental composition of these internal structures ensures that risk analyses are widely discussed and that diverging views are taken into account, in view of the complexity of systemic risks.

In particular, under the aegis of the Bank's Board, which has the ultimate power to decide on macroprudential policy, two structures have been set up. The first structure is the Macrofinancial Committee (MFC), which is composed of the heads of the relevant departments[3] and is responsible for preparing the meetings of the Bank's Board acting as macroprudential authority. The MFC discusses the risk assessment from a policy perspective and recommends policy actions if these are deemed necessary. It also acts as the secretariat of the Bank's Board in its capacity of macroprudential authority and submits to the Board drafts for the public communication on macroprudential decisions. The second structure is the Risk Team Macroprudential Policy (RT MPP), in which all the relevant departments of the Bank are represented, but at technical level. The RT MPP prepares the materials that serve as a background for the MFC meetings, consisting of the risk assessment – focused on identifying potential systemic risks – and an assessment of the potential macroprudential measures that could be implemented to address it, as well as their calibration.

2.2 The Bank's quarterly countercyclical buffer rate decision

2.2.1 Legal requirements

Pursuant to Article 5 in Annex IV of the Law of 25 April 2014 on the status and supervision of credit institutions, each quarter the National Bank of Belgium sets the countercyclical buffer rate applicable to credit exposures to counterparties located on Belgian territory on the basis of one or more reference indicators that reflect the credit cycle and the risks stemming from excessive credit growth in Belgium, and that account for the specific elements of the national economy. These indicators shall be based on the deviation of the credit-to-GDP ratio from its long-term trend (the credit-to-GDP gap), accounting for the change in volumes of credit granted on Belgian territory and developments in Belgian GDP, the recommendations issued by the ESRB, and any other variable that the National Bank of Belgium deems relevant to capture cyclical systemic risk.

2.2.2 The Bank's policy strategy

General criteria and principles

In line with its objective, the countercyclical buffer rate for Belgian exposures will be increased to foster credit institutions' resilience when the credit growth is judged excessive or when other indications of cyclical imbalances are building up. The buffer rate will be reduced when the Bank's assessment indicates that cyclical developments have reverted back to normal or when widespread losses risk an abrupt tightening of credit provision in times of financial stress. In the latter case, the built-up capital will serve to absorb banks' losses in the downturn, thereby supporting the flow of credit in the economy, and to finance debt restructuring solutions for viable borrowers experiencing temporary or more structural bank loan repayment problems. See Box 1 below for more details about the various phases of cyclical risk and the related appropriate CCyB decisions. While the countercyclical capital buffer may help to lean against the build-up phase of the cycle, the Bank does not intend to use the instrument for fine-tuning the business or the financial cycle. Neither is the countercyclical capital buffer intended to alleviate isolated problems in individual banks.

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3 Prudential Policy and Financial Stability, Prudential Supervision of Banks and Stockbroking Firms, Prudential policy and inspection insurance, Surveillance of financial market infrastructures, payment services and cyber risks, Insurance and reinsurance companies Service, Resolution, Legal Department, Analysis and Research, Financial Markets, Statistics, and Microeconomic Information.

Box 1 : The CCyB and phases of cyclical risk[4]

Phase I : Normal levels of cyclical risk
In the standard risk environment, credit growth dynamics is tied to economic fundamentals, asset prices show moderate growth with no clear signs of over- or undervaluation, macroeconomic imbalances are muted, and cyclical systemic risk is neither low or high. The Bank's CCyB policy stance is to have a 0 % CCyB rate in a low / normal cyclical risk environment.

Phase II : Elevated levels of cyclical risk
In this phase cyclical risk is on the rise, (various) imbalances start to manifest themselves and the strong credit growth is no longer supported by underlying economic fundamentals. This phase warrants activation of the CCyB. In order to provide banking institutions with sufficient time to adjust to any change in capital requirements, a rate increment will only take effect twelve months from the date of its announcement. However, exceptional economic conditions may warrant an earlier effective date. Setting a positive buffer as soon as the credit cycle picks up maximises the likelihood that a buffer is in place if and when required. In addition, by moving early in the cycle authorities have the scope to implement policy changes in a gradual manner, where necessary and appropriate, with a view to minimising potential (unwanted) impacts on the real economy.

Phase III : Risk materialisation
In this phase, risk materialises and the CCyB buffer is (partly) released. The materialised risk either stems from the imbalances that initially led to the elevated level of cyclical risk and / or have an exogeneous source (e.g., Brexit, COVID-19, military conflicts, etc.). The purpose of the CCyB release is for banks to use the freed-up capital to (1) recognise potential credit losses in a timely and conservative way, (2) sustain lending to the private sector (potentially faced with liquidity shortages), and (3) finance debt restructuring solutions for viable borrowers experiencing temporary or more structural bank loan repayment problems. In addition to (partly) releasing the CCyB, the Bank communicates a period throughout which the CCyB is unlikely to be activated again. Such forward guidance increases transparency, anchors expectations about the future path of the CCyB rate, and facilitates better capital management by banks.

Phase IV : Recovery phase
In a post-crisis phase, the economic recovery is under way and balance sheets are repaired. The macroeconomic picture remains subdued in this phase. The economy is operating below potential, spending is inhibited by the balance sheet recovery, asset prices are moderate (relative to assessed equilibrium levels) and risk appetite is low.

However, the countercyclical capital buffer is only one of the macroprudential instruments available to the Bank for achieving its mission of contributing to the stability of the financial system. Moreover, the analysis supporting the activation and release decision is an integral part of the Bank's overall risk assessment framework, which covers a broad range of threats to the stability of the financial system. The setting of the countercyclical buffer rate will therefore always be considered in the broader context of the Bank's macroprudential policy stance and account for alternative policy actions that can be or have already been taken.

Furthermore, the countercyclical buffer rate will be set in close coordination with the relevant European authorities. In an integrated European financial system, coordination is needed to avoid uncoordinated implementation of national macroprudential measures jeopardising the functioning of the single financial market. In the euro area, the Regulation with respect to the Single Supervisory Mechanism gives the ECB the competence to apply more stringent countercyclical buffer rates than

[4] Box 1 is an extract from the article "Recent experiences with the Countercyclical Capital Buffer and monitoring of Belgian banks' corporate loans : what lessons for the future ?" published in the NBB Financial Stability Report 2022. The particular sequence of cyclical risk phases described here can occur in a different order (e.g. a low level of cyclical risk following a high cyclical risk state without a prior risk materialisation).

those set by national authorities. *Ex-ante* coordination with the ECB on the setting of the countercyclical buffer rate for Belgian exposures is therefore crucial for the smooth operation of the countercyclical capital buffer.

Key indicators

In line with legal requirements and the ESRB Recommendation of 18 June 2014 on guidance for setting countercyclical buffer rates, there is specific focus on a number of key top-down indicators for the purpose of setting the countercyclical buffer rate. Key indicators foster transparency and comparability over time, thereby reducing information overload in the risk assessment and facilitating communication. The Bank's key indicators relevant to capture cyclical systemic risk cover six crucial risk dimensions in the context of the countercyclical capital buffer: the credit cycle, non-financial private sector resilience, financial and asset markets, banking sector resilience, external imbalances and asset quality. The most recent data on the key indicators are provided in Table 1, while changes over time can be found in the statistical annex. Detailed definitions and data sources of the key indicators are given in Annex 1.

There will not be any mechanical relationship between developments in the indicators and the setting of the countercyclical buffer rate, however. As mentioned above, the countercyclical capital buffer monitoring framework is part of the broader risk assessment framework and therefore draws on a wide set of information provided by the three pillars of the risk assessment. Given the challenges inherent in quantitative systemic risk assessment, there will be a key role for expert judgement at every stage of the macroprudential decision process. As experience and insight are gained with regard to the countercyclical buffer rate, the set of indicators can be developed further.

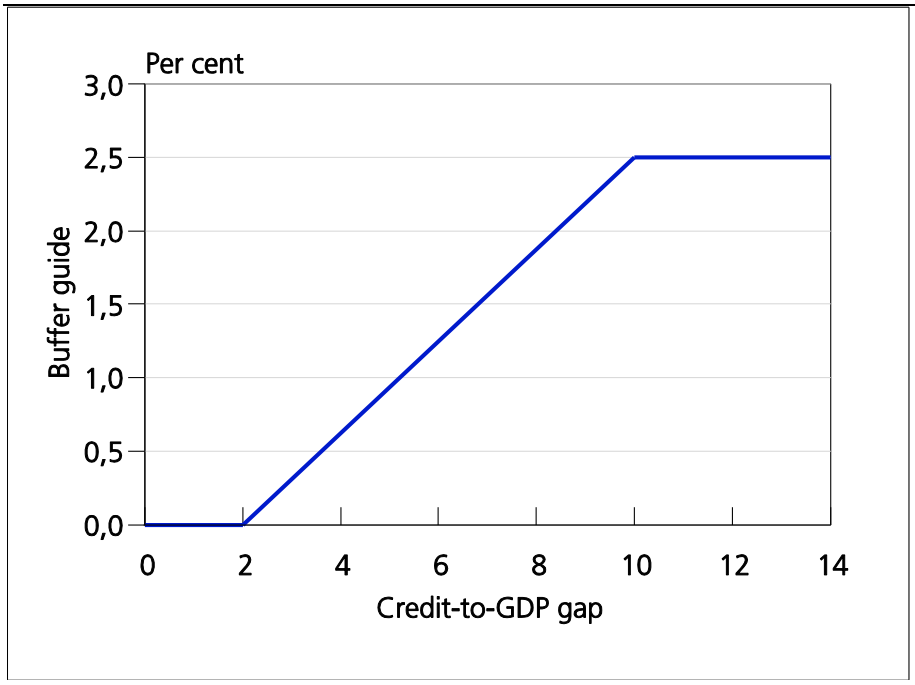
The credit cycle

Growing optimism in economic boom periods may lead to risk illusion and excessive risk-taking by financial actors. Excess growth of credit and weakened lending standards may result in the build-up of vulnerabilities in both the financial and the non-financial private sector. An economic downturn following a period of excess credit growth can lead to large losses in the banking sector, which may result in a pro-cyclical amplification of the downturn when banks take action to restore their balance sheets.

Given that the aim of the countercyclical capital buffer is precisely to counter such pro-cyclicality in lending, measures of the credit cycle are crucial in setting the countercyclical buffer rate. One of the measures considered to capture the credit cycle and to be a good predictor of financial crises is the credit-to-GDP gap, i.e. the deviation of the credit-to-GDP ratio from its long-term trend. If the ratio of credit to GDP increases faster than its long-term trend, reflecting a period during which credit to the non-financial private sector has expanded at a substantially stronger rate than GDP, credit developments are considered to be excessive.

Therefore, the credit-to-GDP ratio and credit-to-GDP gap are included in the set of key indicators for setting the countercyclical buffer rate. More specifically, in line with the Basel III framework and the ESRB Recommendation, the quarterly decision on the countercyclical buffer rate is partially based on a 'buffer guide' derived from the credit-to-GDP gap. The buffer guide is the result of the credit-to-GDP gap being mapped into a benchmark buffer rate, as specified in the ESRB Recommendation. The benchmark buffer rate equals 0% for credit-to-GDP gap levels up to 2 percentage points. When the credit-to-GDP gap exceeds 2 percentage points, the benchmark buffer rate increases linearly, reaching its maximum level of 2.5% for credit-to-GDP gap levels of 10 percentage points and higher (Chart 2).

Chart 2: Mapping of the credit-to-GDP gap into the benchmark buffer rate



Source: Basel Committee.

The Basel Committee and the ESRB recommend that the credit concept included in the credit-to-GDP ratio is as broad as possible and should cover all sources of credit to the non-financial private sector. Besides a broad (standardised) credit concept put forward by the ESRB, the Bank also reports an additional (preferred) credit gap, covering only bank loans (adjusted for securitisation). The National Bank of Belgium decision to model its credit-to-GDP gap estimates on resident bank loans adjusted for securitisation is based on three criteria, namely the available data sample length, the sensitivity of the gap to high-frequency variations in the credit data, and the timing of the data releases (see Annex 2 for further details).

Alongside the credit-to-GDP gap statistics, the nominal growth rate of bank loans to the non-financial private sector is included in the set of key indicators. As a direct measure of (net) credit growth, it can be a useful corroborative indicator of rising risks in the upswing. Furthermore, nominal credit growth has in the past tended to respond faster to the turning of the financial cycle than the credit-to-GDP gap, so it may provide more timely signals for the potential release of the countercyclical capital buffer.

In order to gain better insight into the credit cycle, it is interesting to break down aggregate credit and analyse how credit to households and the non-financial corporate sector has developed. Therefore, for both the credit-to-GDP gap and the credit growth statistics, a sectoral decomposition (households vs. non-financial corporations) is considered. Whereas the presence of signals of excessive credit developments in both sectors may provide support for the use of a broad-based instrument such as the countercyclical capital buffer, strong developments specific to only one of the sectors may initially warrant a more targeted (e.g. sectoral) policy intervention.

Moreover, in the specific context of corporate credit growth, the Bank takes on board the possibility that aggregate credit growth is driven by individual large non-financial corporations, individual banks, narrow sectoral developments, etc. To better understand the drivers of aggregate corporate credit growth, the Bank draws extensively on the corporate credit register to distinguish between broad-based dynamics in corporate credit growth (relevant for assessing systemic cyclical risk and the CCyB decision) and idiosyncratic events (e.g., large, but isolated drawdowns in the context of tax prepayments), mechanical aspects (e.g., base effects), one-off transactions (e.g., operations by a single multinational), etc.

Non-financial private sector resilience

High indebtedness of the non-financial private sector increases its vulnerability to economic shocks, in turn raising the likelihood of large losses to the banking sector during an economic downturn. Excessive credit developments in the upswing of the financial cycle may substantially increase the leverage position of the non-financial private sector and weaken the resilience of households and non-financial corporations.

The key indicators therefore include debt-to-GDP for both households and non-financial corporations as measures of indebtedness. As debt sustainability not only depends on the liabilities side of households' and non-financial corporations' balance sheets but also on their overall financial position, the net financial asset position of the non-financial private sector is also accounted for in the assessment of overall non-financial private sector resilience.

Financial and asset markets

Financial crises are often preceded by a period of mutually reinforcing credit and asset price dynamics. High lending and excessive liquidity can drive up asset prices. This can push up collateral value and potential risk illusion by financial actors, further fuelling upward credit developments. Therefore, excessive dynamics in financial and asset markets may indicate the build-up of widespread imbalances. A sudden reversal of asset prices may result in losses for the banking sector and important second-round effects if market confidence shrinks. The bursting of real estate price bubbles in particular may increase loss rates both as a result of the direct effect of borrowers defaulting on their mortgage loans and the indirect confidence effects resulting in a fall in total demand and economic activity.

These risks are captured by the key indicators relating to risks stemming from financial and asset markets. Interest rate variables included as key indicators are 10-year government bond yields as well as interest rates on mortgage loans to households and on bank loans to non-financial corporations. Equity price developments are monitored through the nominal growth rate of and the price/earnings ratio on the BEL 20 stock index Furthermore, low interest rates on loans to the non-financial private sector may indicate more lenient lending standards, exacerbating the risk of bank losses during the downturn. Real estate price developments are summarised by nominal and real house price growth.

Banking sector resilience

The assessment of systemic risk should account for the financial sector's resilience. Well-capitalised banking sectors with strong liquidity positions are better able to absorb shocks and may require fewer macroprudential policy interventions. A sudden increase in leverage within the financial sector may signal the build-up of imbalances due to excessive risk-taking in the upswing of the credit cycle. Similarly, greater reliance on unstable (wholesale) funding sources can play a role in driving the broader credit cycle, by reinforcing the rise in debt and asset prices.

The key indicators capturing these risks are bank solvency indicators and the loan-to-deposit ratio. Bank solvency indicators include a risk-weighted indicator (common equity tier 1 ratio) and a simple ratio of accounting equity to total assets. These measures provide information on the amount of capital available in the system to absorb losses and may signal a build-up of leverage in the banking sector. The loan-to-deposit ratio provides a simple measure on the potential reliance on unstable funding sources that may encourage leverage both within the financial sector as well as the real economy.

External imbalances

The position of the Belgian economy in the global financial system is also relevant for determining the CCyB. International capital flows to and from Belgium can give rise to vulnerabilities. The current account balance (as a percentage of GDP) is therefore also a key indicator, because a protracted current account deficit will be accompanied by net international capital inflows. Foreign capital flows tend to be more volatile and can therefore give rise to risks. In addition, the net international investment positions are monitored, which are well established in the literature as leading indicators of the credit cycle.

Asset quality

Monitoring asset quality is paramount to (a) assess the build-up of risk in banks' corporate credit portfolios, (b) help calibrate the CCyB buffer capable of absorbing the mounting risk, (c) assess to what extent risks are materialising, and (d) assess whether banks are effectively using freed-up capital to dampen the impact of risk materialisation, for instance by offering financing solutions to viable but overindebted borrowers. To that end, the Bank closely tracks indicators such as the share of non-performing loans, forborne loans (loans for which banks have made concessions to debtors facing (or about to face) financial difficulties in meeting their commitments), and the loan-loss-ratio (the net flow of new impairments for credit losses, expressed as a percentage of the total stock of loans).

Other indicators and considerations

For transparency and communication purposes, the set of key indicators is only a small sub-set of the quantitative information used in setting the countercyclical buffer rate. However, as mentioned above, the Bank draws on a wide set of data and indicators for its quarterly decision on the countercyclical buffer rate. Some additional indicators that are considered particularly relevant to evaluate the four risk dimensions include the following:

- While not included in the set of published key indicators alternative debt -to-GDP ratios and gap estimates extracted from these measures are also closely monitored and factored into the decision on the countercyclical buffer rate.
- Similarly, the set of variables monitored to assess real estate market trends exceeds the house price growth key variables and includes for instance the price-to-income ratio, an interest-adjusted affordability ratio and model-based overvaluation measures.
- Developments in the banking sector and the broader financial sector are obviously closely monitored in the Bank's overall risk assessment framework. Hence, a good many additional bank balance sheet and financial sector indicators (covering for instance profitability, lending standards, loss rates, IFRS9 stage evolutions, solvency and liquidity positions) are considered for setting the countercyclical buffer rate.
- Indicators of market turbulence (such as CISS indicators or indicators of stress in bank funding markets) are also taken into account.

While most (key or additional) indicators are focused on identifying the build-up of vulnerabilities that may warrant the activation of the countercyclical capital buffer, others (such as those related to asset quality or market turbulence) are well suited to inform about a potential release of the buffer.

Finally, as already mentioned, the countercyclical capital buffer is only one of the macroprudential instruments available to the Bank. Despite the emergence of cyclical systemic risks, it may still decide not to activate the countercyclical capital buffer when another, for instance more targeted, instrument seems more suitable or is already in place. Similarly, the ECB's opinion will also be accounted for when the Bank sets the countercyclical buffer rate.

3. Communication of the countercyclical buffer rate decision

In order to enhance the effectiveness and efficiency of the countercyclical capital buffer, legislation imposes transparency and communication requirements regarding the setting of the countercyclical buffer rate.

According to Article 5 in Annex IV of the Law of 25 April 2014 on the status and supervision of credit institutions, the Bank has to publish its quarterly decision on the countercyclical buffer rate on its website, with reference to the following information: the applicable buffer rate; the credit-to-GDP ratio and gap; and the justification for the buffer rate, including the reference indicators accounted for in the decision. When the buffer rate is raised, the date from which it applies should be notified. This date is in principle 12 months after the announcement; a shorter period needs to be justified by exceptional circumstances. When the buffer rate is reduced, an indicative period during which no increase is expected and a justification for this period must be provided.

In line with this legal requirement and the ESRB Recommendation, each time a table with the latest values for the key indicators will be included in the Bank's quarterly communication on the countercyclical buffer rate. This table will be complemented by a statistical annex plotting changes in the key indicators over time. The Bank aims to deliver succinct but clear messages in its narrative justifying the countercyclical buffer rate decision.

Table 1: Key indicators[1]

Variable	Unit	Latest period	Value
Non-financial private sector credit cycle (resident bank loans)			
Preferred credit-to-GDP gap	% GDP	2022 Q1	-0.8
Households	% GDP	2022 Q1	-2.0
Non-financial corporations	% GDP	2022 Q1	1.2
CCyB guide related to preferred credit gap[2]	% RWA	2022 Q1	0.0
Standardised credit-to-GDP gap	% GDP	2021 Q3	-20.8
CCyB guide related to standardized credit gap[2]	% RWA	2021 Q3	0.0
Bank loan growth	y-o-y %	2022 M04	5.4
Households	y-o-y %	2022 M04	5.9
Non-financial corporations	y-o-y %	2022 M04	4.8
p.m. Credit-to-GDP ratio[3]	% GDP	2022 *Q1*	84.1
Non-financial private sector resilience			
Debt-to-GDP ratio	% GDP	2021 Q3	124.4
Households	% GDP	2021 Q3	63.3
Non-financial corporations	% GDP	2021 Q3	61.1
Net financial assets	% GDP	2021 Q4	145.1
Financial and assets markets			
Equity prices, nominal (Euro Stoxx 50)	y-o-y %	2022 M05	-7.8
Price-earnings ratio (Euro Stoxx 50)[4]	–	2022 M05	14.3
House prices, nominal	y-o-y %	2021 Q4	8.0
House prices, real	y-o-y %	2021 Q4	3.3
10-year government bond yield	% points/y	2022 M05	1.58
Bank lending rate on mortgage loans to households	% points/y	2022 M03	1.5
Bank lending rate on loans to non-financial corporations	% points/y	2022 M03	1.6
Banking sector resilience			
CET 1 capital ratio	%	2022 Q1	16.8
Equity-to-total assets ratio	%	2022 Q1	6.9
Loan-to-deposit ratio	%	2022 Q1	88.8
External imbalances			
Current account	% GDP	2021 Q4	-0.4
Net international investment position	% GDP	2021 Q4	57.0
Asset quality			
NPL ratio			
Belgian non-financial corporations	% total loans	2022 Q1	3.3
Belgian households	% total loans	2022 Q1	1.3
Forbearance ratio			
Belgian non-financial corporations	% total loans	2022 Q1	3.8
Belgian households	% total loans	2022 Q1	1.4
Loan loss ratio[5]			
Consolidated, including interbank loans	b.p.	2021	2.4
Non-consolidated, excluding interbank loans	b.p.	2021	10.6

Sources: Thomson Reuters, NBB.

[1] Monthly averages for daily data. Data are shown end of quarter (March, June, September, December) or for the latest month available.

[2] CCyB guides are expressed in percentage of risk-weighted assets.

[3] Outstanding amounts of loans granted by resident monetary financial institutions to households and non-financial corporations, including those securitized, in percentage of GDP.

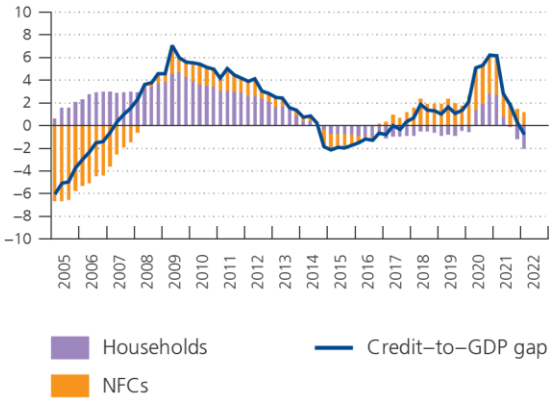
[4] Price earnings (P/E) ratio is a trailing (12 months) P/E ratio.

[5] The loan loss ratio is the net flow of new impairments for credit losses, expressed as a percentage of the total stock of loans (one basis point is one-hundredth of one per cent).

STATISTICAL ANNEX

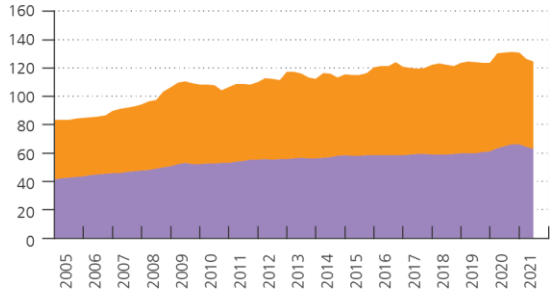
Credit-to-GDP gap
(quarterly data, % GDP)

Credit-to-GDP gap: sectoral breakdow
(quarterly data, contributions in % GDP)

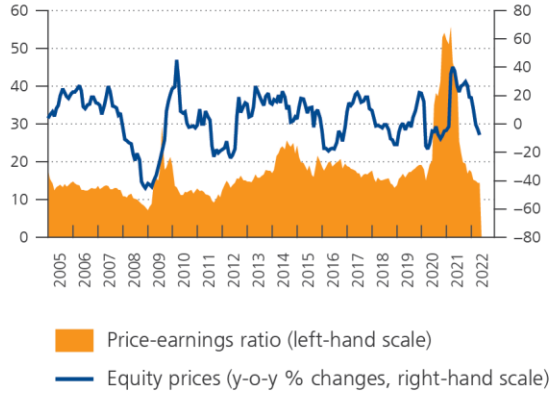


Bank loan growth
(monthly data, y-o-y % changes)

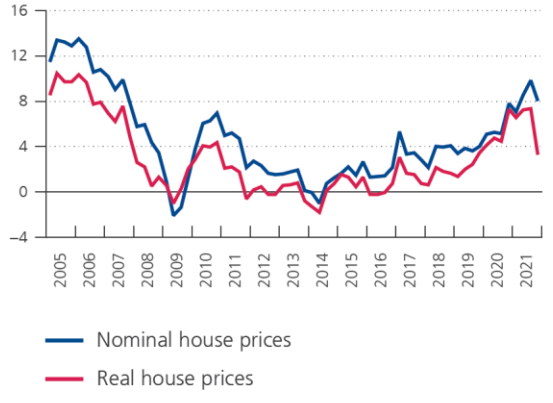
Non-financial private sector debt
(quarterly data, % GDP)



Equity prices
(monthly data, Euro Stoxx 50 index)



House prices
(quarterly data, y-o-y % changes)



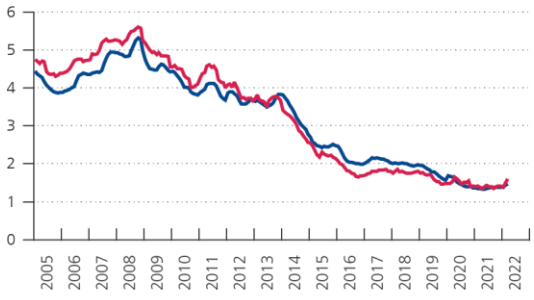
Sources: Thomson Reuters, Refinitiv, NBB.

STATISTICAL ANNEX (cont.)

Short- and long-term interest rates
(monthly data, % points per year)

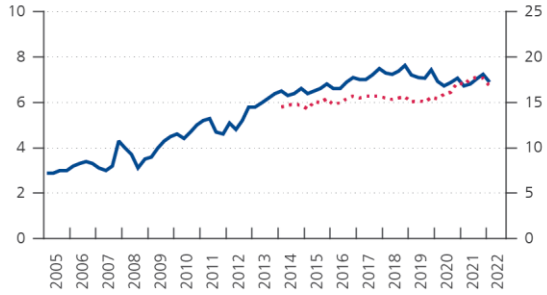
3-month OIS
10-year government bond yield

Bank lending rates
(monthly data, % points per year)



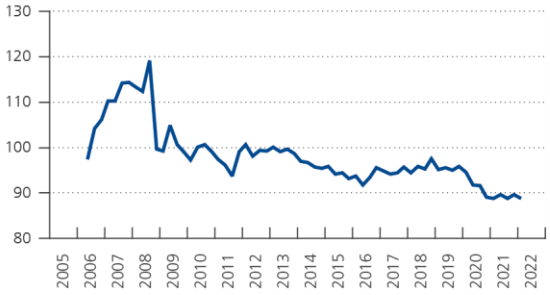
Households (mortgage loans, maturity over 10 years)
NFCs (maturity over 5 years)

Bank solvency
(quarterly data, %)



Equity-to-total asset ratio (accounting value, left-hand scale)
CET1 capital ratio (right-hand scale)

Loan-to-deposit ratio
(quarterly data, %)



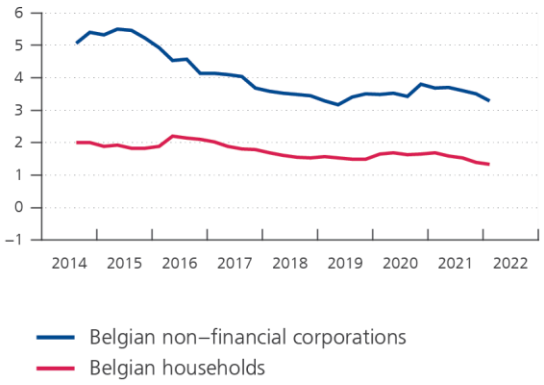
Current account
(quarterly data, % of GDP)

Net international investment position
(quarterly data, % of GDP)

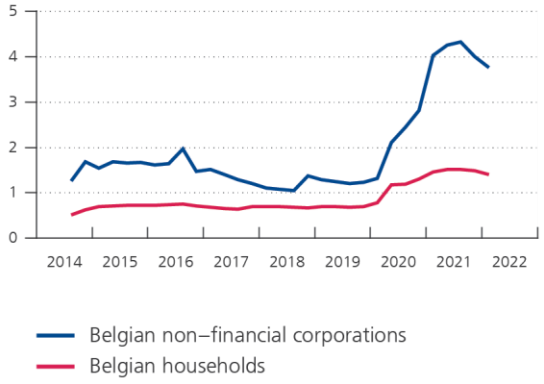
Sources: Thomson Reuters, Refinitiv, NBB.

STATISTICAL ANNEX (cont.)

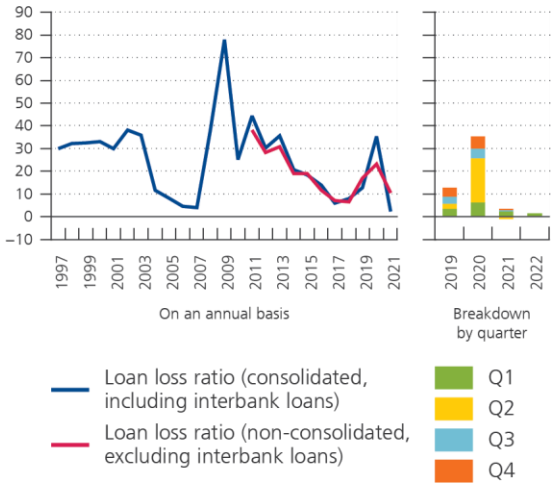
Non–performing loans
(consolidated end–of–period data, % of total loans)



Forbearance ratio
(consolidated end–of–period data, % of total loans)



Loan loss ratio
(in basis points)



Sources: Thomson Reuters, Refinitiv, NBB.

Annex 1: Data definition and sources

VARIABLE	DEFINITION	UNIT	SOURCE
Non-financial private sector credit cycle (resident bank loans)			
Credit-to-GDP gap	Deviation of the credit-to-GDP ratio from its long-run trend, computed using a recursive one-sided Hodrick-Prescott filter with smoothing parameter set to 400000	Percentage of GDP[3]	NBB
Bank loan growth	Cumulative flows of new loans granted by resident monetary financial institutions[1] to households[2] and non-financial corporations over the past 12 months in percentage of the outstanding amount of existing loans in the corresponding period of the previous year, including those securitised and otherwise transferred	Year-on-year percentage change	NBB (scheme A)
Credit-to-GDP ratio	Outstanding amounts of loans granted by resident monetary financial institutions[1] to households[2] and non-financial corporations, including those securitised and otherwise transferred, in percentage of GDP	Percentage of GDP[3]	NBB (scheme A)
Non-financial private sector resilience			
Debt-to-GDP ratio			
– Households	Total outstanding loans taken out by households[2] and non-profit institutions servicing households, in percentage of GDP	Percentage of GDP[3]	NBB (financial accounts)
– Non-financial corporations	Total outstanding loans taken out and debt securities issued by non-financial corporations, excluding loans granted by other resident non-financial corporations, captive financial institutions and non-institutional money lenders and the non-banking foreign sector, in percentage of GDP	Percentage of GDP[3]	NBB (financial accounts)
Net financial assets	Difference between households' and non-financial corporations' outstanding total assets and liabilities in percentage of GDP	Percentage of GDP[3]	NBB (financial accounts)

1 Excluding the central bank.
2 Including non-profit institutions servicing households.
3 The GDP figure used as the denominator corresponds to the sum of quarterly GDP at market prices over the current and the past three quarters.

Annex 1: Data definition and sources (cont.)

VARIABLE	DEFINITION	UNIT	SOURCE
Financial and asset markets			
Equity prices (BEL 20)	Weighted index of equity prices of the 20 companies with the largest market capitalisation listed on Euronext Brussels	Year-on-year percentage change	Refinitiv
Price-earnings ratio (BEL 20)	Total market value of the constituents of the BEL 20 index divided by total earnings (trailing 12 months). Negative earnings treated as zero.	–	Refinitiv
House prices, nominal	Price index for existing dwellings	Year-on-year percentage change	NBB
House prices, real	Price index for existing dwellings divided by the deflator of private consumption	Year-on-year percentage change	NBB
10-year government bond yield	Yield on 10-year linear government bonds (OLOs)	Percentage points per year	Refinitiv
Bank lending rate on mortgage loans to households	Weighted average of initial interest rates on new loans with maturity over 10 years granted to households for house purchase	Percentage points per year	NBB (MIR survey)
Bank lending rate on loans to non-financial corporations	Weighted average of initial interest rates on new loans of up to € 1 million with maturity over 5 years granted to non-financial corporations	Percentage points per year	NBB (MIR survey)
Banking sector resilience			
CET 1 capital ratio	Common equity tier 1 capital of resident deposit-taking corporations divided by their total risk-weighted assets; on a consolidated basis	Percentage	NBB
Equity-to-total-assets ratio	Total assets of resident deposit-taking corporations divided by their total equity; on a consolidated basis and according to the accounting value	Percentage	NBB
Loan-to-deposit ratio	Loans and advances of resident deposit-taking corporations to other sectors divided by deposits measured at amortised costs; on a consolidated basis	Percentage	NBB

Annex 1: Data definition and sources (cont.)

VARIABLE	DEFINITION	UNIT	SOURCE
External imbalances			
Current account	The current account covers all transactions occurring between resident and non-resident entities, and refers to international trade in goods and services, as well as primary and secondary income.	Percentage of GDP	NBB
Net international investment position	The economy's net international investment position is the difference between an economy's external financial assets and liabilities.	Percentage of GDP	NBB
Asset quality			
NPL ratio	The NPL ratio is the share of loans that may not be repaid, due to their borrower getting into financial trouble, or that are already in arrears.		
Belgian non-financial corporates (NFCs)	NPL ratio for loans and advances of resident deposit-taking corporations to Belgian non-financial corporates; on a consolidated basis	Percentage of total loans to Belgian NFCs	NBB
Belgian households (HHs)	NPL ratio for loans and advances of resident deposit-taking corporations to Belgian households; on a consolidated basis	Percentage of total loans to Belgian HHs	NBB
Forbearance ratio	The forbearance ratio is the share of loans for which concessions (e.g. in the form of repayment deferral or an extended term to maturity) have been granted to debtors facing financial difficulties.		
Belgian non-financial corporates	Forbearance ratio for loans and advances of resident deposit-taking corporations to Belgian non-financial corporates; on a consolidated basis	Percentage of total loans to Belgian NFCs	NBB
Belgian households (HHs)	Forbearance ratio for loans and advances of resident deposit-taking corporations to Belgian households; on a consolidated basis	Percentage of total loans to Belgian HHs	NBB
Loan loss ratio	The loan loss ratio is the net flow of new impairments for credit losses, expressed as a percentage of the total stock of loans (one basis point is one-hundredth of one per cent).		
Consolidated, including interbank loans	Loan loss ratio for all loans granted by resident deposit-taking corporations; on a consolidated basis	Basis points	NBB
Non-consolidated, excluding interbank loans	Loan loss ratio for all loans granted by resident deposit-taking corporations, to the exception of loans to other deposit-taking corporations; on a non-consolidated basis	Basis points	NBB

Annex 2: Choice of the credit concept for credit-to-GDP gap calculation

Based on its macroprudential mandate, the National Bank of Belgium closely monitors credit developments in the Belgian economy and in particular in the non-financial private sector. To this end, it publishes on a quarterly basis estimates of the credit-to-GDP gap. In addition, a wide range of additional indicators are integrated into the assessment of the credit cycle, any potentially ensuing systemic risks and the decision on the countercyclical capital buffer.

In this context, the National Bank of Belgium puts forward both a narrow and a broad credit concept that are central in monitoring the credit cycle and potential risks to financial stability. First, the narrow credit concept, comprising lending by resident banks to the non-financial private sector, is used to work out the credit-to-GDP gap. Second, a broader credit concept, comprising a wider range of debt instruments, is proposed to monitor the overall risk exposure of the non-financial private sector. The latter debt concept is an estimate of the consolidated debt level (excluding different types of inter-company debt exposures) of the non-financial private sector.

This annex motivates the choice of the two debt concepts mentioned above. Specific features of the Belgian financial system (notably the high level and turnover of inter-company loans) and related statistical issues (revisions) imply that the credit-to-GDP gap taken from any broad credit concept comprising these inter-company loans becomes excessively volatile, especially at the relevant (quarterly) decision frequency. Debt concepts, excluding this highly volatile (and less relevant from a credit risk perspective) inter-company debt, provide a much more informative and stable signal for the credit cycle. Besides the treatment of inter-company loan volatility, data availability (improving the robustness of the estimated credit-to-GDP gap) and timeliness of information (publication lags) are other important criteria in the choice of or decision on underlying debt concepts. This annex proceeds in three steps. First, different credit concepts are presented, some of them not taking into account the specific features of the domestic financial system and statistical properties of the Belgian data. Second, the methodology used to extract long-term trends is set out and credit-to-GDP ratios and gaps related to different credit concepts are compared. Third, as a complement to the credit-to-GDP gap measure, the preferred debt-to-GDP ratio – part of the set of key indicators – is presented.

Choice of credit concept for the credit-to-GDP ratio

In principle, different credit concepts could be used for the computation of credit-to-GDP ratios and credit-to-GDP gaps. Depending on the definition and composition of these credit/debt concepts, some of them may be more appropriate than others for monitoring credit risk and credit developments in Belgium from a practical point of view.

In this annex, we evaluate four possible debt concepts, differing in the debt composition, ranging from an exhaustive debt concept (the first concept listed below) to a narrow interpretation of debt (the fourth concept below). The specific definitions are as follows:

- Exhaustive debt concept: this concept includes all loans granted to the Belgian non-financial sector as well as debt securities, trade credit and pension scheme liabilities of the Belgian non-financial sector (in line with Basel III and the ESRB recommendation);
- MIP debt concept: this concept is consistent with the EC's macroeconomic imbalance procedure concept of debt and includes all loans and debt securities on a consolidated basis (excluding (only) domestic inter-company debt);
- Broad debt concept: this concept includes all loans on a consolidated basis (excluding domestic inter-company loans), but excludes loans granted by the foreign non-banking sector and by captive financial institutions and non-institutional money lenders in an attempt to exclude all (domestic and foreign) inter-company financing. The concept also comprises debt securities;
- Narrow debt concept: this concept refers to bank loans granted by resident banks. In this concept (as in all those mentioned above), loans are adjusted for securitisation in order to

cover all loans granted (both directly and indirectly) by MFIs and assess credit risk from the perspective of the borrowers.[5]

The choice of the National Bank of Belgium to model its credit-to-GDP gap estimates on resident bank loans adjusted for securitisation (narrow debt concept) is based on three criteria, namely the available data sample length, the sensitivity of the gap to high-frequency variation in the credit data, and the timing of the data releases. The table below summarises the characteristics of the four different credit concepts along these lines. According to these criteria, the narrow debt definition is preferred since: (1) the sample length is greater than for any of the other concepts (it covers more than double the time span of the other concepts); (2) it does not include excessively volatile (and less relevant) credit series such as inter-company loans; and (3) data are available sooner than for the alternative concepts.

Credit concepts and descriptive statistics

	Exhaustive debt concept	MIP debt concept	Broad debt concept (used for debt-to-GDP ratio)	Narrow debt concept (used for credit-to-GDP gap)
Sample dates[1]	1998Q4-2015Q2	1998Q4-2015Q2	1998Q4-2015Q2	1980Q1-2015Q3
Publication lag[2]	≈ 104 days	≈ 104 days	≈ 104 days	≈ 28 days
Credit-to-GDP ratio (% GDP, absolute value of first differences)				
Volatility (stand. dev.)	3.6%	3.1%	1.3%	1%
95th percentile	7.9%	6.4%	2.9%	2.4%
Credit-to-GDP gap (% GDP, absolute value of first differences)				
Volatility (stand. dev.)	3.3%	2.9%	1.1%	0.9%
95th percentile	7%	5.2%	2.4%	2%
Number of cycles	≈ 1	≈ 1/2	≈ 1/2	≈ 2

1 Data on loans granted by resident banks (narrow concept) between 1980 and 1998 are available from the BIS website (and are based on NBB figures), data after 1999 come from the BSI statistics (NBB). Data from the financial accounts (other concepts) are available back to 1998Q4.

2 Financial accounts data (exhaustive, MIP and broad concepts) are in general released about 104 calendar days after the end of the quarter they refer to. BSI statistics (narrow concept) are released with a lag of about 28 calendar days.

Methodology to extract the credit-to-GDP gap

The methodology used to calculate the credit-to-GDP gap is in line with the Basel III framework and the ESRB recommendation. Accordingly, the recursive, one-sided, HP filter is used for calculating the long-term trend in the credit-to-GDP ratio. The smoothing parameter (generally referred to as λ) is set at 400,000 to capture the (low) frequency components of the credit cycle. The filter is used so as to ensure that only information available at each point in time is used for calculating the trend.

The HP filter effectively functions as a high-pass filter, collecting all cycles with frequencies considered relevant for the credit cycle or higher in the credit-to-GDP gap. While this filter is thus able to extract the relevant credit cycle frequencies, in practice it also has some operational implications. First, the extracted credit-to-GDP gap also includes the higher frequencies and hence becomes sensitive to the volatility of the underlying credit/debt ratio. Specifically, as the HP filter only allows for a very inert and slowly-moving trend in the credit/debt ratio, practically all short-term variations (including data revisions and large changes in credit/debt due to reallocation of credit portfolios by finance centres for instance) will be included in the estimated credit-to-GDP gap.

5 The narrow debt concept is an adjusted version of the BIS domestic bank loan data (available online) since it is adjusted for securitisation.

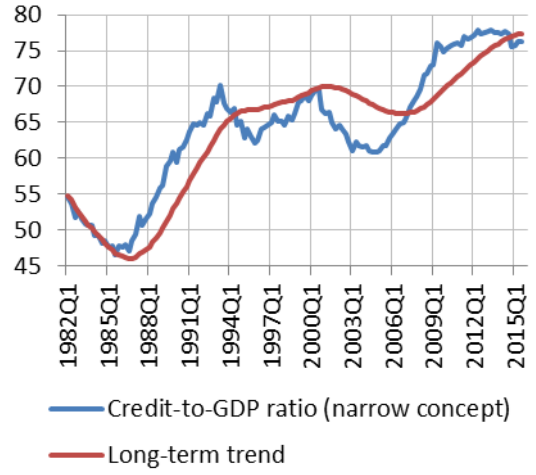
Second, as financial and credit cycles have a long time span (typically between 8 and 20 years), a wide data sample is required to obtain reasonably robust estimates of the credit-to-GDP gap.

As illustrated in the table, basing the estimation of the credit-to-GDP gap only on resident bank loans adjusted for securitisation (narrow concept) has three advantages. First, it covers by far the largest time span of all the credit concepts considered since data go back to 1980Q1 compared with 1998Q4 for the other concepts. In practice, this allows the HP filter to cover (approximately) two full credit cycles and to rely on a large sample for a precise and robust estimate of the underlying long-term trend. The other concepts cover at best one credit cycle.

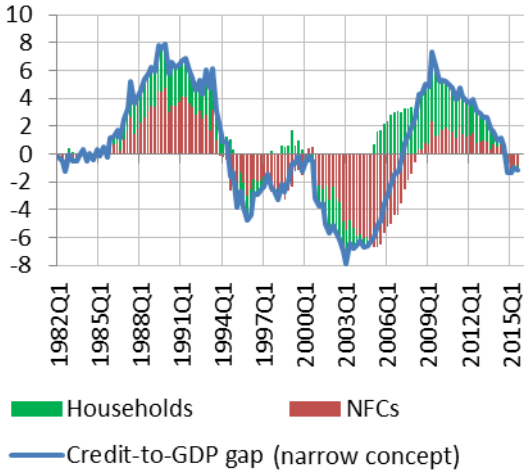
Second, due to the exclusion of the more volatile inter-company debt components, the narrow credit concept yields less volatile high-frequency variation than any other concept. As can be observed from the table, the credit-to-GDP ratio based on the narrow credit definition displays the least volatility in terms of quarter-on-quarter differences. Moreover, for this concept, one observes less extreme movements in general, i.e. the tails of the empirical distribution of these differences are less fat. As argued above, the excessive volatility present in the other concepts is related to the nature of the credit series included in these concepts, such as inter-company loans. This excessive volatility of the other, broader, credit/debt ratios moreover carries over, almost one-to-one, in the estimated credit-to-GDP gaps.[6] From an operational perspective, this excessive volatility in credit-to-GDP gaps risks generating too many "false positives" in the gap signal and therefore effectively reduces the informative content of the gaps of the broader credit/debt concepts (e.g. exhaustive and MIP debt concepts).

Third, a credit-to-GDP gap based on the narrow credit definition is available earlier than any other concept since it is based on MFI balance sheet items (BSI) statistics. BSI data are available in general about 28 calendar days after the end of the period they refer to, while the financial accounts data underlying the other (broader) concepts are available with a lag of about 104 calendar days on average. This generally allows the narrow credit concept to cover one more quarter than the other concepts at the moment of the decision-making regarding the level of the countercyclical capital buffer. This relatively short publication lag may prove relevant to monitor credit developments at times of excessive risk-taking in the upswing of the credit cycles and/or to intervene more timely. This is all the more important given the implementation lag allowed in the enforcement of capital decisions in the context of the countercyclical capital buffer.

Credit-to-GDP ratio (narrow debt concept)
(quarterly data, % GDP)



Credit-to-GDP gap (narrow debt concept)
(quarterly data, sector contributions in % GDP)

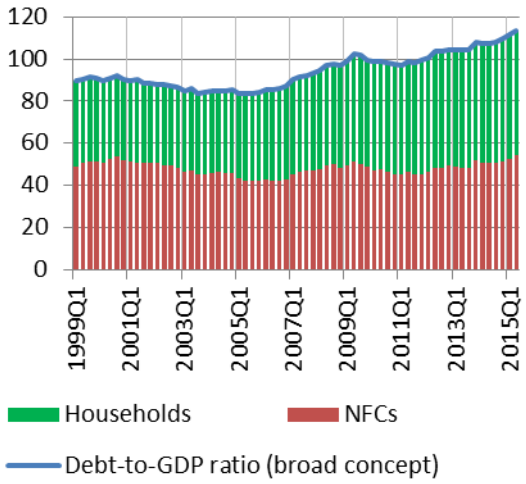


6 In the case of the alternative credit-to-GDP gaps, the volatility also partly stems from the limited samples (data from 1998Q4 only) which complicates estimates of long-term trends.

The debt-to-GDP ratio as additional indicator

Given that the broad concept includes all types of loans (excluding domestic and foreign inter-company financing) as well as debt securities, it can be referred to as a broad *debt* concept. Although this concept has some shortcomings in the context of credit-to-GDP gaps, the analysis of the *level* and the *trend* of a debt-to-GDP ratio based on this concept is useful further information on the indebtedness of the private non-financial sector and, therefore, on its credit risk profile and vulnerability to economic shocks.

According to this concept, the debt-to-GDP ratio is 113.1 % as of 2015Q2, while the credit-to-GDP ratio associated with the narrow credit definition (based exclusively on resident bank loans) is 76.5 % as of 2015Q3. In addition to the level of the debt-to-GDP ratio, its developments (trend) will be closely monitored since excessive debt build-up (either through loans or debt securities) may weaken the resilience of households and non-financial corporations.

The broad debt-to-GDP ratio is therefore included in the list of key indicators taken into account when setting the countercyclical capital buffer. While not included in the set of key indicators that will be regularly published, debt-to-GDP ratios and gap estimates based on broader debt measures (exhaustive and MIP debt concepts) are also closely monitored and factored into the decision on the countercyclical buffer rate.

Debt-to-GDP ratio (broad debt concept)
(quarterly data, sector contributions in % GDP)