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A quarterly review of the countercyclical capital buffer

A study prepared for a meeting of
the Financial Stability Committee

Executive summary

This study is a compilation of information for the purposes of assessing the intensity of cyclical systemic risk and the level and adequacy of the countercyclical capital buffer (CCyB) rate recommended by the Financial Stability Committee (FSC). This is the buffer's first review conducted in compliance with a new [*Strategy on the application of the countercyclical capital buffer in Poland*](#) and a new [*Methodology for setting the countercyclical capital buffer*](#).

The intensity of cyclical risk, measured using an early warning model, has risen. The rising cyclical risk assessed on the basis of the early warning model is accompanied by no signs of excess credit growth, as credit growth itself remains relatively not very high.

The registered rise in risk intensity is not as such to justify the determination of the countercyclical capital buffer over the positive neutral rate for the countercyclical capital buffer adopted by the Committee.

This study is divided into three sections.

Section 1 provides a description of macro-financial developments and a synthetic summary of strains in the financial system in Poland. If any crisis events emerge, it will not be advisable to activate a countercyclical buffer, even if the early warning model would imply such a move. Elevated current stresses and crisis events could simultaneously justify a partial or full release of the buffer.

Section 2 presents the results of the early warning model. The role of models of this class is to capture a signal about a forthcoming financial crisis from the data analysed. The early warning model is employed to measure the intensity of cyclical risk and is applied to indicate the right timing of the activation of the countercyclical buffer and its adequate level.

Section 3 presents the progression of credit gap values and of other variables that illustrate lending in Poland. The early warning model, whose results are discussed in Section 2, includes the variables and additionally pools information coming from the variables with other data. Therefore, the variables have lost their dominant position in cyclical risk analysis in the context of the countercyclical buffer. However, these variables continue to play an auxiliary role in identifying the credit cycle.

1. Macrofinancial developments and current financial system stress

The economic situation in the world remains weakened. In the euro area, annual GDP growth in H2 2023 declined compared to H1 2023 and was close to zero. On the other hand, the annual GDP growth in Central and Eastern Europe in H2 2023 increased slightly but was markedly lower than the multiannual average. In the United States, GDP growth, in annual terms, accelerated in H2 2023. Due to falling commodity prices on global markets, cost pressures remained limited, which was reflected in low, and in many economies, negative, output price growth.

In recent months, sentiment on the global financial markets has improved as a result of the expectations of interest rate cuts by major central banks in the current year, despite the persistence of weakened economic conditions in some of the major economies and uncertainty about their prospects.

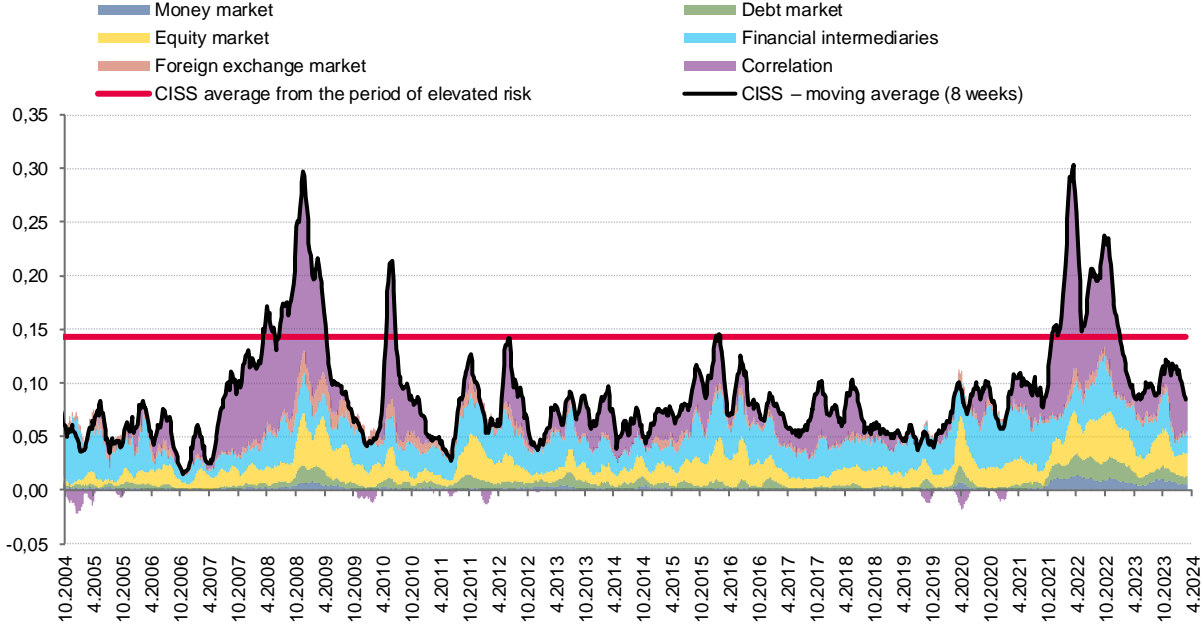
Amid global economic slowdown, Poland has also experienced a period of slower economic growth. However, the situation on the Polish labour market remains strong and unemployment is low.

Lending is recovering. In 2024 Q1, the annual growth rate of loans to the non-financial sector reached 1.6% year-on-year. In the period, the growth rate of all main types of credit was positive. The production of new housing loans has been recovering following its decline caused by an increase in interest rates.

Since March 2023, the Composite Indicator of Systemic Stress (CISS)¹ has run below the average level from the period identified by the European Systemic Risk Board (ESRB) as a period of elevated risk (see Figure 1). Therefore, the CISS is presently not elevated. **Current stress in the financial system is not a contraindication to activating a buffer.**

¹ The ESRB recommend monitoring the CISS (ESRB 2014/1, Recommendation D, paragraph 2).

Figure 1. Composite Indicator of Systemic Stress in the financial system



Notes: The CISS measures the current state of financial sector turmoil, reflected in market quotations. The intensity of the turmoil in a given period is interpreted as an ex-post measure of systemic risk. The CISS was originally developed for the euro area and has been applied by both the ECB and the ESRB. The sub-indices that comprise the CISS include five areas of the domestic financial market: the equity market, the money market, the foreign exchange market, the debt market and the financial intermediaries market. *Correlation*, or the sixth variable, increases when stress begins to prevail in several sectors at the same time. Periodically, this variable may be negative; this variable refers to a situation in which stress in some areas is offset by a positive stress-free situation in other areas. Such a design of the CISS puts more weight on situations in which stress prevails in several market segments at the same time.

The red line is used to mark the average CISS value from the period classified by the ESRB as a period of elevated risk (August 2007 – November 2009).

Data for the period running from 26 October 2004 to 26 April 2024.

Source: NBP and Bloomberg.

2. Cyclical risk intensity²

The adequate level of the countercyclical capital buffer (CCyB) is determined in accordance with Equation 1:

$$CCyB = \max[MMCL - MRC, nCCyB] \quad 1$$

where: MMCL stands for Minimum Macroprudential Capital Level; MRC stands for Macroprudential Regulatory Capital, which is equal to the Pillar 1 capital requirement of Tier 1 capital and the conservation buffer ($MRC = pillar_1 + CCoB$); and nCCyB means the positive neutral rate for the countercyclical buffer level.

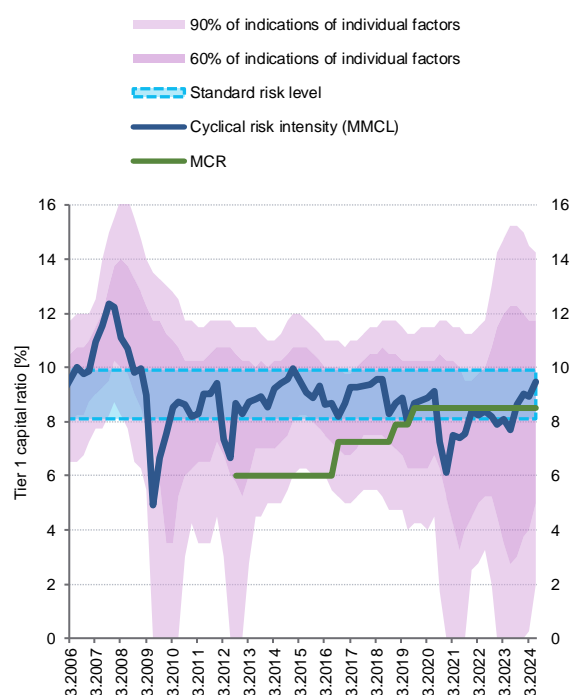
MMCL defines the minimum level of the capital ratio in the banking system which – taking into consideration other variables – reduces the signal of a crisis. The higher the level of the capital ratio, the lower the risk of a crisis. Therefore, changes in the MMCL reflect changes in cyclical risk intensity. An increase in the MMCL means that the model variables imply an increase in cyclical risk intensity, while a decline in the MMCL indicates a decrease in risk intensity.

Over the last four readings (2023 Q3–2024 Q2, see Figure 2) cyclical risk measured using the MMCL has increased. The observed level of the MMCL is in the range defined as a standard risk level.³ The recorded increase in cyclical risk intensity results primarily from low risk pricing on the global financial market, and to a lesser extent, from readings from the domestic real estate market (see Figure 3).

² The results in this section of the study were elaborated based on an updated methodology for calibrating the countercyclical capital buffer: [Financial Stability Committee \(2024\), Methodology for setting the countercyclical capital buffer](#).

³ A standard risk level is defined as a range such that only periods of more than average turmoil in the domestic financial market or its immediate environment fall outside it. The following are outside the range of a standard risk level: (i) a rise in cyclical risk intensity readings in view of a forthcoming global financial crisis, (ii) a fall in cyclical risk intensity readings in view of the consequences of a global financial crisis, (iii) a fall in cyclical risk intensity readings in view of the euro area sovereign debt crisis, (iv) a fall in cyclical risk intensity readings in view of the COVID-19 pandemic, (v) a fall in cyclical risk intensity readings following the outbreak of war in Ukraine. As a result, within the standard range of risk, the central measure of cyclical risk intensity \in (8.1%; 9.9%).

Figure 2. Cyclical risk intensity (MMCL)

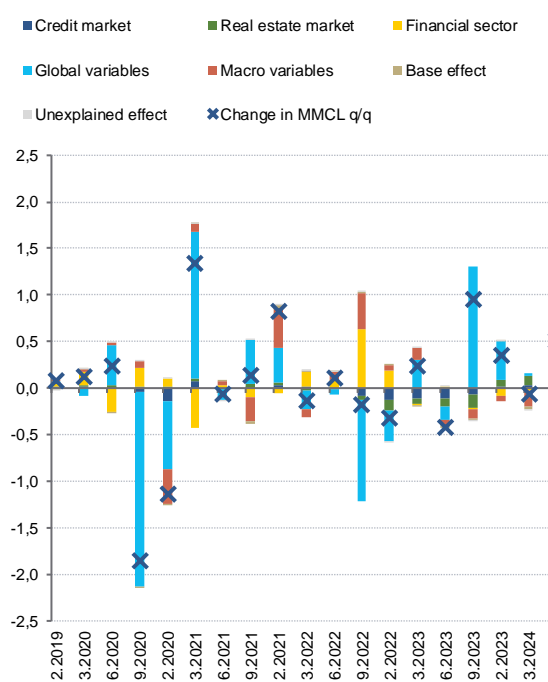


Notes (left panel, Figure 2): The model-based reading of cyclical risk intensity (MMCL) is declining in crisis situations because when a negative shock occurs, cyclical risk is discharged; hence, a forward-looking model indicates that the required macroprudential level of capital is lower. The purple ribbons marked 60% and 90% denote the ranges in which 60% and 90% of indications from the individual variables taken into account when determining the MMCL fall, respectively. The broader the ribbons, the greater uncertainty related to the reading of the MMCL.

Notes (right panel, Figure 3): The figure shows the impact of individual variables on changes in the MMCL⁴ shown in Figure 2. The last, current reading made in 2024 Q2 is based on 2023 Q4 data.

Source: NBP.

Figure 3. Decomposition of changes in cyclical risk intensity (MMCL)



At present, there is no rationale for setting the CCyB over the nCCyB rate of 2% adopted in the Strategy on the application of the countercyclical capital buffer in Poland.⁵ Two rates implied from the model are taken into consideration to determine an adequate rate of the countercyclical capital buffer (CCyB, see Equation 1). One of them is the buffer's rate resulting from the current measurement of cyclical risk intensity, defined as $MMCL - MCR$. The rate is smoothed to reduce its volatility. To this end, the rule is applied according to which a change in the implied buffer rate

⁴ The list of indicators which make up each of the categories shown in the figure: (i) credit market – broad credit aggregate for the private non-financial sector, broad credit aggregate to GDP, narrow credit aggregate for the private non-financial sector, narrow credit aggregate to GDP, DSR for the private non-financial sector, broad credit aggregate for households, broad credit aggregate for non-financial corporations; (ii) real estate market – real estate prices to rental cost, real estate price index, real estate prices to income, value added of the real estate market to the sum of value added in a given year; (iii) base effect – value of the Tier 1 capital ratio to TREA in the last year; (iv) financial sector – value added of the financial market to the sum of value added; (v) global variables – VIX – Volatility Index of Chicago Board Options Exchange; (vi) macro variables – balance of current account to GDP, GDP, broad money aggregate, M3 money aggregate, the government debt to GDP, value added of the public sector to the sum of value added in a given year.

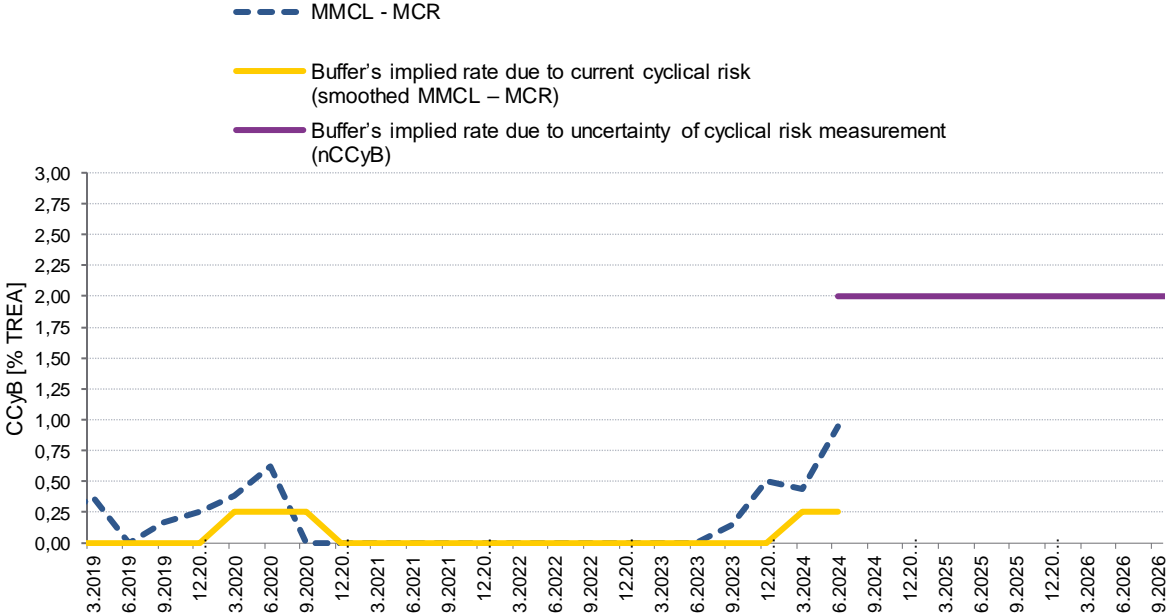
⁵ In accordance with Resolution No 72/2024 of the Financial Stability Committee of 22 March 2024 on the adoption of a strategy on the application of the countercyclical capital buffer, the Committee states that "(...) the desired neutral rate of the countercyclical buffer should amount to 2%." (see Financial Stability Committee (2024), Strategy on the application of the countercyclical capital buffer in Poland).

should be maintained for two consecutive quarters⁶ (see Figure 4). At present, the implied buffer rate amounts to 0.25%.

The other implied rate is a prudential buffer level resulting from uncertainty related to the measurement of cyclical risk and the readiness to absorb unexpected shocks, or the level of the nCCyB. In the *Strategy on the application of the countercyclical capital buffer in Poland*, the Financial Stability Committee considers the desired rate of the nCCyB to be 2%.

An adequate level of the buffer is the higher of the two implied rates. The Committee decided to reach the target rate of the nCCyB in two stages: at the first stage, by setting the buffer at the rate of 1%, and subsequently by raising it to 2%.

Figure 4. Adequate level of the CCyB



Notes: Data presented since 2019 when the capital conservation buffer became effective at the current level of 2.5%, which results in a constant-over-time level of the MCR.

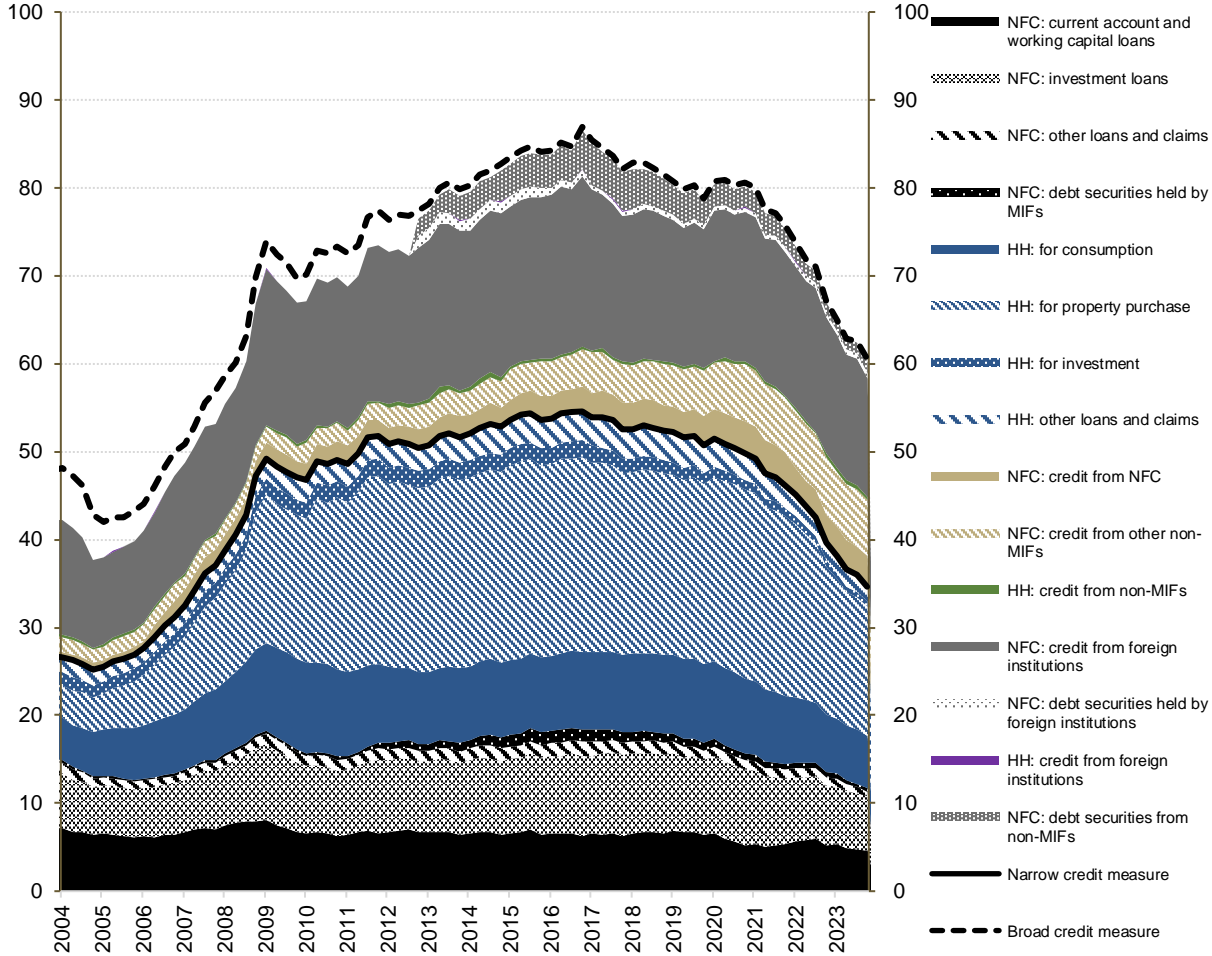
Source: NBP.

⁶ The application of the rule helps to formulate a directional expectation for the model’s indications concerning an adequate rate of the CCyB in the next quarter. An increase in the MMCL – MCR to 0.94 means that if this measurement of risk intensity is confirmed in the next quarter, then the implied buffer rate due to current cyclical risk may increase in 2024 Q3 (see golden line in Figure 4). Due to the smoothing rule adopted, a fall of the rate below the current level of 0.25% in the coming quarter is not possible.

3. Position in the credit cycle and the ESRB-recommended indicators

Early warning models are based on information flowing from many variables, therefore they help to make a complex assessment of cyclical risk intensity. However, an analysis of individual indicators allows to better illustrate the nature of changes in cyclical risk intensity. A review of selected indicators the monitoring of which is recommended by the European Systemic Risk Board (ESRB/2014/1) is presented below.

Figure 5. Breakdown of the ratio of credit to the private non-financial sector to GDP (%)



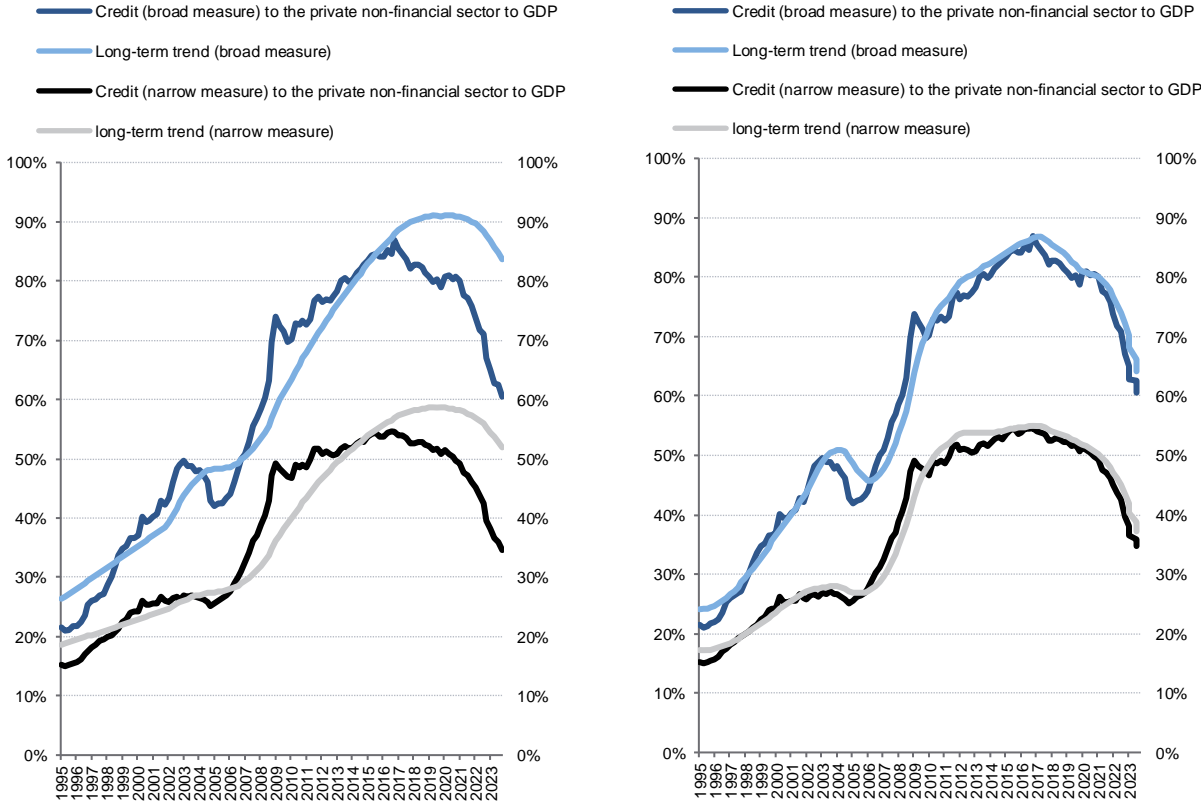
Abbreviations: NFCs stands for non-financial corporations, HH stands for households and MFIs stands for monetary financial institutions.

Notes: Last observation for 2023 Q4. The ratio of credit to the private non-financial sector to GDP includes debt of non-financial corporations and households due to loans and borrowings and debt securities. The ratio calculated on the basis of the narrow credit measure includes debt towards banks and cooperative savings and credit unions, and additionally – on the basis of the broad credit measure – debt towards other domestic non-monetary entities and foreign entities. The area chart runs in some parts below the black dashed line of the credit (broad measure) to GDP ratio, because in these periods – due to missing data – debt due to debt securities was not divided into debt towards banks and cooperative savings and credit unions and debt towards other domestic non-monetary entities. In these periods, the empty area presents, collectively, the debt of NFCs due to debt securities. The data that enable a detailed breakdown have been available since 2012 Q4.

Source: NBP.

In 2023 Q4, the ratio of credit to the private non-financial sector to GDP (broad credit aggregate) amounted to 60.6%.⁷ This represents a 6.5 p.p. decrease year-on-year. On the other hand, the level of private non-financial sector debt towards domestic monetary financial institutions (i.e. banks and cooperative savings and credit unions, or narrow credit aggregate) amounted to 34.7% of GDP, which represents a 4.9 p.p. decline year-on-year. In nominal terms, the broad credit aggregate in 2023 Q4 increased by 0.3% from the previous quarter. By contrast, in the corresponding period, the narrow credit aggregate dropped by 2.7%. According to forecasts⁸, the credit-to-GDP ratio will remain in the downward trend that has been observed since 2017 (see Figure 5). This points to the low intensity of cyclical risk related to excess credit growth.

Figure 6. Standardised credit gap (left panel) and credit gap compliant with the length of the financial cycle in Poland (right panel)



Notes: Last observation for 2023 Q4. Credit gap estimations were obtained using the one-sided recurrent Hodrick-Prescott (HP) filter which ensures that to calculate a trend only information available in every moment in time is used. This approach is compliant with Recommendation (ESRB/2014/1).

Sources: NBP and Statistics Poland.

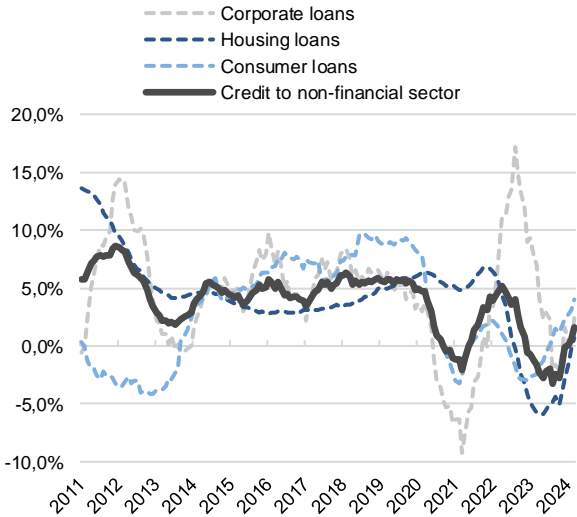
⁷ The ratio of credit to the private non-financial sector to GDP includes debt of non-financial corporations and households due to loans and borrowings and debt securities. The ratio calculated based on the narrow credit measure includes debt towards banks and cooperative savings and credit unions, and additionally – on the basis of the broad credit measure – debt towards other domestic non-monetary entities (among others, enterprises, financial intermediaries) and foreign entities.

⁸ In line with the forecast in [Narodowy Bank Polski \(2023\), Financial System in Poland 2022](#), the narrow credit-to-GDP measure is expected to fall below 30% by the end of the forecast horizon, i.e. by the end of 2025.

The credit gap is a standard indicator used for cyclical risk analysis. The standardised credit gap⁹ was -22.1% (see Figure 6). The credit gap computed based on the narrow credit measure amounts to -17.2%. The value of the credit gap, after taking into account the length of the financial cycle in Poland, was estimated at -3.6% for the broad credit measure and -2.6% for the narrow credit measure.¹⁰ A negative credit gap supports the conclusion about a low intensity of excess credit growth-related risk.

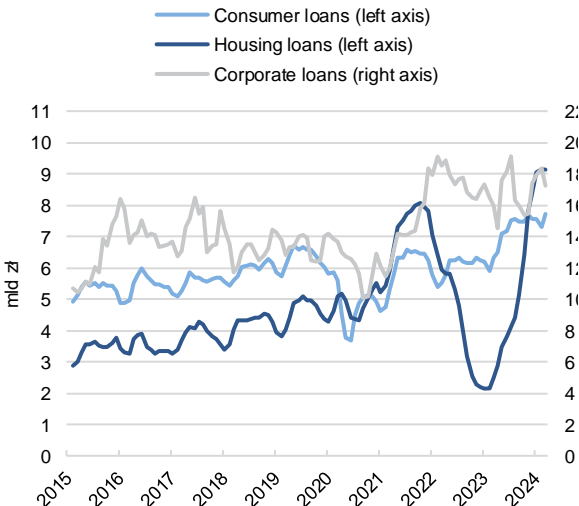
In 2024 Q1, the growth rate of all main types of credit was positive. The overall growth in credit to the non-financial sector amounted to 1.6% year-on-year towards the end of 2024 Q1 (see Figure 7). The production of new housing loans has recovered after the decline caused by the interest rate increases. The average monthly value of new housing loans exceeded PLN 9 billion in 2024 Q1 (see Figure 8).

Figure 7. Growth in selected categories of credit to the non-financial sector, y/y



Notes: Last observation for March 2023.
Source (both figures): NBP.

Figure 8. Value of new loans (3-month moving average)



Notes: Under new corporate loan statistics, current loans are not included.

The variables whose monitoring is recommended by the European Systemic Risk Board (ESRB/2014/1, Recommendation C, paragraph 2) are shown in Table 1. The levels of the variables compiled in Table 1, observed in 2023 Q4, do not indicate that there is a need to change the level of the countercyclical buffer over the level defined by the nCCyB.

⁹ The standardised credit gap is a deviation in the value of credit to the private non-financial sector to GDP ratio from the long-run trend. In compliance with Recommendation (ESRB/2014/1), the long-run trend was specified using a recursive HP filter with the smoothing parameter $\lambda=400.000$, which corresponds to fluctuations lasting 20 years and more.

¹⁰ In this approach, the long-run trend was determined using a recursive HP filter with a parameter λ corresponding to fluctuations lasting 10.5 years (see Lenart, Ł. and Pipień, M. (2015) and Pipień, M., Wdowiński, P. and Kaszowska, J. (2018)).

Table 1. Summary of selected indicators monitored for the purposes of making decisions on the level of the CCyB

Indicator	2023 Q3	2023 Q4
Credit to private non-financial sector to GDP (broad credit aggregate)	62.5%	60.6%
Credit to private non-financial sector to GDP (narrow credit aggregate)	35.9%	34.7%
Standardised credit gap (broad credit measure)	-22.3%	-23.1%
Standardised credit gap (narrow credit measure)	-16.9%	-17.2%
Credit gap taking into account the characteristics of the financial cycle in Poland (broad credit measure)	-3.7%	-3.6%
Credit gap taking into account the characteristics of the financial cycle in Poland (narrow credit measure)	-2.9%	-2.6%
Dwelling prices to income (index; average for 2015 = 100)	96.2	98.3
Hedonic housing price index* (2006 Q3 = 100)	256.0	265.4
Current account balance as % of GDP	+2.8%	+1.8%
Debt Service Ratio	7.0%	6.9%
Contribution of the financial sector to GDP	5.3%	5.1%
Growth of the real broad credit measure (y/y)	-7.4%	-5.6%
Growth of the real narrow credit measure (y/y)	-11.1%	-8.4%
VIX (Volatility Index) – measure of the implied volatility of options for the S&P 500 index	15.0	15.3

Notes: * (Harmonised) Hedonic House Price Index – price index per sq metre of a secondary market apartment with 2006 Q3 basis = 100 for 7 cities (including Warsaw). It reflects a change in prices purged of qualitative changes (e.g. an increase/decrease in the share of higher quality (more expensive) apartments).

Source: NBP, Bank for International Settlements, Statistics Poland, Eurostat and Thomson Reuters.

4. Summary

Early warning models point to a successive increase in cyclical systemic risk. The magnitude of the increase in the intensity of cyclical risk implies the level of the buffer at 0.25%. This gives no grounds for raising the level of the countercyclical buffer over the adopted level of the nCCyB (at the target rate of 2%, with a transitional stage at the rate of 1%).

Lending is recovering, however its pace remains relatively low. The analysis of a number of additional indicators supports the conclusion about the lack of rationale for raising the level of the buffer over the rate defined by the nCCyB.

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