NARODOWY BANK POLSKI

Ministerstwo Finansów

KNF KOMISJA NADZORU FINANSOWEGO

BFG Bankowy Fundusz Gwarancyjny

The level of the countercyclical capital buffer rate in Poland

A study prepared for a meeting of the Financial Stability Committee

Warsaw, March 2024

Executive summary

This study is a compilation of information for the purposes of assessing the intensity of cyclical systemic risk and deciding about the level and adequacy of the countercyclical capital buffer (CCyB) rate recommended by the Financial Stability Committee (FSC).

The factors analysed in the text do not provide grounds for setting the CCyB at a rate higher than 0%, i.e.:

- The intensity of cyclical risk measured using early warning models has risen slightly. The rise is not such as to justify an increase in the countercyclical buffer.
- The rising cyclical risk assessed on the basis of early warning models is accompanied by no signs of excess credit growth as credit growth itself remains low.

This study presents information on the intensity of cyclical systemic risk, including indicators recommended by the European Systemic Risk Board (ESRB) for determining the level of the countercyclical capital buffer. The study is divided into three sections. **Section 1** deals with an assessment of macroeconomic developments and strains within Poland's financial system. **Section 2** presents the progression of credit gap values and of other variables that illustrate lending in Poland, the monitoring of which is recommended by the ESRB. **Section 3** shows the results of early warning models.

1. Macrofinancial developments and current financial system stress

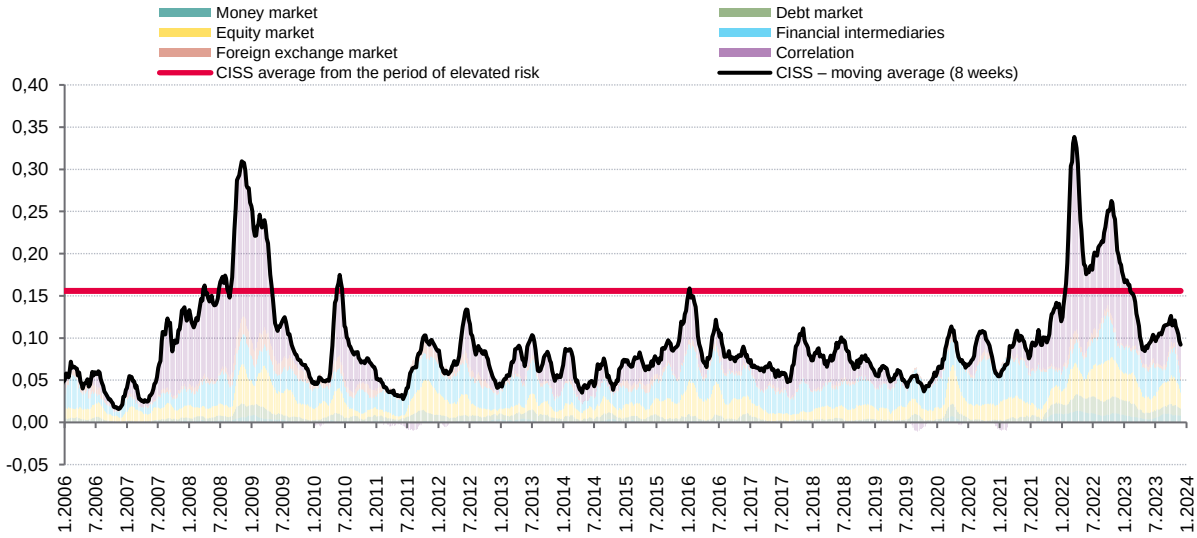
The economic situation in the world remains weakened. At the same time, uncertainty persists about the economic activity outlook in the major economies. This uncertainty is accompanied by a further decline in inflation globally, with annual price growth in most countries remaining elevated. Amid global economic slowdown, Poland is also dealing with a period of slower economic growth. Despite this, the situation on the labour market remains strong and unemployment is low.

Lending is beginning to recover. In 2023 Q4, the annual growth rate of loans to the non-financial sector reached -0.1% year-on-year. The rate remains negative, but its decline is slowing down. If the current trends continue, then 2024 Q1 will see a positive annual growth rate of loans to the non-financial sector. Towards the end of 2023, the growth rate of corporate and consumers loas was positive. The growth rate of housing loans is still negative; however the rate of the decline is markedly slowing. Although the recovery of the growth rate of lending has been observed, the credit to GDP ratio remains low and is likely to decrease. However, there are no signs of a reduced supply of credit whose low growth seems to primarily result from the demand factors.

Since March 2023, the Composite Indicator of Systemic Stress (CISS)[1] has been below the average level from the period identified by the ESRB as a period of elevated risk (see Figure 1). Therefore, the CISS is presently not elevated, which would imply contraindications to creating a buffer and at the same time warrant its release due to a crisis. **To sum up, current stress in the financial system is not a contraindication to creating a buffer.**

[1] The ESRB recommends 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.

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).

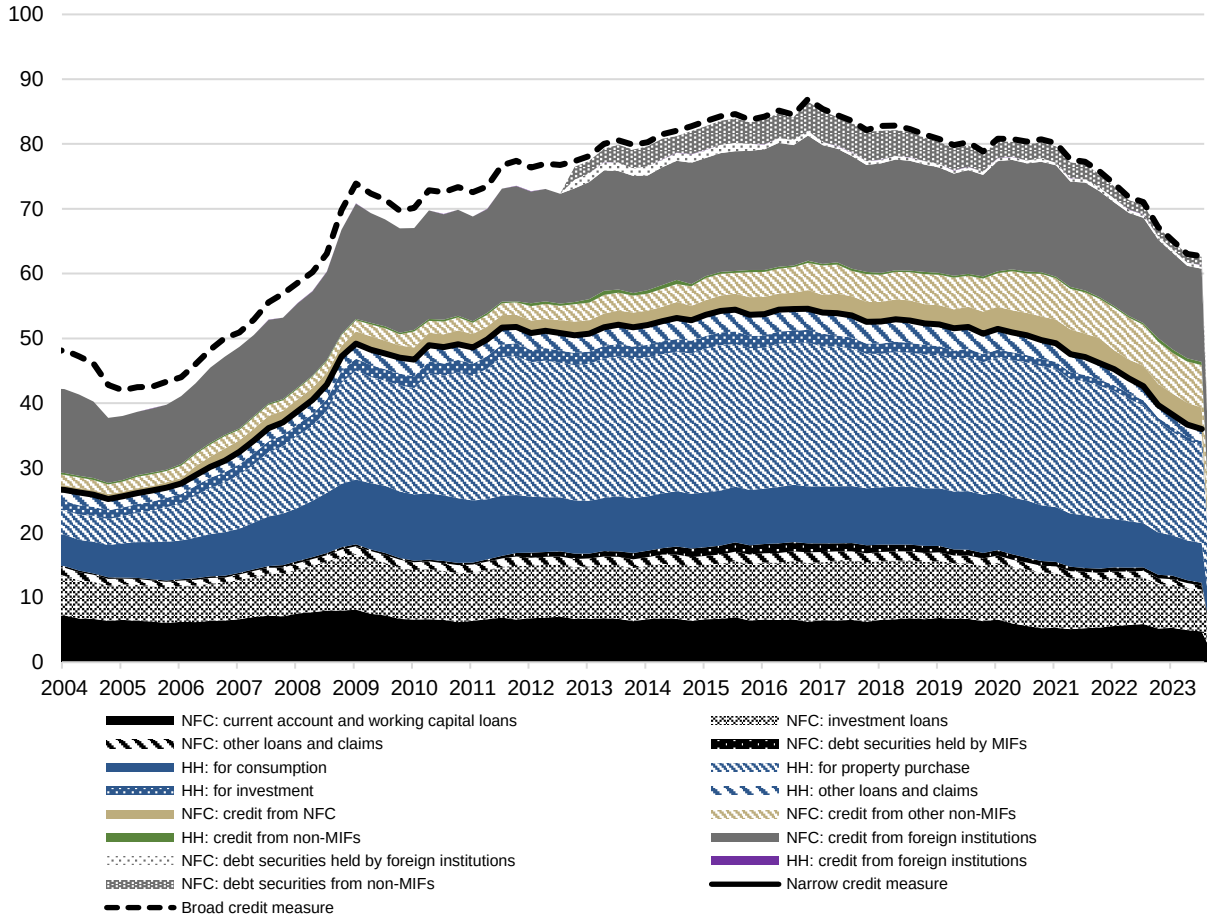
Data for the period running from 26 January 2006 to 26 January 2024.

Source: Own calculations based on Bloomberg and NBP data.

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

In 2023 Q3, the ratio of credit to the private non-financial sector to GDP (broad credit aggregate) amounted to 62.7%.[2] This represents its 8.3 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) was **36.0%** of GDP, which represents a 6.6 p.p. decline year-on-year. In nominal terms, in 2023 Q3 a broad credit aggregate increased by 1.6% from the previous quarter. On the other hand, in the corresponding period a narrow credit aggregate increased by 0.3%. It can be said that a reversal of the downward trend of, the narrow credit aggregate and the broad credit aggregate (in nominal terms) has begun. At the same time, due to the high nominal GDP growth, the credit to GDP ratio is expected to remain in the downward trend observed since 2017 (see Figure 2). This points to the low intensity of excess credit growth-related risk.

Figure 2. Breakdown of the ratio of credit to the private non-financial sector to GDP (%)



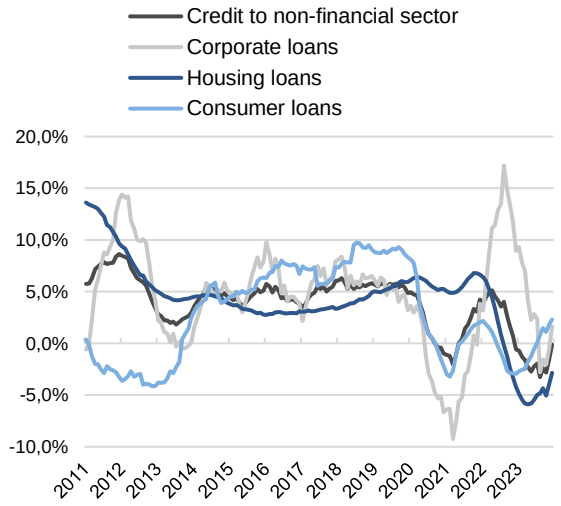
Notes: Last observation for 2023 Q3. The ratio of credit to the private non-financial sector to GDP includes debt of non-financial corporations and households due to loans and borrowings and debt securities. The ratio calculated on the basis of the narrow credit measure includes debt towards banks and 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

[2] 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.

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. Abbreviations: NFCs stands for non-financial corporations, HH stands for households and MFIs stands for monetary financial institutions.
Source: Own calculations based on NBP data.

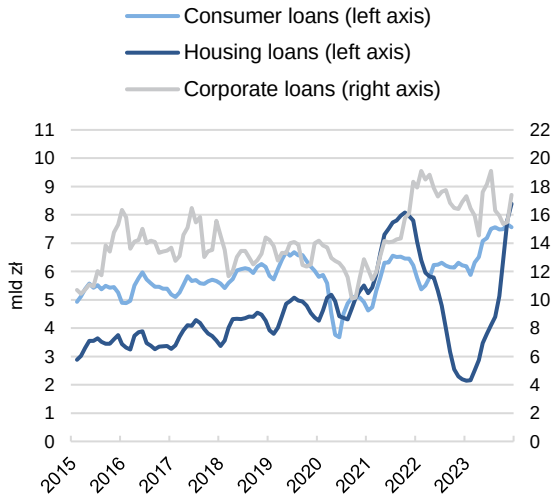
In 2023 Q4, housing loan growth was negative, while corporate loan growth and consumer loan growth were positive. The overall growth in credit to the non-financial sector amounted to -0.1% year-on-year towards the end of 2023 Q4 (see Figure 3 and FigureFigure **4**). If the current trends continue, 2024 Q1 will bring a rise in credit to the non-financial sector year-on-year.

Figure 3. Growth in selected categories of credit to the non-financial sector, y/y



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

Figure 4. Value of new loans (3-month moving average**)**

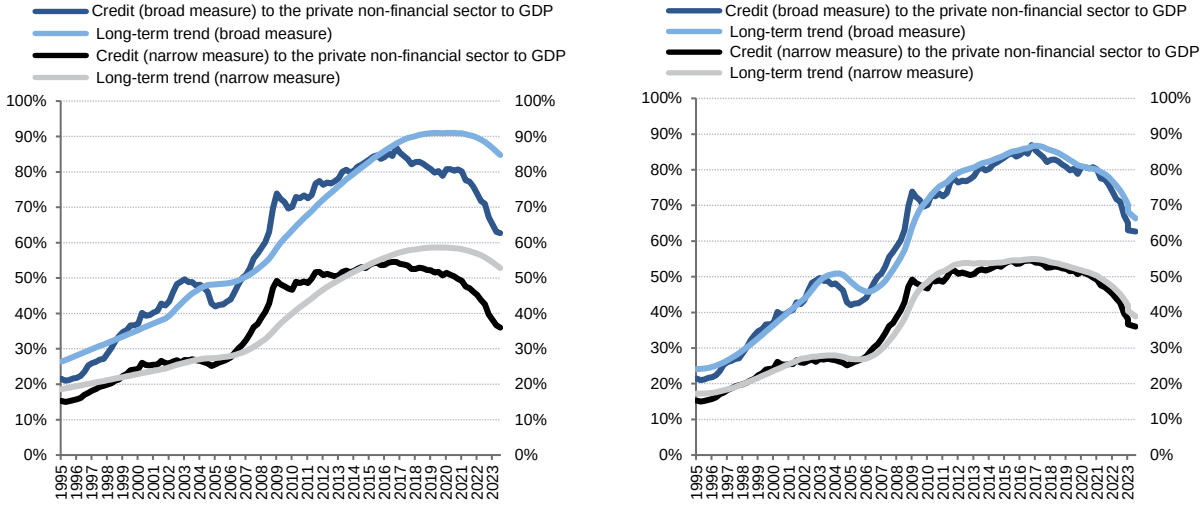


Notes: Under new corporate loan statistics, current loans are not included.

The credit gap is one of standard indicators taken into account during the cyclical risk analysis. The standardised credit gap[3] amounted to -22.1% (see Figure 5). The credit gap computed based on the narrow credit measure amounts to -16.8%. The value of the credit gap, after taking into consideration the length of the financial cycle in Poland, was estimated at -3.7% for the broad credit measure and -2.9% for the narrow credit measure.[4] A negative credit gap supports the conclusion about a low intensity of excess credit growth-related risk. The standardised credit gap is used for determining a benchmark for the countercyclical buffer. In accordance with the adopted methodology[5], for a standardised credit gap below 2%, the benchmark for the countercyclical buffer amounts to 0%.

[3] 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 λ=400.000, which corresponds to fluctuations lasting 20 years and more.
[4] 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)).
[5] See Part II of the Annex to Recommendation of the European Systemic Risk Board (ESRB/2014/1).

Figure 5. 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 Q3. 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).
Source: Own calculations based on NBP and Statistics Poland data.

The credit gap is one of many variables that have to be considered when the decision to create a CCyB is made. Many countries also apply a modified approach by using a broader set of information. 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 Q3, do not indicate that there is a need to change the level of the CCyB.

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

Indicator	2023 Q2	2023 Q3
Credit to private non-financial sector to GDP (broad credit aggregate)	63.0%	62.7%
Credit to private non-financial sector to GDP (narrow credit aggregate)	36.7%	36.0%
Standardised credit gap (broad credit measure)	-22.7%	-22.1%
Standardised credit gap (narrow credit measure)	-17.0%	-16.8%
Credit gap taking into account the characteristics of the financial cycle in Poland (broad credit measure)	-5.4%	-5.2%
Credit gap taking into account the characteristics of the financial cycle in Poland (narrow credit measure)	-3.8%	-2.9%
Dwelling prices to income (index; average for 2010 = 100)	75.1	76.0
Hedonic housing price index* (2006 Q3 = 100)	243.4	256.0
Current account balance as % of GDP	+0.5%	+2.8%
Debt Service Ratio	7.0%	7.1%
Contribution of the financial sector to GDP	5.4%	5.4%
Growth of a real broad credit measure (y/y)	-8.5%	-12.7%
Growth of a real narrow credit measure (y/y)	-7.1%	-11.1%
VIX (Volatility Index) – a measure of the implied volatility of options for the S&P 500 index	16.4	15.0

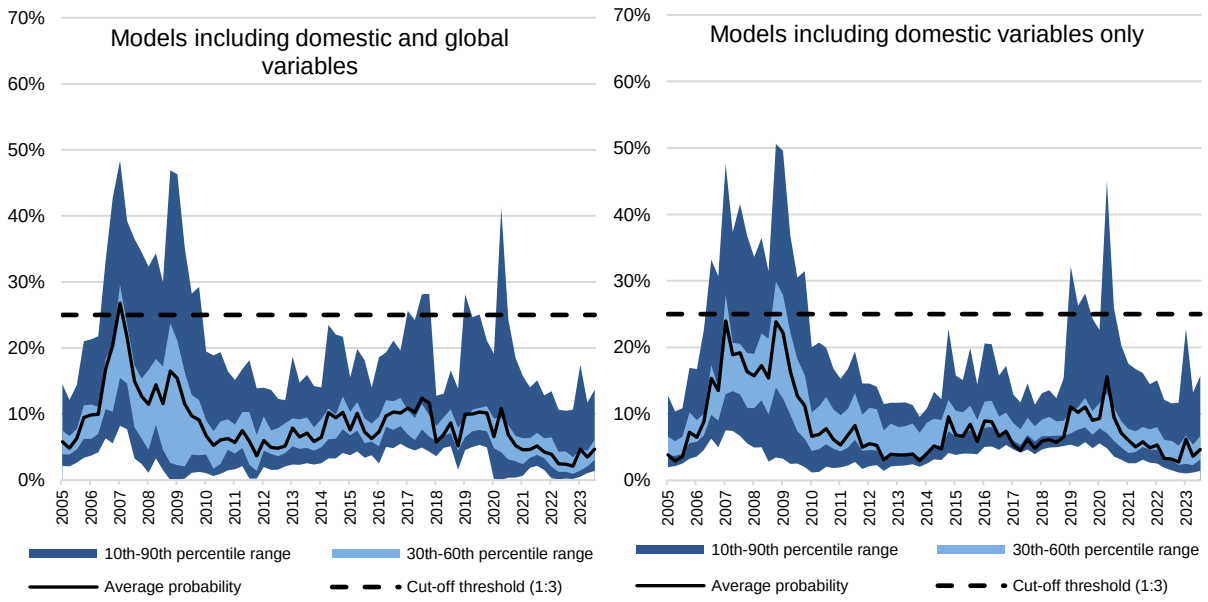
Notes: * Harmonised) Hedonic House Price Index – price index per sq metre of a secondary market apartment with 2006 Q3 basis = 100 for 7 cities (including Warsaw). It reflects a change in prices purged of qualitative changes (e.g. an increase/decrease in the share of higher quality (more expensive) apartments).
Source: Own calculations based on data from NBP, BIS, Statistics Poland, Eurostat, and Thomson Reuters.

3. Early warning models

Indicators based on several variables are also informative for assessing excess credit growth and the risk of a financial crisis. Therefore, the ESRB also recommends pooling various variables and the credit gap. A logit model[6], is a commonly used solution, where the variable explained is a binary variable denoting banking crises, and the explaining variables are macroeconomic and financial indicators. The advantage of this class of models consists in the possibility of using information coming from many variables and in estimating the likelihood of a crisis on the basis of them.

Early warning models including domestic and global (i.e. with the VIX variable) factors as well as early warning models based only on domestic factors (i.e. without the VIX variable) are shown in Figure 6. The models exhibit the highest predictive values in the group of around 50 countries in the years 1970–2016.[7]

Figure 6. Results of early warning models for Poland



Notes: Last observation for 2023 Q3. The figures show the average (weighted by signal quality) value of probability obtained on the basis of 206 models including domestic and global variables (left panel) and 148 models including only domestic variables (right panel) and the cut-off threshold, which when exceeded, signals the risk of a banking crisis (it has been assumed, following the ESRB studies, that the cost of an absence of a signal warning against a real crisis is three times higher than the cost of a wrong signal about a crisis if no crisis occurs). The blue ribbons denote the range of values of probability (not weighted by signal quality) for all models, excluding those models which show the lowest and highest probability of a banking crisis in Poland in every period. The average value of probability (a black line) weighted by the quality of signals of the models sometimes runs below the

[6] Potential forward-looking indicators have been analysed on data from 47 countries in the years 1970-2016. Individual variables have been analysed, taking into account the levels, dynamics, and cyclical deviations from the trend. The assessment of the variables had been made over a horizon from 18 quarters to 6 quarters prior to the crises. The study of Babecký, J., Havránek, T., Matějů, J., Rusnák, M., Šmídková, K., & Vašíček, B. (2013), *Leading indicators of crisis incidence: Evidence from developed countries*, Journal of International Money and Finance, 35, 1-19., which is the result of work under the *ESCB Heads of Research*, has been used for crisis dating purposes.

[7] The best models, with the highest weight in the average shown in Figure 5, correctly classify all pre-crisis and non-pre-crisis situations in over 90% of the cases for an international sample. Using the credit gap alone enables accurate classification only in around 65% of the cases and using the best single variable – in around 75% of the cases.

line of the 30th percentile of probabilities and above the line of the 60th percentile of probabilities, because better models have indicated a lower probability and a higher probability of a crisis in these periods, respectively.
Source: Own calculations based on NBP, BIS, Eurostat, and OECD data.

In 2023 Q3, the readings of early warning models increased from the previous quarter. It means that we are dealing with a further increase in the intensity of cyclical risk measured using early warning models. The lowest reading was in H1 2022 and risk intensity has increased slightly albeit steadily. The magnitude of the increase is so small that it gives no grounds for raising the level of the countercyclical buffer.

4. Summary

Early warning models point to a slight increase in cyclical systemic risk. The magnitude of the increase in the intensity of cyclical risk is so small that it gives no grounds for raising the level of the countercyclical buffer. The analysis of a number indicators, including the characteristics of lending whose growth rate remains relatively low, even less does it indicate that raising the level of the buffer is warranted. Therefore, the adequate level of the CCyB is 0%.