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Macroprudential Diagnostics

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Introductory remarks

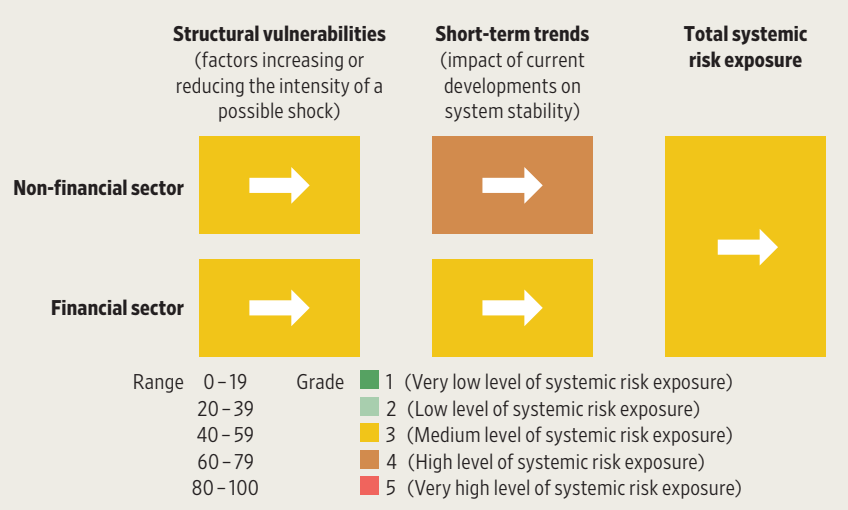
The macroprudential diagnostic process consists of assessing any macroeconomic and financial relations and developments that might result in the disruption of financial stability. In the process, individual signals indicating an increased level of risk are detected, according to calibrations using statistical methods, regulatory standards or expert estimates. They are then synthesised in a risk map indicating the level and dynamics of vulnerability, thus facilitating the identification of systemic risk, which includes the definition of its nature (structural or cyclical), location (segment of the system in which it is developing) and source (for instance, identifying whether the risk reflects disruptions on the demand or on the supply side). With regard to such diagnostics, instruments are optimised and the intensity of measures is calibrated in order to address the risks as efficiently as possible, reduce regulatory risk, including that of inaction bias, and minimise potential negative spillovers to other sectors as well as unexpected cross-border effects. What is more, market participants are thus informed of identified vulnerabilities and risks that might materialise and jeopardise financial stability.

1 Identification of systemic risks

The exposure of the financial system to systemic risks remained moderate in mid-2025 (Figure 1). After a slowdown in economic growth in the first quarter of 2025, high-frequency indicators for the second quarter point to its acceleration. At the same time, elevated uncertainty surrounding the unpredictability of the policies of the US administration and growing geopolitical tensions have remained the main source of risk to economic growth and financial stability. Non-financial corporations are particularly vulnerable to risks arising from a potential weakening of demand or sharp rise in costs. In the household sector, the slowdown in income growth should mitigate the growth in demand and lending and the resulting risks, while lower interest rates and tax reliefs might stimulate demand for residential real estate and the credit financing of residential real estate purchases. Banks' resilience is supported not only by the still high profitability and low NPL levels but also by sound capital and liquidity positions. With the aim of preventing risk accumulation and strengthening the financial resilience of households and banks, Croatia has introduced

macroprudential measures limiting consumer lending criteria, applicable as of 1 July.

Figure 1 Risks to financial stability have remained moderate



Note: Arrows indicate changes from the risk score in May 2025 (Financial Stability No 26).
Source: CNB.

Expectations about global economic developments have been deteriorating amid heightened geopolitical uncertainty. The unpredictable actions by the US administration and the intensification of military conflicts are a further spur to uncertainty, creating an unstable environment for global economic activity. This has primarily affected global trade, a slowdown in which would weigh on global growth and amplify risks to financial stability.

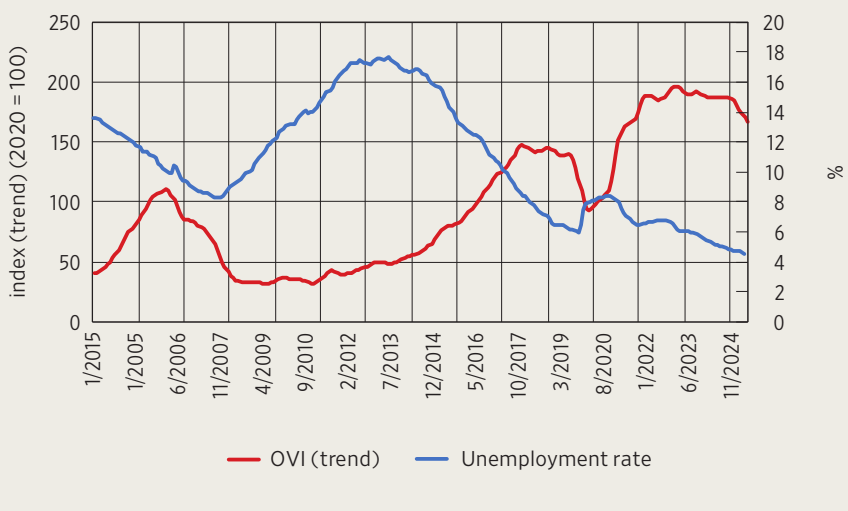
High-frequency indicators for the second quarter of 2025 point to a strong economic growth in Croatia, with continued robust domestic demand. Strong wage growth and a low unemployment rate (Figure 2) point to a good income basis for the repayment of liabilities of households, while personal consumption has continued to contribute to economic activity, despite a somewhat reduced intensity of its growth. In addition, the positive contribution from investments should also continue, with a stable inflow of EU funds. The expected increase in military expenditures at EU level will act as a stimulus for some activities, but with the risk of an increase in the inflation rate.

The fiscal position is sensitive to cyclical economic developments. Despite a considerable decline in public debt-to-GDP ratio in recent years, Croatia's fiscal position is susceptible to macroeconomic developments, which might suddenly deteriorate in times of growing global trade tensions and geopolitical conflicts. In the light of growing security threats, calls for a significant increase in defence spending by NATO member countries to 5% of GDP, instead of the current 2% (Figure 3), in order to ensure long-term

strategic preparedness and collective defence[1], could further push up the indebtedness of NATO member countries.

The non-financial corporate sector is characterised by good business performance, but remains highly susceptible to macroeconomic developments. Although the growth in the revenues of non-financial corporations was lower than in 2023, it was almost the same in 2024 as the growth in total costs (around 5%), which led to a stagnation in the net profit margin of the sector. In addition, the equity-to-assets ratio increased from 38% to almost 40% in 2024, making the sector less vulnerable to changes in financing conditions. Although some activities might benefit from the increase in defence spending, the intensification of trade and military conflicts might lead to a further increase in costs for enterprises and a simultaneous slowdown in activity.

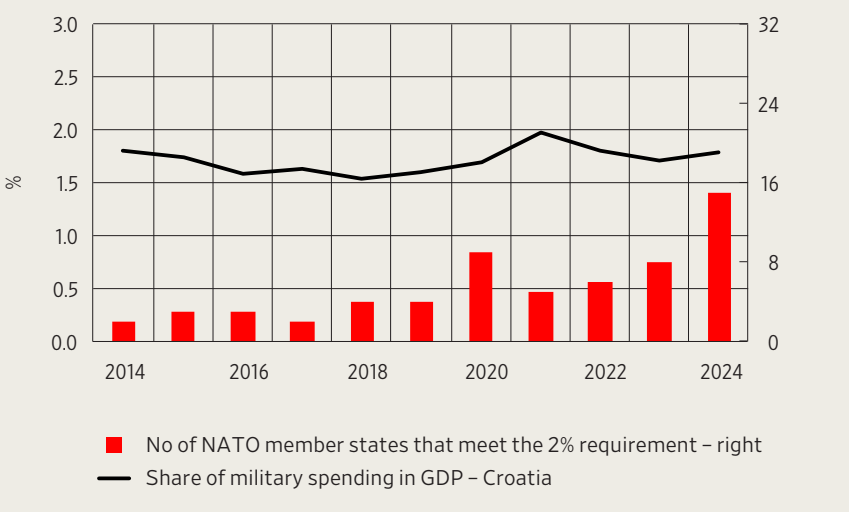
Figure 2 Despite a slight weakening in labour demand, the low unemployment rate points to a stable income basis for the repayment of liabilities of households



Notes: The Online Vacancy Index (OVI) is a monthly index of online job advertisements. It is developed by means of simple enumeration of single new job advertisements whose application deadlines end within the same month for which the index is being calculated.
Sources: Institute of Economics, Zagreb (based on data obtained from MojPosao website) and CBS.

1 https://www.nato.int/cps/en/natohq/topics_49198.htm

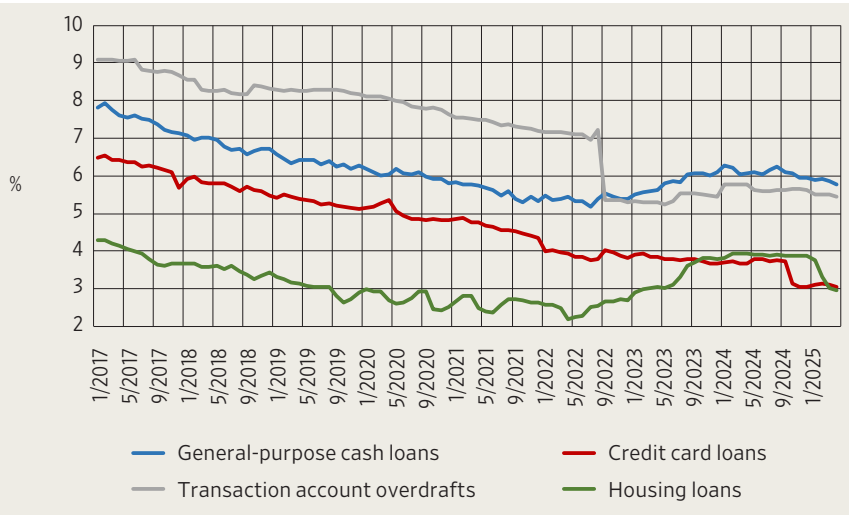
Figure 3 Public debt growth might accelerate further as defence spending increases



Source: Stockholm International Peace Research Institute (SIPRI).

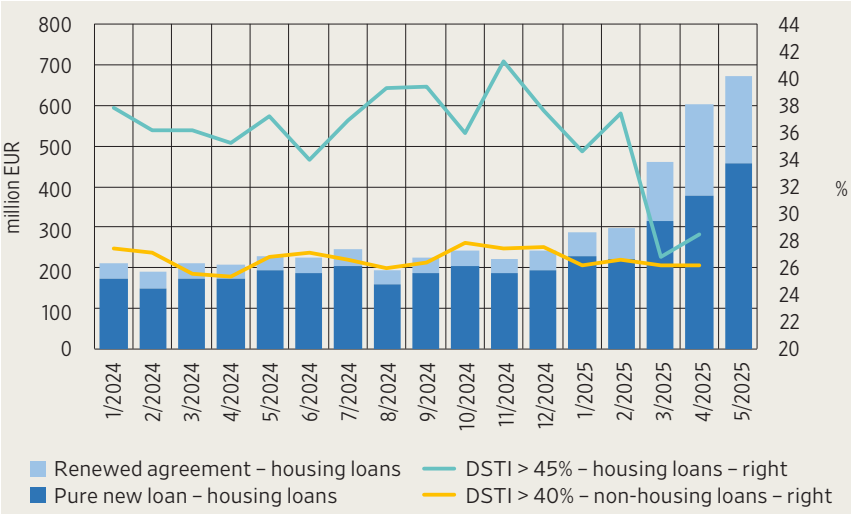
Lending to households continued to grow strongly at the beginning of 2025. Housing loans continued to accelerate, increasing by slightly more than 10% in May 2025 (Figure 5), while continuing to be granted with relatively high DSTI ratios, despite reduced interest rates (Figure 4). Although the average DSTI ratio has decreased since March 2025, as has the share of new housing loans granted with the DSTI above 45%, it was almost 30%. At the same time, there was a significant increase in the amount of renewed agreements for existing housing loans, which were mainly refinanced due to lower interest rates, but also for other reasons (e.g. changes in maturity, etc.). Non-housing loans continued to grow at high rates (14.9% in May) under the influence of a further increase in the number of new loans. The share of new debtors with the DSTI above 40% held steady and stood at just over 25% in April.

Figure 4 Interest rate on pure new loans went down



Source: CNB.

Figure 5 Amounts of new loans to households and refinancing of existing loans increased



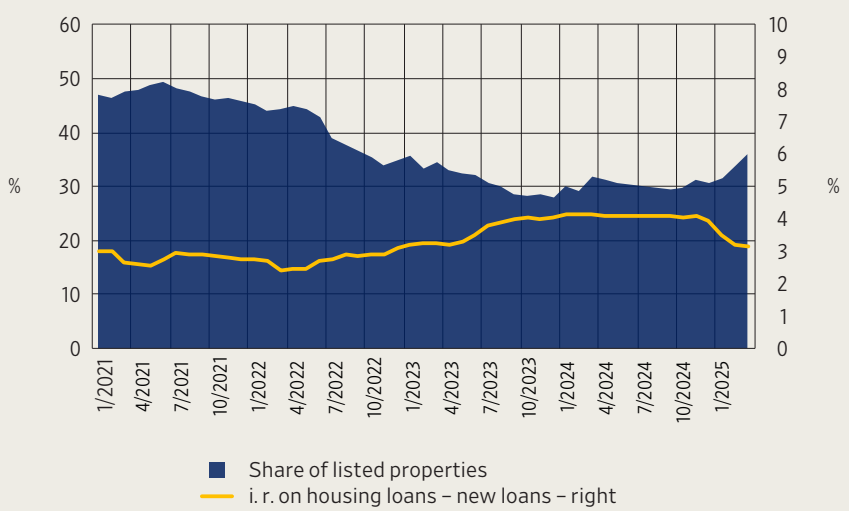
Source: CNB.

As income continued to grow, the lowering of interest rates on housing loans in early 2025 spurred the growth of housing demand. Housing prices continued to rise strongly in the first quarter of 2025, by 13.1% on an annual level and by 4.5% from the quarter before. The share of listed properties that can be financed by a housing loan (Figure 6) fell steadily in the post-pandemic period due to the strong growth in asking prices and interest rates, and stabilised only in early 2024 on the back of a strong wage growth. However, the recent fall in interest rates, coupled with the still high rate of income growth, has stimulated demand in the residential real estate market, supported as it has been by tax reliefs offered to young first-time buyers. In addition, in the second half of the year, the demand for residential real estate, that is, a smaller part of purchases financed by loans, will also be affected by macroprudential measures limiting consumer lending criteria, which might slightly cushion demand pressures. In addition, tax on unused properties might encourage owners to use their property, which would increase market supply and so alleviate upward price pressures. The same effect will come from the continued strong growth in construction activity, driven by robust domestic demand and increased optimism.

High capitalisation and liquidity underpin the resilience of banks, but they are still exposed to risks due to elevated uncertainty in the geopolitical landscape. Credit institutions continued to make high profits in the first quarter of this year and their profitability indicators remained at elevated levels in the historical context (Figure 7). Interest income from non-financial sectors and non-interest income increased, while interest income from funds deposited with the central bank decreased. Banks' loan portfolio quality remained high in a period of accelerated economic and credit growth and the overall NPL level remained stable relative to the end of 2024. Although the share of NPLs in total loans edged up due to the decrease in funds deposited with the central bank, which are included in the definition

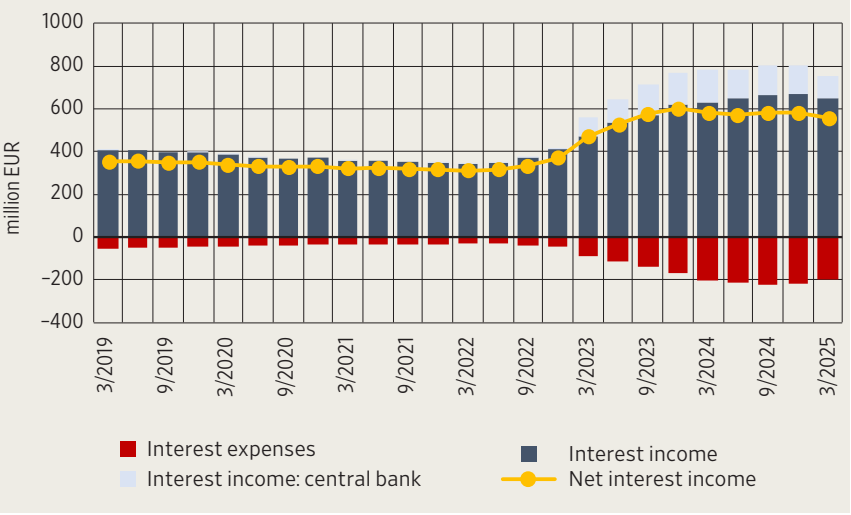
of a placement, the share of NPLs in loans to corporates and households decreased. However, high geopolitical uncertainty exposes banks to potential build-up of interest rate, credit and liquidity risks. For instance, sudden interest rate hikes amid reduced liquidity would be a significant shock for banks, along with a fall in the value of bonds in their portfolios. At the same time, due to the standard duration gap, there would also be a fall in the economic value of banks' equity (see Box 1).

Figure 6 The share of listed properties with asking price that can be financed by a bank loan



Note: The figure shows the share of listed properties whose asking price can be financed through a housing loan under standard conditions (with average interest rate and repayment period of 22 years, with monthly instalments not exceeding 45% of income of a household with two average salaries).
Sources: CNB and www.njuskalo.hr.

Figure 7 The banking system is highly capitalised and liquid, with high profitability



Note: Data refer to flows at the level of each quarter.
Source: CNB.

Box 1 When the interest rate path is reversed – what follows after profit growth?

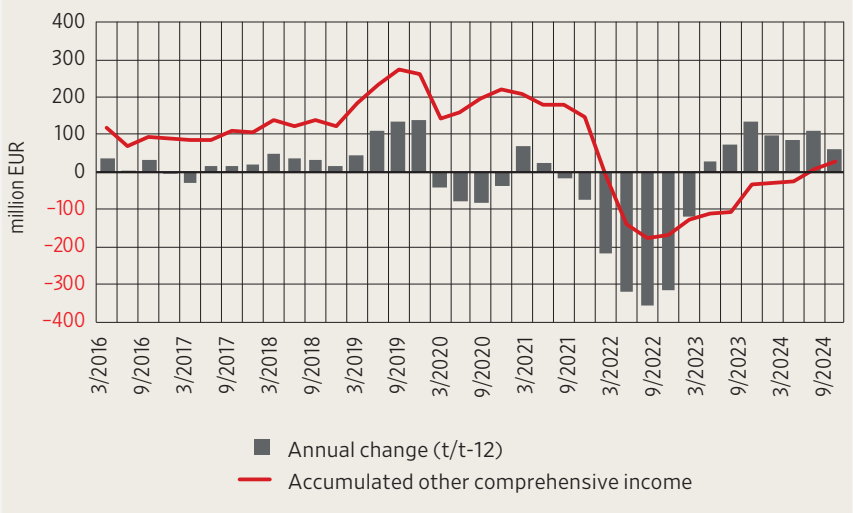
The transformation of short-term deposits into long-term placements is one of the key functions of banks and an important source of both earnings and risk. Banks play a central role in the economy by connecting savers with surplus funds and borrowers who use these funds to finance their needs. Most often, they keep deposits and other short-term funding sources on the liability side, while granting placements with relatively long maturities, often of several decades. Such financing of long-term placements from short-term funding sources is called the maturity transformation of deposits and is one of the most important sources of bank earnings. However, the difference in maturity and the types of interest rates applied by banks to assets and liabilities exposes them to interest rate risk. To be more precise, interest rates on short-term funding sources can change rapidly, while interest rates on long-term loans are often fixed or variable only over longer periods. This means that banks can make a profit on this difference, but are at the same time exposed to potential losses in case of sudden and unexpected changes in interest rates.

The sharp post-pandemic rise in interest rates significantly boosted bank profitability, while the gradual decrease in interest rates over the past two years has brought about a slight fall in profits. However, the link between interest rates and bank profitability is not always clear or predetermined. The sharp rise in market interest rates from end-2022 to 2024 significantly boosted the profitability of most European banks, including Croatian banks, which reached record levels (see 1 Identification of systemic risks, Figure 7). The profitability of domestic banks largely reflects the specific circumstances in which interest rates grew, primarily high amounts of short-term assets, mostly in the form of reserves with the central bank, which enabled banks to generate income that reacted quickly to changes in interest rates. At the same time, lending rates on new loans and on the part of existing loans with variable interest rates also increased. On the other hand, bank funding costs grew at a much slower pace, owing to still low interest rates on deposits and abundant liquidity in the system. The ability of banks to maintain stable funding through deposits at relatively low interest rates is referred to as the deposit franchise[2]. It is a kind of "natural" hedge against interest rate risk and is an important source of

2 The term "deposit franchise", as defined by Drechsler, Savov and Schnabl (2021), is the ability of banks to finance themselves by deposits at interest rates below market rates, which protects them from interest rate risk and supports long-term profitability. In such a case, the maturity transformation is not necessarily risky, as the cost of deposits does not increase in proportion to market interest rates, which acts as natural hedge for banks providing long-term loans at fixed rates. See: Drechsler, I., Savov, A., & Schnabl, P. (2021). Banking on deposits: Maturity transformation without interest rate risk. Journal of Finance, 76(3), 1091–1143.

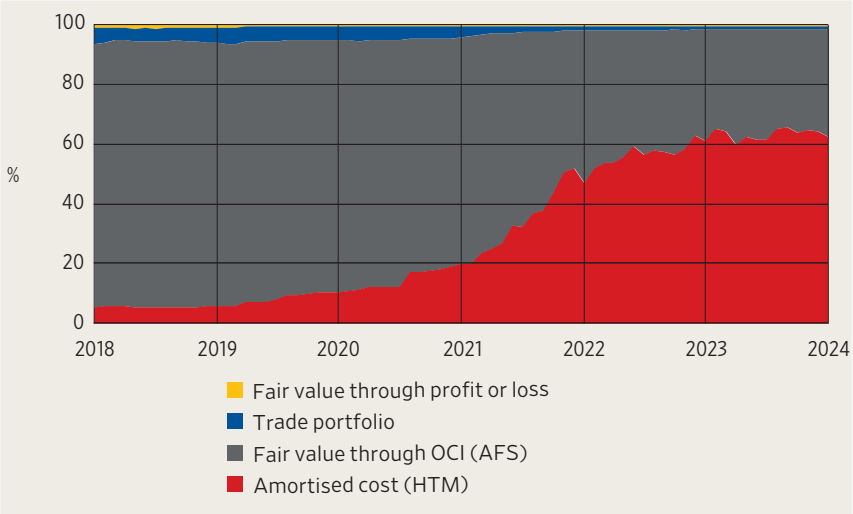
bank profitability over the long term. As interest rate hikes boosted bank profitability, the gradual decrease in interest rates from mid-2024 began to have a negative impact on business performance.

Figure 1 Losses due to rising market interest rates are partly recorded in other comprehensive income



Source: CNB.

Figure 2 Following the rise in market interest rates, banks redirected debt securities to HTM portfolio



Source: CNB.

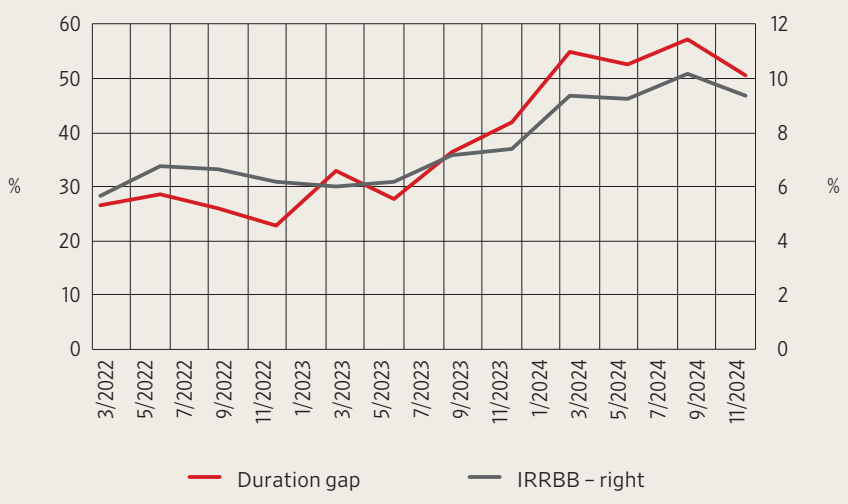
Interest rate hikes have also had a negative impact on other comprehensive income and banks' equity. Apart from their short-term effect on profitability, changes in interest rates also have a significant impact on banks' balance sheets, especially on the value of debt instruments in their portfolios. The increase in interest rates lowers the market price of fixed income debt securities, which is detrimental to other comprehensive income (Figure 1). This impact relates to unrealised gains and losses that are reported directly in bank equity, although they are not part of net profit. Securities classified as available for sale (AFS) are valued at market prices, while securities held to maturity (HTM) are

recorded at amortised cost, with the result that changes in their value are not immediately reflected in equity or profit. However, the low yield on these securities "locked" in a part of the portfolio can weigh on profitability over a longer period of time. In the period of ultra-low interest rates, banks gradually transferred debt securities from the portfolio of AFS instruments to the portfolio of HTM securities, so that at the time of the increase in interest rates, about half of the instruments were classified into the HTM portfolio (Figure 2). This mitigated fluctuations in equity, which would only be reflected in the result in the case of a need for the sale of these instruments. More recently, the decline in interest rates partly mitigated the adverse valuation effect on the value of fixed debt instruments (Figure 1), although long-term market interest rates did not fully follow the decline in short-term rates.

Figure 3 IRRBB hit record highs in 2024

Source: CNB.

Figure 4 Duration gap contributed to the rise in IRRBB



Notes: Data include behavioural assumptions and information on derivative positions of banks, which makes it possible to measure persistent mismatches between assets and liabilities by taking into account hedging mechanisms, thereby ensuring more accurate estimates of exposure to interest rate risk. IRRBB (interest rate risk in the banking book) is a credit risk indicator that measures how much the economic equity of a bank changes relative to own funds in the event of a change in market interest rates.
Source: CNB.

Banks are increasingly exposed to the adverse impact of interest rate risk on the economic value of equity. In addition to the short-term impact on profit and equity, changes in interest rates also have a long-term impact on cash flows, that is, on the ability to generate future profits. In order to measure and manage this risk better, banks and regulators estimate the overall impact of interest rate changes on the present value of future cash flows associated with assets, liabilities and off-balance sheet items. The mentioned risk, known as the interest rate risk in the banking book (IRRBB), is measured using the concept of the economic value of equity[3] (EVE). The objective is to assess the change in the present value of equity in the case of several defined interest rate shocks[4], including a standard parallel shock along the entire yield curve of two percentage points. The IRRBB was relatively stable from 2014 to mid-2021, with slight oscillations and values generally below 5% of banks' own funds. However, the indicator has been growing since the second half of 2021, first gradually, then much faster from 2022, only to reach its historical high in 2024, exceeding 10% of own funds in September (Figure 3), thus approaching to the regulatory limit of 15%.

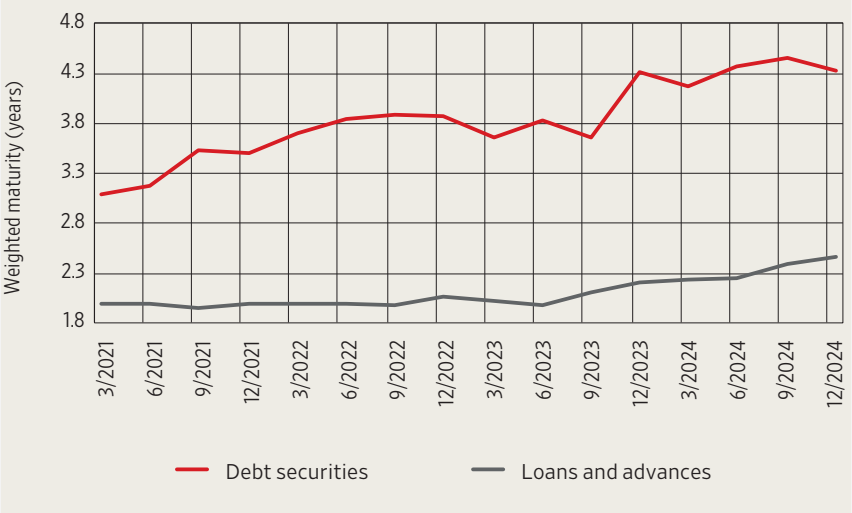
The increase in interest rate risk in banks' balance sheets reflects the extension of maturity of assets, as a result of granting loans with increasingly long maturities and investing in long-term debt instruments. In the recent period, banks have been offering relatively long loan repayment periods, while debtors, in the conditions of a strong rise in real estate prices and rising interest rates, have been taking out housing loans with increasingly long maturities, which has mitigated the effect of the growth in monthly annuities triggered by the increase in interest rates (Figure 5). Also, banks have been increasingly investing in long-term securities in order to lock in yields amid the expected decrease in interest rates. In addition, the deterioration in the country's external balance and the outflow of funds abroad led to a decrease in short-term bank reserves with the central bank. All these changes in the structure of banks' balance sheets resulted in an increase in the average maturity of assets and reduced the sensitivity of income to interest rate changes. On the other hand, the maturity of deposits did not change significantly, which pushed up the so-

3 The economic value of equity (EVE) is defined as the market value of assets less the market value of liabilities, and is a measure of the long-term sensitivity of the present value of balance sheet to interest rate shocks. The analysis is based on discounting future cash flows using a risk-free or swap curve, segmented by currency and maturity.

4 Standard shocks include: parallel curve shift (upwards and downwards), curve slope shift (steepener/flattener) and shocks that act selectively on the short end of the yield curve (upwards and downwards).

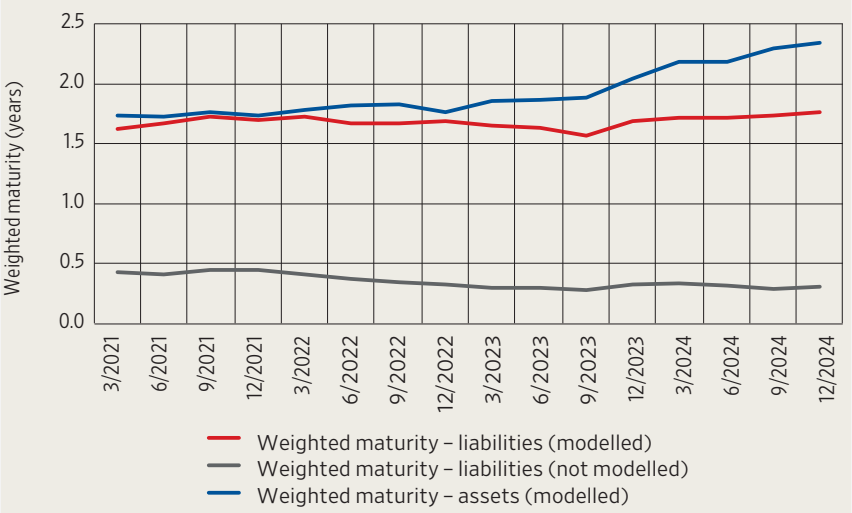
called duration gap[5], that is, the difference in the average maturity of assets and liabilities (Figure 4). With the rise in interest rates, some funds spilled

Figure 5 The increase in weighted maturity is visible within the basic asset components



Source: CNB.

Figure 6 Weighted maturity of interest rate-sensitive assets has grown faster than that of interest rate-sensitive liabilities



Note: Data include behavioural assumptions and information on derivative positions of banks, which makes it possible to measure persistent mismatches between assets and liabilities by taking into account hedging mechanisms, thereby ensuring more accurate estimates of exposure to interest rate risk.
Source: CNB.

5 "Duration gap" means the difference in time of interest rate change between cash inflows (assets) and outflows (liabilities) in the balance sheet and off-balance sheet. Our calculation was made by applying the following formula

$$DurationGap = \sum_{j=1}^{19} \frac{DUR_j}{1+i} \left(\frac{A_{j-L_j}}{Z} \right)$$

Cash flows were classified into 19 time segments (j) according to the remaining maturity or schedule of interest rate changes. Net cash flows are calculated as the difference between the cash flows of balance-sheet and off-balance-sheet assets and cash flows of balance-sheet and off-balance-sheet liabilities $A_j - L_j$. Net flows have been scaled to total assets (Z) in order to be comparable across banks. Each net cash flow has been weighted by a modified duration $\frac{DUR_j}{1+i}$ where DURj denotes the average duration of each time segment expressed in years and "i" denotes the six-month EURIBOR.

over from overnight accounts to time and savings deposits, but this did not affect the average maturity of deposits (Figure 6), as deposits mostly have short maturities. However, such deposits are more sensitive to interest rate changes than overnight deposits, which are regarded by banks, based on behavioural parameter modelling, to be long-term funding sources with a low and stable cost that is not very sensitive to interest rate changes, meaning that clients rarely withdraw them abruptly or in large amounts. However, this also poses a significant risk, as it can lead to considerable underestimation of the actual sensitivity of the balance sheet to interest rate shocks.

Looking ahead, banks will need to closely monitor changes in the structure of their balance sheets and client behaviour and assess interest rate risk in order to manage it successfully. Although the rise in interest rates in recent years has boosted profitability, it has also pushed down the value of debt securities and adversely affected equity through other comprehensive income. The decline in interest rates from mid-2024 poses new challenges: interest rates on assets fall faster than those on liabilities, which has narrowed the net interest spread and threatened the viability of profitability so far, especially amid the weakening of deposit franchise and lower yields on liquid surpluses. The increased volatility of market conditions, coupled with geopolitical and fiscal uncertainties, further underlines the importance of interest rate risk management, which today is not only a regulatory requirement, but a key element in resilience, business model sustainability and the stability of the entire banking system.

2 Potential risk materialisation triggers

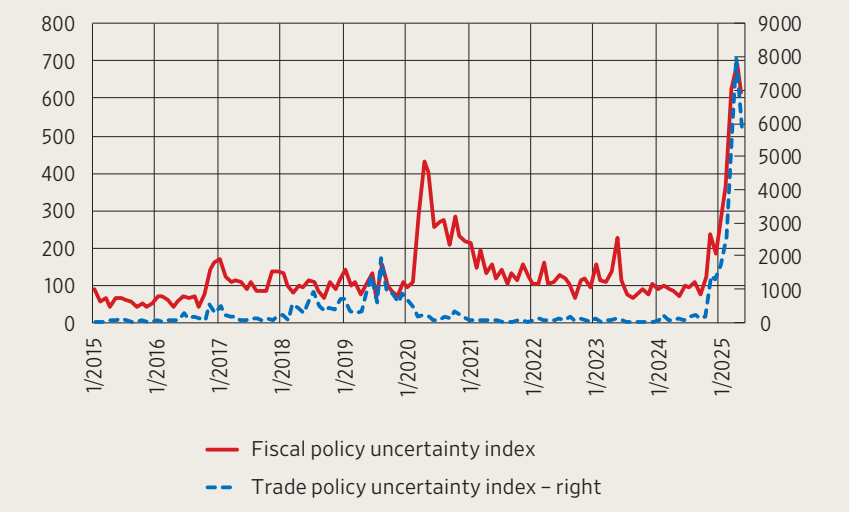
A new escalation of trade barriers between globally important countries is one of the main potential triggers for systemic risk materialisation (Figure 1). The further tightening of global trade relations due to potential new US measures or retaliatory measures imposed by other affected major economies, might increase the risk of falling investor confidence and increasing market volatility, which would primarily hit open and indebted economies. Against the backdrop of the already elevated geopolitical tensions, a sudden deterioration of trade relations can thus become an immediate trigger for the transmission of shocks to the financial system.

In addition to the war in Ukraine, geopolitical tensions in the Middle East have increased threats to financial stability. Military conflicts are a significant source of risk to financial stability due to the potential impact on global economic flows and risk perception in markets. Also, elevated uncertainty due to the possible intensification of conflicts can lead to an increase in risk premia, heightened volatility and deteriorating financing conditions in financial markets.

These geopolitical risks might have an adverse impact on borrowing costs and fiscal positions. The strengthening of trade barriers and military conflicts can trigger inflationary pressures that might lead to a tightening of monetary policies of the leading central banks and push up interest rates and borrowing costs. In such a scenario, the fiscal room needed for the expected growth in defence spending, as well as for a timely and effective reaction to future economic or financial shocks, would be narrowed.

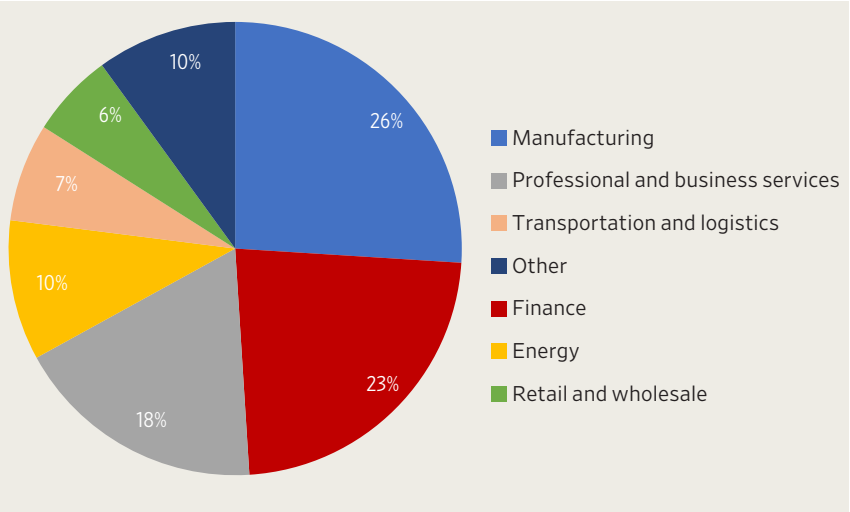
Cyberattacks and climate change are pervasive risks that increasingly threaten global security and their consequences can seriously jeopardise the stability and functioning of the financial system. The financial sector ranked second among all industries in terms of the number of cyberattacks in 2024, and was a target in around 23% of all attacks worldwide (Figure 2), which is an increase from the 18% of 2023. Cyberattacks, which intensify in times of political and economic instability, can trigger chain disruptions due to a high level of digital interdependence, including disruptions in financial services and loss of market confidence. At the same time, climate-related risks have become a growing threat to financial stability. Physical risks increasingly affect the financial position of households through changes in real estate insurance conditions and their market value. Consequently, this risk might spill over to bank operations due to a decline in the value of mortgage coverage or a possible decrease in business activity. Transition risks, although on a declining path in Croatia, continue to erode the value of fossil fuel-related assets.

Figure 8 Abrupt disruptions in trade relations and fiscal risks are among key drivers of risk to financial stability



Note: The risk indices reflect the results of an automated text-search of seven newspapers (100 = 1% of newspaper articles contains a reference to trade and fiscal uncertainty).
Source: www.policyuncertainty.com.

Figure 9 The share of cyberattacks by world industries in 2024



Source: Statista.

3 Recent macroprudential activities

Strong bank lending activity and a protracted rise in residential real estate prices have supported the continued expansion of the financial cycle, while cyclical vulnerabilities remain elevated. The new limits on consumer lending criteria should mitigate the risks associated with excessive household borrowing. It has been assessed that the countercyclical capital buffer rate of 1.5% remains adequate for preserving banking system resilience to the possible materialisation of cyclical systemic risks or sudden shocks. Nevertheless, a further deterioration of cyclical vulnerabilities might call for an additional tightening of macroprudential policy measures. This year's analysis of exposures of the domestic banking sector to third countries again identified Bosnia and Herzegovina and Montenegro as systemically important countries; however, the cyclical risks arising from these exposures do not require additional CNB regulatory measures. Results of the annual review of exposures of the Croatian banking sector to member states whose national macroprudential measures were recommended for reciprocation by the ESRB showed that this year again there is no need for the CNB to reciprocate these measures.

3.1 Limits on consumer lending criteria

The CNB has imposed limits on consumer lending criteria in order to mitigate risks to financial stability, whereby it limits excessive consumer borrowing and excessive risk-taking by banks. Applying to all new housing and non-housing consumer loans as of 1 July 2025, the Decision on consumer lending criteria imposes caps on the monthly debt-service-to income (DSTI) ratio, the loan-to-value (LTV) ratio and the loan maturity. The DSTI ratio for housing loans is capped at 45% and for non-housing loans at 40%, whereas the LTV for loans with a pledge of immovable property is capped at 90%. There are also exemptions: credit institutions will still be allowed to quarterly grant up to 20% of the amount of housing loans and up to 10% of the amount of non-housing loans to consumers above DSTI caps, as well as 20% of the amount of loans above LTV caps, based on their own assessment. The exceptions in granting housing loans will largely (three quarters of total exemptions) be allowed for consumers applying for a loan to address their housing needs. The maturity of housing loans and loans collateralised by immovable property is limited to thirty years, while the maturity of other non-housing loans is limited to ten years.

3.2 The countercyclical capital buffer rate to remain at 1.5%

Notwithstanding the continued expansion of the financial cycle and elevated cyclical vulnerabilities, the countercyclical capital buffer rate is to remain at 1.5%, effective from the end of June 2024. The continued growth of household loans, at an annual rate of 12.7% in April 2025, reflects a surge in general-purpose cash loans and housing loans, with loans to non-financial corporations also growing steadily (the annual growth rate reached 11.9% in April). The elevated level of cyclical risks is also supported by the ongoing rise in housing market prices, which was among the highest in the EU member states in the first quarter of 2025. The level of the countercyclical capital buffer rate is currently assessed as adequate for preserving banking system resilience to possible materialisation of cyclical risks or shocks unrelated to the evolution of the financial cycle, particularly bearing in mind the implementation of new macroprudential restrictions on consumer lending criteria that should slow down consumer lending. Any further deterioration of cyclical vulnerabilities in a favourable macrofinancial environment might call for an additional increase in the prescribed rate of this buffer or taking other, complementary measures.

3.3 Annual analysis of third-country materiality for the banking system of the Republic of Croatia

Bosnia and Herzegovina and Montenegro remain material third countries for the banking system of the Republic of Croatia. This is confirmed by the results of the regular annual analysis of exposures of the domestic banking sector to third countries, carried out by the CNB in the second quarter of 2025. Material third countries have been identified based on three metrics: original exposure, defaulted exposure and risk-weighted exposure, as laid down by the European Systemic Risk Board. The exposure of the domestic banking sector to these countries on a consolidated basis refers mainly to the exposure of three domestic other systemically important institutions through their subsidiaries.

In addition to identifying Bosnia and Herzegovina and Montenegro as material third countries, systemic risks of a cyclical nature were also analysed in these countries. The analysis showed signs of accumulation of cyclical systemic risks in both countries, mostly due to continued strong growth in bank lending to the private non-financial sector and the rise in real estate market prices. This was also recognised in a timely manner by regulators in these countries, and they have already taken several macroprudential measures to cover these risks. The CNB will continue its

regular monitoring of the evolution of the cyclical systemic risks in both these countries.

3.4 Review of exposure of domestic credit institutions to member states whose macroprudential measures were recommended for reciprocation by the ESRB

Results of the annual review showed that there is no need for the CNB to subsequently reciprocate macroprudential measures of other EU member states. In June 2025, the CNB conducted a regular annual review of the exposure of the Croatian banking sector to countries whose national macroprudential measures were recommended for reciprocation by the ESRB; applying the principle of exemption (materiality threshold), the CNB did not recognise these measures in its decisions. The results of the review showed that exposures to these countries (Sweden, Luxembourg, Norway, Belgium, Lithuania, the Netherlands, Portugal, Denmark and Italy) remain well below the recommended materiality thresholds and that there is no need for subsequent recognition of any of the recommended measures this year.

3.5 Implementation of macroprudential policy in other European Economic Area countries

To preserve financial system resilience amid heightened global uncertainty, most EEA countries maintained the previously introduced macroprudential measures in the second quarter of 2025, while a few of them introduced certain adjustments. The positive countercyclical capital buffer rate continued to be applied in 25 out of 30 EEA countries. More than a half of EEA countries follow a positive neutral CCyB rate approach to build this buffer.

As of 1 July, **Austria** is to introduce a measure to cover risks related to the commercial real estate market. The sectoral systemic risk buffer of 1% will apply to banks' exposures to non-financial corporations from selected sectors in Austria, covering construction and real estate activities. In addition to existing borrower-based measures that target risks related to the residential property market, the new sectoral systemic risk buffer contributes to mitigating risks in the commercial real estate market.

Germany reduced the sectoral systemic risk buffer rate on all exposures to natural and legal persons secured by residential real estate in the country

from 2% to 1% as of 1 May. This measure was initially introduced in February 2023 (see Macroprudential Diagnostics No. 17) as a part of the package to alleviate housing market-related vulnerabilities. The rate recalibration was motivated by the decrease in systemic vulnerabilities in the residential real estate market linked to the fall in prices.

France announced that it would remove the sectoral systemic risk buffer requirement of 3% applied as of August 2023 to exposures of banks using the IRB approach with respect to large and heavily-indebted French non-financial corporations (see Macroprudential Diagnostics No. 20). The measure is to be repealed in response to the significant reduction of relevant exposures.

Amid persisting risks related to the real estate market, **Sweden** extended the existing national macroprudential measures to cover risks related to this market, as referred to in Article 458 of the Capital Requirements Regulation (CRR). The measures apply to all credit institutions using the IRB approach and entail a minimum average risk weight for bank exposures to non-financial corporations secured by real estate in the amount of 35% and 25% for commercial and residential real estate in Sweden, respectively, and a risk weight floor of 25% applied to the portfolio of retail exposures to obligors residing in Sweden secured by real estate.

Table P.1 Overview of macroprudential measures in EEA member countries

	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IS	IT	LT	LU	LI	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Capital and liquidity buffers																														
CCoB	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CCyB rate applied (%)	0	1.0	2.0	1.0	1.25	0.75	2.5	1.5	0	0	1.0	0	1.5	0.5	1.5	2.5	0	1.0	0.5	0	0.5	0	2.0	2.5	0	0	1.0	2.0	0.5	1.5
CCyB rate pending (%)				1.5					0.5			0.25		1.0							1.0				1.0	0.75			1.0	
G-SII						●			●		●												●							
O-SII	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SRB	●		●		●		●			●			●	●		●							●	●			●	●		
Sectoral SRB	●	●				●	●										●	●		●		●				●			●	
Liquidity ratio														●										●	●			●		
Caps on prudential ratios																														
DSTI	●		●	●				●		●	●	●	●	●		●		●			●	●			●	●	●		●	●
DTI/LTI							●								●						●			●						●
LTD																													●	
LTV	●	●	●	●	●		●	●		●		●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●
Loan amortisation					●															●				●				●		●
Loan maturity	●		●		●			●		●	●		●					●			●	●	●		●	●	●		●	●
Other measures																														
Pillar II		●		●																									●	
Risk weights								●					●						●	●		●	●	●	●		●	●	●	
LGD																								●						
Stress/sensitivity test			●	●	●					●					●									●		●				
Other measures	●		●				●						●		●							●			●		●	●		●

Notes: The listed measures are in line with Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms (CRR) and Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (CRD V). The definitions of abbreviations are provided in the List of abbreviations at the end of the publication. Green indicates measures that have been added since the last version of the table.
Sources: ESRB, CNB and notifications from central banks and websites of central banks as at 30 May 2025.

Table P.2 Implementation of macroprudential policy and overview of macroprudential measures in Croatia

Measure	Primary objective	Year of adoption	Description	Basis for standard measures in Union law	Activation date	Frequency of revisions
Macroprudential measures implemented by the CNB prior to the adoption of CRD IV						
Prior to the adoption of CRD IV, the CNB used various macroprudential policy measures, of which the most significant ones are listed and described in: a) Galac, T., and E. Kraft (2011): http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-5772 b) Vujčić, B., and M. Dumičić (2016): https://www.bis.org/publ/bppdf/bispap86l.pdf						
Makrobonitetne mjere predviđene CRD-om IV i CRR-om koje provodi tijelo nadležno za provedbu makrobonitetne politike						
CCoB	Credit growth and leverage following Recommendation ESRB/2013/1	2014	Early introduction: at 2.5% level	CRD, Art. 160 (6)	1 Jan. 2014	Discretionary
		2015	Exemption of small and medium-sized investment firms from the capital.conservation buffer	CRD, Art. 129 (2)	17 Jul. 2015	Discretionary
CCyB	Credit growth and leverage following Recommendation ESRB/2013/1 and implementing Recommendation ESRB/2014/1	2015	CCyB rate set at 1.5% as of 30 June 2024	CRD, Art. 136	1 Jan. 2016	Quarterly
		2015	Exemption of small and medium-sized investment firms from the countercyclical capital buffer	CRD, Art. 130 (2)	17 Jul. 2015	Discretionary
O-SII	Limiting the systemic impact of misaligned incentives with a viewm to reducing moral hazard following Recommendation ESRB/2013/1	2015	Seven O-SIIs identified by review in late 2024, with corresponding O-SII buffer rates: 2.5% for Zagrebačka banka d.d., Zagreb, 2.0% for Privredna banka Zagreb d.d. and Erste&Steiermärkische Bank d.d., Rijeka, 1.5% for Raiffeisenbank Austria d.d., Zagreb and OTP banka Hrvatska d.d., Split, 1.0% for Hrvatska poštanska banka d.d., Zagreb, 0.25% for Addiko Bank d.d., Zagreb. "	CRD, Art. 131	1 Feb. 2016	Annually
SRB	"Credit growth and leverage following Recommendation ESRB/2013/1 "	2014	Two SRB rates (1.5% and 3%) applied to two sub-groups of banks (market share < 5%, market share ≥ 5%). Applied to all exposures	CRD, Art. 133	19 May 2014	Annually
		"2017 "	"The level of two SRB rates (1.5% and 3%) and the application to all exposures remain unchanged. Decision (OG 78/2017) changes the method for determining the two sub-groups to which the SRB is applied. Sub-groups are determined by calculating the indicator of the average three-year share of assets of a credit institution or a group of credit institutions in the total assets of the national financial sector (indicator < 5%, indicator ≥ 5%). The review conducted in 2019 determined that the rates for the two sub-groups remain unchanged. "	CRD, Art. 133	17 Aug. 2017	At least on a biennial basis
		2020	Under the Decision (OG 144/2020), a uniform buffer rate (SRB) was introduced in the amount of 1.5% of the total amount of exposure. All credit institutions having their head office in the RC have been required to maintain a uniform systemic risk buffer rate since the end of 2020.	CRD V, Art. 133	29 Dec. 2020	At least on a biennial basis
Risk weights for exposures secured by mortgages on residential property	Credit growth and leverage following Recommendation ESRB/2013/1	2014	Maintaining a stricter definition of residential property for preferential risk weighting (e.g. owner cannot have more than two residential properties, exclusion of holiday homes, need for occupation by owner or tenant)	CRR, Art. 124, 125	1 Jan. 2014	Discretionary
		2024	In accordance with amendments to the Capital Requirements Regulation (CRR3), the criteria for the application of the preferential risk weight for exposures secured by residential real estate have been adjusted. The more restrictive definition of residential real estate for the application of the preferential risk weight now assumes that the loan user does not own more than two real estate properties and that the real estate property used to secure the exposure is not a holiday home.	CRR, Art. 124, 125	1 Jan. 2025	Discretionary
Risk weights for exposures secured by mortgages on commercial property	Mitigating and preventing excessive maturity mismatch and market illiquidity pursuant to Recommendation ESRB/2013/1	2014	CNB's recommendation issued to banks (not legally binding) on avoiding the use of risk weights of 50% to exposures secured by CRE during low market liquidity	CRR, Art. 124, 126	1 Jan. 2014	Discretionary
		2016	Decision on higher risk weights for exposures secured by mortgages on commercial immovable property. RW set at 100% (substituted CNB's recommendation from 2014, i.e. effectively increased from 50%)	CRR, Art. 124, 126	1 Jul. 2016	Discretionary
		2024	With regard to amendments to the Capital Requirements Regulation (CRR3), the exercised national discretion in the form of the mandatory application of a higher risk weight (100%) to exposures secured by mortgages on commercial immovable property was repealed.	CRR, Art. 124, 126	1 Jan. 2025	Discretionary
Other measures and policy actions whose effects are of macroprudential importance and are implemented by the macroprudential authority						
Consumer protection and awareness	Raising risk awareness and creditworthiness of borrowers following Recommendation ESRB/2011/1	2013	Decision on the content of and the form in which consumers are provided information prior to contracting banking services (credit institutions are obliged to inform clients about details on interest rate changes and foreign currency risks)		1 Jan. 2013	Discretionary
		2013	Amended Decision from 1 Jan. 2013 (credit institutions were also obliged to provide information about the historical oscillations of the currency in which credit is denominated or indexed to vis-à-vis the domestic currency over the past 12 and 60 months)		1 Jul. 2013	Discretionary
Information list with the offer of loans to consumers aimed at consumer protection and awareness raising	Raising risk awareness of borrowers pursuant to Recommendation ESRB/2011/1 and encouraging price competitiveness in the banking system	2017	The Information list with the offer of loans to consumers, available on the CNB's website, provides a systematic and searchable overview of the conditions under which banks grant loans. With the Information list, standard information available to the consumers are extended with information regarding interest rates.		14 Sep. 2017	Discretionary

Measure	Primary objective	Year of adoption	Description	Basis for standard measures in Union law	Activation date	Frequency of revisions
Consumer protection and awareness	Financial stability concerns regarding risk awareness of borrowers	2016	Borrowers are strongly recommended (publicly) by the CNB to carefully analyse the available information and documentation on the products and services offered prior to reaching their final decision, as is customary when concluding any other contract		1 Sep. 2016	Discretionary
Recommendation to mitigate interest rate and interest rate-induced credit risk	Mitigation of the interest rate risk in the household sector and the interest-induced credit risk in the banks' portfolios and enhancing the price competition in the banking system	2017	Credit institutions providing consumer credit services are recommended to extend their range of credit products to fixed-rate loans, while minimising consumer costs.		26 Sep. 2017	Discretionary
Additional criteria for assessing consumer creditworthiness in granting housing consumer loans	Credit risk management in housing consumer loans pursuant to EBA Guidelines on creditworthiness assessment (EBA/GL/2015/11) and EBA Guidelines on arrears and foreclosure (EBA/GL/2015/12)"	2017	Decision on the additional criteria for the assessment of consumer creditworthiness and on the procedure for the collection of arrears and voluntary foreclosure		1 Jan. 2018	Discretionary
Recommendation on actions in granting non-housing consumer loans	Financial stability concerns due to credit risk in banks' housing loan portfolios and protection of consumers excessive debt taking	2019	All credit institutions in Croatia granting consumer loans are recommended to apply, in determining a consumer's creditworthiness for all non-housing consumer loans with original maturity equal to or longer than 60 months, the minimum costs of living that may not be less than the amount prescribed by the act governing the part of salary exempted from foreclosure.		28 Feb. 2019	Discretionary
Decision on collecting data on standards on lending to consumers	Establishment of an analytical basis for the monitoring of systemic and credit risk and the calibration of borrower-based measures and for meeting the requirements from the ESRB recommendations on closing real estate data gaps (ESRB/2016/14 and ESRB/2019/3)	2020	A new reporting system is introduced which provides for a monthly collection of individual data on all newly-granted consumer loans at the individual loan level and the annual collection of data on all individual consumer loan balances. The collected data will be used for the analysis and the regular monitoring of systemic risk, the monitoring of credit risk, the calibration of macroprudential measures and, where necessary, the monitoring of actions by credit institutions against which measures have been imposed.		2 Apr. 2020	Discretionary
Decision on consumer lending criteria	Mitigation of excessive consumer borrowing, i.e. excessive risk-taking by banks, which could lead to loan repayment difficulties and create losses for banks, adversely affecting financial stability	2025	The Decision limits the ratio of monthly debt service to consumer income (debt-service-to income, DSTI) to a maximum of 45% for housing loans and 40% for non-housing loans; for loans secured by real estate, the ratio of the total loan amount to the value of the real estate serving as collateral (loan-to-value, LTV) may not exceed 90%. The maturity of housing and non-housing consumer loans secured by real estate is limited to thirty, while the maturity of other non-housing loans is limited to ten years. Based on its own assessment, a bank may quarterly grant up to 20% of housing loans and up to 10% of non-housing loans above DSTI caps, as well as 20% of consumer loans above LTV caps.		1 Jul. 2025	Discretionary
Other measures whose effects are of macroprudential use						
Amended Consumer Credit Act	Financial stability concerns due to interest rate risk and currency risk	2013	Fixed and variable parameters defined in interest rate setting, impact of exchange rate appreciation for housing loans limited, upper bound of appreciation set to 20%		1 Dec. 2013	Discretionary
Amended Consumer Credit Act	Financial stability concerns due to interest rate risk and currency risk	2014	Banks are obliged to inform their clients about exchange rate and interest rate risks in written form		1 Jan. 2014	Discretionary
Amended Consumer Credit Act	Financial stability concerns due to currency risk	2015	Freezing the CHF/HRK exchange rate at 6.39		1 Jan. 2015	Discretionary
Amended Consumer Credit Act	Financial stability concerns due to currency risk	2015	Conversion of CHF loans		1 Sep. 2015	Discretionary
Consumer Home Loan Act	Financial stability concerns due to interest rate risk and currency risk	2017	To establish the variable interest rate, the interest rate structure was defined through reference variable parameters and the fixed portion of the rate; for foreign currency consumer home loans, clients were offered one-off conversion of loans, from the currency a loan was denominated in or linked to, to the alternative currency without additional costs		20 Oct. 2017	Discretionary
Act on Amendments to the Credit Institutions Act	Compliance with the requirements for close cooperation with the ECB and the legal basis for imposing legally binding borrower-based measures	2020	Detailed provisions on the CNB's powers regarding the adoption and implementation of macroprudential measures that for the first time explicitly stipulate borrower-based measures. The ECB may issue instructions to the CNB if it assesses that a Croatian macroprudential measure, which is based on harmonised European rules and aimed at credit institutions, is not strict enough		15 Apr. 2020 (some provisions enter into force on 1 October 2020, with the beginning of close cooperation with the ECB)	Discretionary
Act on Amendments to the Credit Institutions Act	Compliance with CRD V	2020	Regulation of the provisions on capital buffers; increased maximum O-SII buffer rate; sectoral SRB; O-SII buffer and SRB additivity; changes to the notification system; determination of the CNB as the designated authority for the assessment of the adequacy of the risk weights referred to in Article 125(2) or Article 126(2) of Regulation (EU) No 575/2013		29 Dec. 2020	Discretionary

Measure	Primary objective	Year of adoption	Description	Basis for standard measures in Union law	Activation date	Frequency of revisions
Act on Amendments to the Credit Institutions Act	Text adjustment relating to the RC joining the euro area	2022	Harmonisation of the provisions of the Act relating to the RC joining the euro area and the related changes in the CNB's powers, full membership in the Single Supervisory Mechanism and the Single Resolution Mechanism.		1 Jan. 2023	Discretionary
Act on Amendments to the Credit Institutions Act	Harmonisation of legal provisions with the acquis communautaire	2024	The adjustment of the provisions of the Act relating to the implementation of directives governing the digital operational resilience of the financial sector, crypto-asset markets, the provision of crypto-asset services, and requirements relating to credit risk, credit valuation adjustment risk, operational risk, market risk and the output floor. Adjustment of provisions due to the RC joining the OECD. Finally, for the purpose of enhancing the financial literacy of Croatia's citizens, a requirement is introduced for credit institutions to set aside a portion of their operating income each year to finance activities aimed at strengthening financial literacy.		21 Dec. 2024	Discretionary

Notes: The definitions of abbreviations are provided in the List of abbreviations at the end of the publication. Green indicates measures that have been added since the last version of the table.
Source: CNB.

Glossary

Financial stability is characterised by the smooth and efficient functioning of the entire financial system with regard to the financial resource allocation process, risk assessment and management, payments execution, resilience of the financial system to sudden shocks and its contribution to sustainable long-term economic growth.

Systemic risk is defined as the risk of events that might, through various channels, disrupt the provision of financial services or result in a surge in their prices, as well as jeopardise the smooth functioning of a larger part of the financial system, thus negatively affecting real economic activity.

Vulnerability, within the context of financial stability, refers to structural characteristics or weaknesses of the domestic economy that may either make it less resilient to possible shocks or intensify the negative consequences of such shocks. This publication analyses risks related to events or developments that, if materialised, might result in the disruption of financial stability. For instance, due to the high ratios of public and external debt to GDP and the consequentially high demand for debt (re) financing, Croatia is very vulnerable to possible changes in financial conditions and is exposed to interest rate and exchange rate change risks.

Macroprudential policy measures imply the use of economic policy instruments that, depending on the specific features of risk and the characteristics of its materialisation, may be standard macroprudential policy measures. In addition, monetary, microprudential, fiscal and other policy measures may also be used for macroprudential purposes, if necessary. Because the evolution of systemic risk and its consequences, despite certain regularities, may be difficult to predict in all of their manifestations, the successful safeguarding of financial stability requires not only cross-institutional cooperation within the field of their coordination but also the development of additional measures and approaches, when needed.

List of abbreviations

Art.	Article
ASEAN	Association of Southeast Asian Nations
bn	billion
b.p.	basis points
CB	central bank
CCoB	capital conservation buffer
CCyB	countercyclical capital buffer
CEE	Central and Eastern European
CES	Croatian Employment Service
CHF	Swiss franc
CNB	Croatian National Bank
CRD IV	Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms
CRR	Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms
d.d.	dioničko društvo (joint stock company)
DSTI	debt-service-to-income ratio
DTI	debt-to-income ratio
EEA	European Economic Area
EBA	European Banking Authority
EBITDA	earnings before interest, taxes, depreciation and amortisation
ECB	European Central Bank
ESRB	European Systemic Risk Board
EU	European Union
EUR	euro
Fed	Federal Reserve System
FINA	Financial Agency
GDP	gross domestic product
G-SII	global systemically important institutions buffer
HANFA	Croatian Financial Services Supervisory Agency
IRB	internal ratings-based
LGD	loss-given-default
LTD	loan-to-deposit ratio
LTI	loan-to-income ratio
LTV	loan-to-value ratio
no.	number
m	million
NRR	national reference rate
OG	Official Gazette
O-SII	other systemically important institutions buffer
O-SIIs	other systemically important institutions
Q	quarter

SRB systemic risk buffer

Two-letter country codes

AT Austria
BE Belgium
BG Bulgaria
CY Cyprus
CZ Czech Republic
DE Germany
DK Denmark
EE Estonia
ES Spain
FI Finland
FR France
GR Greece
HR Croatia
HU Hungary
IE Ireland
IS Iceland
IT Italy
LI Liechtenstein
LV Latvia
LT Lithuania
LU Luxembourg
MT Malta
NL Netherlands
NO Norway
PL Poland
PT Portugal
RO Romania
SE Sweden
SI Slovenia
SK Slovakia
UK United Kingdom

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