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CAPITAL BUFFERS AND LENDING DURING A CRISIS: CASE STUDY OF SERBIA

ABSTRACT: Capital buffers ensure that banks have the capacity to absorb any losses in the event of a financial crisis. Maintaining capital buffers at a high level enables banks to continue lending during times of crisis, protecting the stability of the financial system. On the other hand, banks may decrease lending activity in order to maintain capital adequacy if capital buffers are set at a low level, which could exacerbate the economic downturn. To guarantee economic recovery, it is therefore essential to find a balance between establishing and maintaining financial stability and credit activity during times of crisis.

The capital buffers that banks in the Republic of Serbia have been required to set aside since Basel III was implemented will be analyzed in this paper, along with an examination of the lending activity trend during times of crisis, including the coronavirus pandemic, the energy crisis, high inflation, and significant geopolitical tensions. As loaning activity recovered, the research revealed that the Republic of Serbia's banking sector maintained adequate capitalization during periods of severe crisis.

Key words: capital buffers, lending activity, monetary policy, macroprudential policy

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INTRODUCTION

Capital buffers are the additional capital that banks must hold above the regulatory minimum. These allocations are crucial because capital buffers shield banks from adverse financial conditions and operate as a safety net against possible losses, allowing banks to continue operating profitably while preserving the effectiveness of all their operations. During times of economic difficulty, banks are more vulnerable to credit risk because borrowers may find it difficult to meet their credit obligations on time due to the crisis. Therefore, capital buffers can assist banks in covering possible losses without significantly lowering lending activity. Regulators also demonstrate flexibility during a crisis, allowing banks to reduce their capital requirements in order to continue providing credit.

Capital buffers are a tool used by central banks, whose primary responsibility is to ensure financial stability. As a result, central banks have the flexibility to modify capital buffer allocations during times of crisis in order to sustain credit activity, which is crucial for the expansion of economic activity. Additionally, the central bank uses a variety of scenarios in stress tests to evaluate the resilience of banks and to determine whether the bank will continue to have enough capital during a stress period.

This paper examines how capital buffers and loan activity are adjusted in the Republic of Serbia during times of crisis, including the coronavirus outbreak, the energy crisis, and the ensuing high inflation and geopolitical tensions. The analysis will cover the time frame from 2020 through the second quarter of 2024. A review of the literature will follow the introductory note. An analysis of capital buffers and credit activity during the crisis is covered in the third section of the paper, which also looks at how capital buffers affect the implementation of monetary and macroprudential policies. The examination of future credit activity trends is presented in the fifth section of the paper, and the conclusion provides a summary of the key findings.

LITERATURE REVIEW

Macroprudential policy's primary objective is to ensure that banks are resilient and ready to absorb possible losses while simultaneously sustaining lending activity during times of elevated stress, which helps the financial system run smoothly. The application of capital buffers, which include buffers for globally systemically important institutions and other systemically important institutions, the systemic risk buffer, the capital conservation buffer, and the countercyclical capital buffer, is seen by the banking sector as

the primary tool of macroprudential policy. According to Cappelletti et al. (2019, p. 4), these capital buffers are additional Common Equity Tier 1 (CET1) capital that banks must hold above the required regulatory minimum. To improve the effectiveness of banks' ability to absorb losses, there needs to be an increase in the quantity and quality of capital from the perspective of macroprudential policy implementation. The Basel Committee focused on two aspects—procyclicality and mutual connectivity among banks—to lessen systemic damage (Caruana, 2012, p. 3). To create capital buffers that will help with future investments, Bui et al.'s analysis (2017, p. 26) demonstrated that it is vital to evaluate the appropriate level of capital buffers in relation to the risk of prospective losses to contribute to greater resilience of the financial system. The effects of adjustments to macroprudential regulatory requirements on credit activity and the capital ratio of UK banks between 1990 and 2011 were examined by Bridges et al. (2014, p. 16). The analysis demonstrated how regulatory capital requirements increase capital allocations, causing banks to create capital buffers over the regulatory minimum, which in turn affects banks' capital ratios. There was a varied reaction to the increase in capital allocations in terms of credit activity, with a decline in secured lending to the household sector and a decline in loan activity in the commercial real estate sector in the year that followed.

Prior to the crisis brought on by the coronavirus pandemic, an analysis by Lewrick et al. (2020, p. 4) revealed that banks had nearly US\$5 trillion in capital above the Pillar 1 regulatory requirements and a CET1 capital ratio of 14.0%, which was significantly higher than the regulatory minimum of 8%. Out of that total, US\$2.7 trillion was allocated to capital buffers, of which US\$270 billion could be used to finance credit activities. Numerous actions were taken during the European coronavirus pandemic to address the consequences of that event. One such measure was implemented by the European Central Bank, which allowed systemically important institutions to temporarily operate below Pillar 2, the level of capital that the bank expects institutions to maintain in order to ensure that they have the capacity to absorb losses resulting from unfavorable scenarios. As a result, the European Central Bank allowed banks to utilize capital relief measures from both the countercyclical capital buffer and the capital conservation buffer (Dursun-de Neef, 2023, p. 4).

The use of capital buffers was justified during times of crisis because, under normal circumstances, their use would be viewed as a warning sign and lead to regulatory constraints, including restricting or outlawing dividends, bonus payments, and share buybacks. Addressing the capital shortfall is required in the event that the bank reports one. This can be accomplished in a number of ways, including by raising share capital, selling securities, or cutting back on lending. It is more costly to increase capital

through an expansion of core capital, particularly in times of crisis when banks have to absorb losses. Reducing credit activity by making credit less accessible and raising financing costs is a more plausible course of action, which could be harmful to the overall economy (Maurin and Toivanen, 2015, p. 114). Following the global financial crisis of 2007-2009, regulatory capital reform was put into effect, followed by discussions over how increased regulatory capital requirements might affect credit and real activity. The cost of the capital requirements reform reduced bank lending activity, even as it increased the quantity and quality of banking capital and strengthened the resilience of the banking sector. Berrospide and Edge (2019, p. 33) demonstrated that a one percentage point increase in capital buffers results in a nearly two percentage point decrease in credit activity for utilized credit and a 0.5 percentage point decrease for committed loans, using the example of large banks in the USA between 2012 and 2016.

Nonetheless, a decrease in loan activity does not necessarily coincide with a shift in capital requirements. When there are robust lending prospects and strong bank performance, credit activity can be less susceptible to changes in capital requirements, according to an analysis by Bahaj et al. (2016, p. 18) based on data from the United Kingdom during the period 1989 to 2007. Sivec and Volk (2023, p. 142) used Slovenia as an example to demonstrate how the Bank of Slovenia released capital buffers in 2006, amounting to 0.8% of risk-weighted assets. Banks with higher capital allocation levels saw credit growth of 5–11 percentage points as a result. Achieving equilibrium in capital allocation in accordance with Basel III regulations is crucial, as is preserving credit activity that has a direct impact on real economic activity. The impact of capital buffers on the execution of monetary and macroprudential policies will be discussed in the next section of the paper.

CAPITAL BUFFER IMPACT ON MONETARY AND MACROPRUDENTIAL POLICY

Coordination of monetary and macroprudential policy can decrease uncertainty regarding decisions taken by the central bank and regulatory bodies, as well as increase macroeconomic and financial stability in response to specific shocks (Jonsson and Moran, 2014, p. 16). To achieve financial stability and maintain the monetary policy transmission mechanism, regulators must take into account the relationship between capital requirements and bank credit activity (Reghezza, 2020, p. 3). The objective of monetary policy implementation after the global financial crisis was to loosen credit requirements while keeping in mind how credit activity affects

a nation's ability to expand and develop economically. Evaluating how rising interest rates may affect banks' credit activities presents several challenges. Three major challenges were identified in an analysis by Cappelletti et al. (2019, p. 16). The first relates to how capital requirements vary. Changes in capital requirements typically affect the banking sector as a whole, making it nearly impossible to determine how each individual bank will be impacted. Second, in certain situations, supervisors establish unique capital requirements for banks, preserving the distinctiveness of each bank. Third, it's important to distinguish between the supply and demand of loans in order to evaluate how capital requirements affect banks' credit activities.

In their study, Rubio and Carrasco-Gallego (2015, p. 5) examined the relationship between Basel regulation and monetary policy, as well as how the ideal monetary policy fluctuates depending on the capital requirement ratio (CRR). Applying the Basel standards aims to limit the risks that banks take on, curb the excessive expansion of loans during prosperous times, and prevent the contraction of loan supply during economic crises. This would lessen the procyclicality of the banking sector (Couaillier et al., 2022, p. 5). Gambacorta and Song Shin (2016, p. 22) examined how bank leverage can influence bank lending in response to monetary policy shocks. The aforementioned authors began by discussing the lending channel used by banks and argued that the implementation of restrictive monetary policy affects these activities because the decrease in deposit reserves cannot be made up for by the monetization of certain assets. It is vital to give investors an adequate premium because the market for bank debt is not one in which these products can be easily sold. In these situations, bank capital is crucial since the quantity and quality of capital directly impact banks' creditworthiness, informing investors about the institution's rating. The aforementioned authors raised the question of how bank capitalization can impact credit activity, suggesting that further research should explore the relationship between bank capitalization and loan supply. They concluded that two mechanisms are at play: (1) banks can finance profitable investments with their excess capital, or capital beyond the regulatory minimum; in other words, they can use this capital to maintain credit activity in the event of adverse shocks, such as monetary tightening; and (2) banks with sufficient capital are viewed as less risky by investors and depositors and have easier access to less expensive sources of financing, including bonds or uninsured deposits. Ensuring that banks have adequate capitalization is critical, as insufficient capital could create a conflict between the supervisor's objective of guaranteeing the safety and stability of bank operations—which can be achieved even at the expense of reduced credit activity—and the monetary policy's attempts to promote credit activity.

Given their significance in maintaining the stability of the banking sector's operations during periods of elevated financial stress, capital buffers have a significant impact on the application of macroprudential policy. It is important to note that the global financial crisis of 2007–2009 highlighted the limitations of monetary policy in mitigating its effects, which prompted the creation of macroprudential policy. Following the coronavirus pandemic, global geopolitical tensions led to high inflation and the implementation of tightened monetary policy, which drove up borrowing costs and created challenging conditions for debt repayment. Credit default swaps, which reached record levels of activity, and the issue of collateralized debt obligations were the mechanisms by which credit risk was transferred throughout the financial system (Benbouzid et al., 2022, p. 6). The above-mentioned factors contributed to increased systemic stress, which in turn affected the financial system's stability. The banking sector's view of credit risk has drastically shifted since the global financial crisis, heightening concerns that borrowers may not be able to fulfill their loan obligations. Capital buffers are the primary innovation introduced by Basel III, which successfully addressed regulatory gaps from the pre-crisis era and established a regulatory structure designed to develop a stronger financial sector capable of supporting the real economy. Because they serve as a buffer against financial stress and reduce procyclicality, capital buffers are crucial in particular circumstances (Behn et al., 2020).

Behn and Hannes Lang (2023) highlight the significance of capital buffers for the implementation of macroprudential policy, particularly during times of heightened stress. According to these authors, during times of elevated volatility, capital-based macroprudential tools should prioritize maintaining the banking sector's resilience. Under these circumstances, there is an increased likelihood that accumulated instability will materialize, posing a risk to financial stability. This underscores the need for macroprudential authorities to closely monitor risks and respond promptly to prevent their materialization. Drehmann et al. (2020, p. 5) emphasized the importance of macroprudential policy during the coronavirus pandemic and stated that by permitting the use of capital buffer funds, officials made it clear that they were committed to reversing the pandemic's effects. Consequently, macroprudential policy measures complemented monetary and fiscal policy actions. Macroprudential regulators ensured that banks had both the capacity and flexibility to utilize released capital buffers in order to prevent a decline in lending activity to the real sector. Given that recession losses take longer to manifest, this allowed banks to play a role in supporting the loan supply during the recovery phase. These points highlight the significance of capital buffers in the execution of monetary and macroprudential policies, both of which aim to bolster the banking sector's resilience.

CAPITAL BUFFERS AND LENDING ACTIVITY DURING THE CRISIS IN SERBIA

Similar to almost every other country worldwide, Serbia dealt with the coronavirus pandemic by enacting lockdown measures, disrupting supply chains, and implementing a significant package of fiscal incentives to help households and businesses. In response, monetary policy lowered the key policy rate while simultaneously increasing dinar and foreign currency liquidity via swap and repo transactions. A phase of heightened geopolitical uncertainty ensued, followed by an energy crisis and higher-than-target inflation rates. This section of the paper will analyze the application of capital buffers and the changes observed in the Republic of Serbia's credit activity between the beginning of 2020 and the second quarter of 2024.

Capital buffers analysis

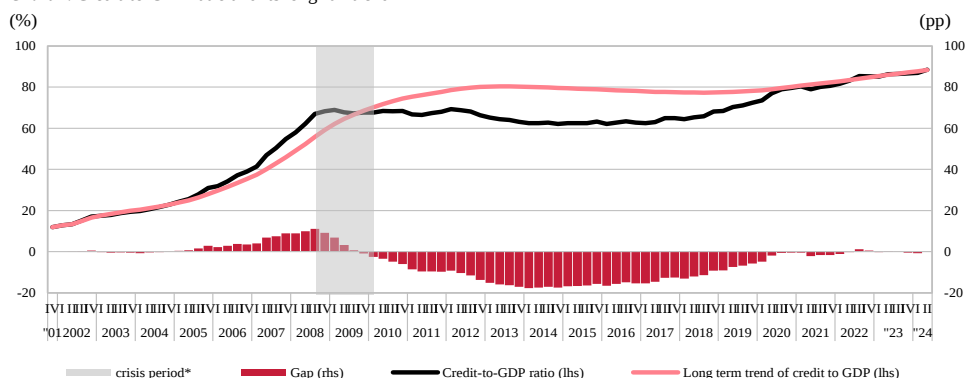
According to Milojević (2011, p. 171), the adoption of the Basel standards has resulted in a noteworthy development that requires sufficient attention: the impact of the standards on capital requirements and their effect on banks' capital allocations. The primary innovation of Basel III is the implementation of capital buffers, which enhance the quality of capital and bolster the banking sector's resilience. The Republic of Serbia adopted the Basel III standard in December 2016 when the National Bank of Serbia approved numerous regulations. The Directive on Capital Requirements for Credit Institutions (2013/36/EU) was incorporated through the Decision on Capital Adequacy of Banks, which is referenced in the Republic of Serbia's capital buffer regulation. As of June 30, 2017, banks in the Republic of Serbia are required to maintain the following capital buffers: the capital conservation buffer, countercyclical capital buffer, capital buffer for systemically important banks, and systemic risk buffer. By the end of 2023, banks in the Republic of Serbia held combined capital buffers, including the capital conservation buffer, countercyclical capital buffer, capital buffer for systemically important banks, and systemic risk buffer, amounting to 190.4 billion dinars, or 5.8% of risk-weighted assets.

The Decision on Capital Adequacy of Banks, specifically Article 434, mandates that banks maintain a **capital conservation buffer** equal to 2.5% of their risk-weighted assets on an individual and consolidated basis. Serbia has maintained a capital conservation buffer of 2.5% of risk-weighted assets since its inception (Author, 2021). The National Bank of Serbia's Decision on

Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons permitted banks to deduct specific credit risk-weighted exposures from their risk-weighted assets for the purpose of calculating the capital conservation buffer until December 31, 2023. Because banks are encouraged to approve housing loans without waiting for the residential building to be at least 60% completed or fully finished, the objective of this measure was to make it easier for citizens to access housing loans and thereby support the real sector, specifically the construction sector.

Articles 435–445 of the Decision on Capital Adequacy of Banks govern the **countercyclical capital buffer**. These articles state that banks must keep a countercyclical capital buffer equal to their risk-weighted assets multiplied by the specific rate of the countercyclical capital buffer, which is the weighted average rate of the countercyclical capital buffer for the Republic of Serbia and other nations where the bank has relevant credit exposures. Banks must maintain this buffer both on an individual and consolidated basis. The Republic of Serbia's countercyclical capital buffer rate is established by the National Bank of Serbia and ranges from 0% to 2.5% of the bank's risk-weighted assets; in extraordinary cases, the National Bank of Serbia may set a rate higher than 2.5% of the bank's risk-weighted assets if deemed necessary (Author, 2022). By computing a reference indicator that reflects the real credit-to-GDP ratio and its deviation from the long-term trend, the National Bank of Serbia establishes the rate of the countercyclical capital buffer on a quarterly basis. At the National Bank of Serbia's Executive Board meeting on September 12, 2024, the rate of the countercyclical capital buffer was last reviewed and determined to remain at 0%. This decision was made with the understanding that, according to data from June 2024, the share of total real credit in the GDP is 88.5%, and that this share's deviation from its long-term trend is only 0.2 percentage points. The estimated value of the gap is below the limit of 2 percentage points, which is a reference threshold that may indicate excessive credit activity (Chart 1).

Chart 1. Credit-to-GDP ratio and its long run trend



Source: National Bank of Serbia

If the real loan-to-GDP share is at least 2 percentage points greater than its long-term trend and the rate of credit growth is not consistent with economic growth, it is considered excessive. Because it generates an additional capital buffer during periods of sharp credit expansion, which can be released when systemic risks materialize, the adoption of this capital buffer plays a role in mitigating the cyclical dimension of systemic risk. The countercyclical capital buffer was introduced in 2017, and since then, its rate has remained at 0%. The National Bank of Serbia is attempting to support credit activity, which is crucial during periods of pronounced uncertainty, such as those that Serbia has experienced since 2020 due to the emergence of the coronavirus and subsequent geopolitical uncertainties, exposure to the energy crisis, and higher-than-target inflation rates.

The capital buffer for a systemically important bank is governed by the Decision on Capital Adequacy of Banks' Articles 452 and 453, which state that the National Bank of Serbia must examine this capital buffer and the process used to determine it at least once a year. The National Bank of Serbia considers several factors, including the bank's size, its significance to the Republic of Serbia's economy, and the importance of its cross-border operations, when determining whether a bank is systemically significant. The relationship and significance of a particular bank within the financial system, along with the complexity of its operations, are also examined. The National Bank of Serbia sets the capital buffer rate for systemically important banks, which ranges from 0% to 2% of the bank's risk-weighted assets. At its meeting on May 10, 2024, the Executive Board of the National Bank of Serbia established the rates that systemically significant banks must adhere to beginning on June 30, 2024. Nine banks—four with a capital buffer rate of

2% and five with a rate of 1%—have been identified as systemically important for the Republic of Serbia (Table 1).

Table 1. The list of systemically important banks in the Republic of Serbia and rates of the capital buffer rates for systemically important banks

Bank	Capital buffer rate for systemically important banks
BANCA INTESA	2%
OTP BANKA	2%
AIK BANKA	2%
UNICREDIT BANK	2%
NLB KOMERCIJALNA BANKA	1%
RAIFFEISEN BANKA	1%
BANKA POŠTANSKA ŠTEDIONICA	1%
ERSTE BANK	1%
EUROBANK DIREKTNA	1%

Source: National Bank of Serbia

The systemic risk buffer is prescribed in the Decision on the Rate and Manner of Maintaining the Systemic Risk Buffer, in addition to the Decision on Capital Adequacy of Banks. At least every two years, the necessity of maintaining this capital buffer is reviewed. During the last review in March 2024, the systemic risk buffer's rate was set at 3% of all foreign currency and foreign currency-indexed bank placements made to corporates and households in the Republic of Serbia. This rate has remained at this level ever since this capital buffer was introduced. To mitigate the systemic risk associated with euroization, a systemic risk buffer was implemented. Banks must keep a systemic risk buffer if their total placements to households and corporates in the Republic of Serbia account for more than 10% of all placements to corporations and households in the country that are denominated in foreign currency and foreign currency-indexed. Thus, to reduce allocations for this capital buffer, banks are incentivized to lower the share of foreign currency and foreign currency-indexed placements to corporates and households in the Republic of Serbia at the same time.

In particular, the Republic of Serbia has a high level of euroization, with placements at 63.9% and deposits at 55.8% as of the end of June 2024. Since a degree of euroization above 40% is deemed high, according to Windischbauer's analysis (2016, p. 18) applied to data from the Western Balkan countries, to which Serbia also belongs, the risk of euroization remains one of the major structural systemic risks to the stability of the banking sector in the Republic of Serbia. The Decision on Temporary

Measures for Banks to Facilitate Access to Financing for Natural Persons by the National Bank of Serbia, which was in effect until December 31, 2023, also allowed for the exclusion of housing loans when the residential real estate was a component of the bank's project financing or when at least 60% of the project had been completed. As a result, banks were encouraged to offer housing loans even when the residential real estate was not finished, supporting the construction sector. A systemic risk buffer helps enhance the banking sector's overall resilience to systemic risks in general, and to the systemic risk of euroization in particular.

Every quarter, the National Bank of Serbia conducts macroprudential stress tests to evaluate the banking sector's resilience based on shifts in the capital adequacy ratio. As of December 2023, the Republic of Serbia's banking system had sufficient capital, as evidenced by the regulatory capital to risk-weighted assets ratio of 21.38%. This figure is considerably higher than the required minimum of 8%. The results of the stress tests show that capitalization was adequate, considering that the regulatory capital to risk-weighted assets remained above the regulatory minimum in the baseline projection (21.76%), the moderate scenario (20.12%), and the worst-case scenario (18.60%). In light of the several crises to which the banking sector has been exposed since 2020, it may be said that it has maintained strong capitalization and resilience.

Lending activity analysis

The ratio of savings to investments at the national and international levels determines the significance of loans for the overall economic development of any nation. Thus, the most significant link between savings and investments is represented by loans (Vuković and Domazec, 2015, p. 160). In the analysis of credit activity, we will focus on the credit activity of the household (Chart 2) and corporate sectors (Chart 3). The household sector comprises citizens, private households with workers, entrepreneurs, and registered agricultural producers, while the corporate sector comprises businesses, public companies, and the non-financial sector in bankruptcy. The external debt of corporates, which makes up a portion of the external debt of the Republic of Serbia's private sector, will be included in the scope of corporate credit activity in addition to domestic credit activities.

For the majority of 2020, credit activity experienced double-digit year-over-year growth rates. This can be attributed to several factors, including strong loan realization at the start of the year, the National Bank of Serbia's easing of monetary policy, the implementation of a temporary moratorium on debt payments, and loans disbursed under guarantee schemes. The National Bank of Serbia reduced the key policy rate by 1.25 percentage points in 2020,

bringing it to 1.00% at the end of the year—the lowest level under the inflation targeting regime.

In March 2020, the National Bank of Serbia introduced a three-month temporary moratorium on debt repayment, which covered obligations to banks based on loans as well as all other obligations such as leasing, in order to mitigate the detrimental economic effects of the coronavirus and maintain financial stability in exceptional circumstances. Approximately 90% of debtors—81% of whom are legal entities and 91% are natural persons—accepted the moratorium. Adopted in July 2020, the second moratorium involved deferring payment of liabilities from August 1, 2020, to September 30, 2020. A total of 79% of debtors—66% of legal entities and 79% of natural persons—accepted this moratorium.

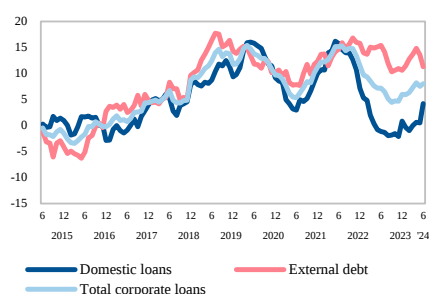
A significant set of fiscal policy measures, in addition to those implemented by the National Bank of Serbia, included tax policy measures (such as delaying the payment of value-added tax), direct assistance to corporates (such as offering three minimum wages per employee for three months to employees of micro, small, and medium-sized businesses, and half of the minimum wage for workers in large businesses), liquidity measures (such as guarantee schemes for loans to corporates, which were primarily approved in dinars, aiding in the process of the dinarization of placements), and fiscal incentives (direct assistance to all adult citizens).

The loan growth rate in 2020 varied from 9.4% in January to 13.8% in June. Over the first seven months, credit activity increased more rapidly through corporate loans than household loans on a year-over-year basis. After that, household loans became the primary source of credit growth. By the end of 2020, credit activity had grown at an annual rate of 9.9%, while corporate and household growth rates had reached 9.7% and 11.4%, respectively.

At the end of 2020, working capital loans accounted for 34.0% of corporate loan volume, while investment loans had the largest share at 41.9%. By the end of 2020, the two types of loans that had the greatest impact on the household sector were cash loans (44.5%) and housing loans (36.7%).

It's important to note that non-purpose unsecured lending to households for excessively long terms was restricted under the National Bank of Serbia's measures, which went into effect at the beginning of 2019. As a result, the maximum maturity period for cash loans in 2020 was set at seven years, and in 2021 it was further lowered to six years. In June 2020, the National Bank of Serbia decided to lower the mandatory down payment from 20% to 10% for housing loans in order to facilitate residential construction and encourage first-time homebuyers.

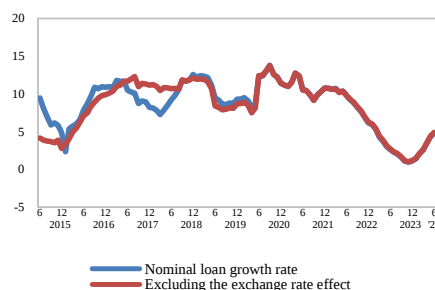
Chart 2. Growth of corporate loans*
(y-o-y growth rates, %)



* Data on loan growth adjusted for exchange rate movements are shown according to the new program exchange rate as of 10/31/2022 which is implemented in the new arrangement with the IMF.

Source: Financial stability indicators - Chart Pack,
National Bank of Serbia.

Chart 3. Household loans growth*
(y-o-y growth rates, %)



* Data on loan growth adjusted for exchange rate movements are shown according to the new program exchange rate as of 10/31/2022 which is implemented in the new arrangement with the IMF.

Source: Financial stability indicators - Chart Pack, National
Bank of Serbia.

The effects of government initiatives to encourage sustainable crediting of the household sector, provide loans from guarantee schemes to small and medium-sized businesses and entrepreneurs, and maintain low interest rates on the domestic money market and the euro zone market contributed to the growth of credit activity in 2021. However, throughout the majority of 2021, credit activity growth rates were lower year over year than in 2020 due to the high base from prior years and higher loan maturities starting in October 2021 following the expiration of the second moratorium. From the standpoint of the fiscal authorities, state aid was approved in 2021 for a total of 257.1 billion dinars, or 4.2% of GDP. Of this amount, 120.0 billion was related to the approval of loans from guarantee schemes, and 137.1 billion was for direct fiscal support, which includes funding for all adult citizens and additional funds for pensioners and the unemployed, as well as aiding the most vulnerable sectors like travel agencies, hotels, and catering establishments. By the end of 2021, the year-on-year rate of credit activity was 9.9%; by the same time, the corporate sector's rate was 11.2%, and the household sector's was 10.8%. By the end of 2021, the share of working capital loans had risen to 36.8%, while the share of investment loans had decreased to 40.4% from 2020. By the end of 2021, cash (43.8%) and housing loans (39.2%) accounted for the largest portion of the household sector's credit activity. Interest rates on dinar loans to households were at the level of 8.6% (indexed to FX and FX loans 3.1%), while loans to corporates were approved at a rate of 3.3% (indexed to FX and FX loans 2.6%).

The high base from the prior year, the maturity of loans approved under guarantee schemes, and, to some extent, the increase in interest rates as a

result of the tightening of the monetary policies of the National Bank of Serbia and the European Central Bank are the reasons why credit activity in 2022 recorded slower year-over-year growth than in 2021. The National Bank of Serbia raised the key policy rate in 2022 in response to heightened inflationary pressures and inflation that was above goal. The key policy rate grew by 4.0 percentage points during that year, reaching 5.0% by the end of that year. The National Bank of Serbia used the flexibility of the monetary policy framework to respond by raising the weighted average rate at reverse repo auctions starting in October 2021, prior to initiating the cycle of monetary policy tightening by raising the key policy rate starting in April 2022. The interest rate on the main refinancing operations was raised to 2.5% by the European Central Bank in response to growing inflationary pressures. By the end of 2022, the corporate sector contributed 3.7 percentage points and households 2.9 percentage points, respectively, to the 7.3% annual growth rate in credit activity. By the end of 2022, corporate credit activity had grown to an annual pace of 11.5%, while household credit activity had reached 6.3%. By purpose, by the end of 2022, the corporate sector's share of loans was still dominated by investment and working capital loans (38.9% and 36.4%, respectively), while the household sector's portion was dominated by cash and housing loans (43.0% and 41.0%, respectively). In December 2022, interest rates on dinar loans to households were at 10.5% (indexed to FX and FX loans 4.9%), while loans to corporates were approved at a rate of 6.8% (indexed to FX and FX loans 4.7%).

Credit activity continued to decline in 2023, and from September to November of that year, there was a minor year-over-year decline (-0.1%, -0.2%, and -0.4%, respectively). Nevertheless, by the end of that year, the situation had improved, and the overall credit activity had grown by 1.0% year over year, with loans to corporates rising by 6.0% and loans to households by 1.2%. A multitude of variables played a role in the decline in credit activity. Interest rates rose as a result of the European Central Bank and the National Bank of Serbia's ongoing tightening of their monetary policies. The European Central Bank raised the main refinancing operations rate by 2.0 percentage points to 4.5% in 2023, while the National Bank of Serbia raised the key policy interest rate by 25 basis points at six meetings, for a total of 6.5% at the end of the year. The interest rates on corporate loans (the interest rate at the end of 2023 was 8.5% for dinar loans, and 7.0% for indexed to FX and FX loans) and household loans (the interest rate at the end of 2023 was 12.4% for dinar loans, and 5.0% for indexed to FX and FX loans) were affected by this increase in key policy rates. The maturity of loans issued under guarantee schemes contributed to the slowdown in corporate credit activity, while the decision to cap interest rates on housing loans was the reason for the slower growth of households. Specifically, the

Decision on Temporary Measures for Banks Relating to Natural Persons' Housing Loans was adopted by the National Bank of Serbia during the September executive board meeting. This decision set a ceiling of 4.08% on the nominal interest rate for debtors who are beneficiaries of the first housing loan with a variable interest rate. This decision applies to holders of housing loans whose contracted amount does not exceed 200,000 euros. For the next fifteen months, beginning with the October 2023 installment and ending with the installment due in December 2024, those debtors will have a temporarily limited nominal interest rate. Banks will not be permitted to demand payment from the borrowers for the interest difference resulting from the implementation of this decision. This decision applies to existing housing loans but also to newly approved ones. By making this decision, the National Bank of Serbia has demonstrated its commitment to maintaining financial stability and safeguarding the household sector during a time of high interest rates.

Credit activity increased throughout the first half of 2024, reaching an annual growth rate of 4.7% in June (compared to 1.3% in March). The credit activity of corporates, which had a year-over-year growth of 8.1% (in March 7.3%), and households, who saw a growth of 4.9% (in March 2.7%), both contribute to this growth. At the end of June 2024, as in previous years, working capital loans (35.0%) and investment loans (38.6%) account for the majority of corporate loans, while cash and housing loans (44.6% and 39.4%, respectively) account for the greatest share of loans to households. Beginning in the end of 2023 and continuing through the first half of 2024, interest rates on loans in dinars decreased. By the end of June, dinar corporate loans had an interest rate of 8.3% (indexed to FX and FX loans 6.9%), while dinar household loans had an interest rate of 12.3% (indexed to FX and FX loans 5.1%). Nonetheless, a further decline in interest rates is anticipated given the loosening of the monetary policies of the National Bank of Serbia and the European Central Bank. The National Bank of Serbia began easing monetary policy at three meetings (in June, July, and September) when it lowered the key policy rate by a total of 75 basis points to 5.75%. This was done in response to the year-over-year inflation rate declining and returning to the target limits as of May 2024, when it was 4.5%. In response to the lessening inflationary pressure, the European Central Bank likewise lowered the main refinancing operation rate at its meetings in June and September, doing so by a total of 85 basis points, to 3.65%. In order to safeguard the interests of the customers of financial services, the National Bank of Serbia announced at the beginning of September a public hearing on the draft of a new Law on the Protection of Financial Service Consumers. This law will permanently cap interest rates on credit cards, housing and cash loans, and the permitted minus.

Despite the multifaceted crisis that the Republic of Serbia has been dealing with for the past four years, the percentage of non-performing loans in the total loans of the banking sector was held very near to a record low level. In other words, the share of non-performing loans has dropped by 19.3 percentage points since August 2015, when the Strategy for Solving Non-Performing Loans was approved. This strategy served as the foundation for the adoption of several actions aimed at lowering the level of non-performing loans. The share of non-performing loans at the end of June 2024 was 2.9%, indicating that the prior period's tightening of financial conditions had no appreciable detrimental effects on the quality of bank assets. With IFRS provision for NPLs to gross NPLs of 60.7% and IFRS provision of total loans to gross NPLs of 101.9%, the coverage of non-performing loans is still strong. The aforementioned evidence suggests that credit activity did not jeopardize financial stability and, in fact, facilitated the expansion of economic activity, even during moments of severe crisis.

FUTURE TREND IN LENDING ACTIVITY IN SERBIA

To comprehend the state of the credit market, it is crucial to examine trends in credit activity. We will use data from the Central, Eastern, and South-Eastern Europe (CESEE) Bank Lending Survey, which is published by the European Investment Bank on a semi-annual basis, as well as data from the Report on the Results of the Bank Lending Survey, which the National Bank of Serbia has been regularly publishing since the beginning of 2014.

Based on the information from the Report on the Results of the Survey on the Credit Activity of Banks for the Second Quarter of 2024, we will concentrate on the patterns in corporate and household credit activity as well as the key variables that significantly influence the demand for loans. The opinions of eighteen banks (out of twenty banks), or more than 99% of the banking sector's total balance sheet, are represented in the poll, which was performed between July 1 and July 12, 2024. Banks continued to apply the same requirements for granting corporate loans in the second quarter of 2024. However, when the loan's intended use is taken into account, the requirements have altered. While foreign currency and foreign currency-indexed loans were marginally restricted, credit criteria for corporate dinar loans were loosened. During the second quarter, the monetary policies of the National Bank of Serbia and the European Central Bank eased, which resulted in lower financing source costs. This alleviated the corporate sector's credit standards, but it also increased risk perception, decreased bank competition, and, to a lesser extent, the geopolitical and overall economic conditions tightened. The bank anticipates that the corporate credit

requirements will be tightened for the same reasons in the third quarter of 2024. Working capital finance is the main driver of the corporate sector's need for loans in the second quarter of 2024. Banks anticipate that corporate demand for loans to finance working capital and capital investments will continue to be strong during the third quarter of 2024.

In the second quarter of 2024, the household sector's credit requirements were loosened for dinar cash loans, but they held steady for consumer loans and foreign currency and foreign currency-indexed housing loans. While the circumstances in the real estate market played in the opposite direction, bank rivalry in the home loan market and lower financing costs affected the loosening of criteria. Banks predict that credit requirements for foreign currency-indexed housing loans and dinar cash loans will loosen by the third quarter of 2024. The demand for foreign currency and foreign currency-indexed housing loans, as well as dinar cash loans, increased in the second quarter of 2024 among households. These factors can be attributed to the rise in wages, the start of the European Central Bank's monetary policy easing, and the National Bank of Serbia's decision to temporarily cap interest rates on housing loans. Banks anticipate that household demand for loans will continue in the third quarter of 2024.

The European Central Bank conducts the Central, Eastern, and South-Eastern Europe (CESEE) Bank Lending Survey twice a year. Fifteen foreign banking groups and eighty-five local subsidiaries are included in this assessment. The Vienna Initiative 2.0 was used to construct the survey, which is administered annually in March and September. Semi-annual reports detailing the results are released, with the report covering the second half of 2013 being the first. According to the most recent report available, which covers the first half of 2024, the majority of banking groups from Central, Eastern, and South-Eastern Europe (80%) rated the Republic of Serbia's credit market as having moderate potential, while 20% rated it as having high potential. Sixty percent of banks claim that Serbian banks are more profitable than their parent bank, while twenty percent think the opposite. In keeping with regional trends, there should be a better recovery in the loan demand, which was lower in the prior period. Simultaneously, a better understanding of the real estate market and increased consumer confidence are likely to promote the greatest level of recovery in the demand for loans in the housing and consumer credit segments. According to the study, the household sector is anticipated to have a revival in the credit supply, while the corporate sector will see no change. It is anticipated that local financing conditions will positively affect the loan supply (this will be reinforced by funding from global financial institutions), regulatory adjustments, and parent bank outlooks.

CONCLUSION

Capital buffers are additional Common Equity Tier 1 capital that banks are required to have in order to cover potential losses in the case of a crisis, as per the Basel III regulation. The ability of banks with substantial capital buffer allocations to continue their credit activities in the event of significant instability fosters economic growth and safeguards the stability of the financial sector. The upkeep of capital buffers and the preservation of credit activities became especially crucial during periods of extreme crisis, such as the coronavirus outbreak, intense geopolitical tensions, the previous high inflation period, and the energy crises to which nearly every country in the world has been exposed since 2020.

This paper examines the capital buffers and credit activities of the Republic of Serbia from the start of 2020 to the first half of 2024, covering all significant periods of instability experienced during that time. The Republic of Serbia implemented capital buffers—capital conservation buffer, countercyclical capital buffer, capital buffer for a systemically important bank, and systemic risk buffer—through the implementation of Basel III, which has required banks to set aside these buffers since June 2017. The analysis confirmed that banks adhere to all regulatory requirements regarding the obligation to set aside capital buffers. The National Bank of Serbia took a proactive approach during periods of severe crisis, permitting specific exclusions from the calculation to support credit activity and safeguard corporates and households during extremely stressful times. The outcomes of the macroprudential stress tests verified that, even in the worst-case scenario, the domestic banking sector would have sufficient capital.

Both from the perspective of corporates and households, credit activity was able to be maintained on a stable basis, promoting economic growth even in times of crisis without endangering the stability of the financial sector. The banking sector's asset quality has not declined, as evidenced by the low percentage of non-performing loans relative to total loans and the high degree of loan coverage. Banks anticipate more demand for all kinds of loans from households and corporates in the third quarter of 2024. This demand is expected to be fueled by competition among banks and more enticing lending terms. The analysis concludes that, even during several crises, the Republic of Serbia's previously attained macroeconomic stability allowed for the preservation of the banking sector's capital adequacy and loan activity.

REZIME

ZAŠTITNI SLOJEVI KAPITALA I KREDITNA AKTIVNOST TOKOM KRIZE: STUDIJA SLUČAJA SRBIJE

Zaštitni slojevi kapitala osiguravaju da će banke u slučaju finansijske krize imati kapacitet da apsorbuju sve gubitke. Održavanje zaštitnih slojeva kapitala na visokom nivou omogućava bankama da nastave sa kreditiranjem u vreme krize, štiteći stabilnost finansijskog sistema. S druge strane, banke mogu da smanje kreditnu aktivnost kako bi održale kapitalnu adekvatnost ako se zaštitni slojevi kapitala uspostave na niskom nivou, što bi moglo pogoršati ekonomski pad. Da bi se garantovao ekonomski oporavak, neophodno je pronaći ravnotežu između uspostavljanja i održavanja finansijske stabilnosti i kreditne aktivnosti u kriznim periodima. Zaštitni slojevi kapitala koje su banke u Republici Srbiji morale da izdvoje od implementacije Bazela III biće analizirani u ovom radu uz sagledavanje trenda kreditne aktivnosti u vremenima krize, uključujući pandemiju korona virusa, energetska krizu, visoku inflaciju i značajne geopolitičke tenzije. Kako se kreditna aktivnost oporavila, analiza je pokazala da je bankarski sektor Republike Srbije zadržao adekvatnu kapitalizaciju u periodima značajne krize.

Ključne reči: zaštitni slojevi kapitala, kreditna aktivnost, monetarna politika, makroprudencijalna politika

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