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Banking Sector Lending Activity Stimulation to Promote Economic Growth

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ABSTRACT

The subject of the study is the banking sector credit activity in Russia and the factors that determine it. **The relevance** is due to the fact that the changed external political and macroeconomic conditions, the growing role of the banking sector in economic development challenge researchers to determine ways to stimulate bank lending activity. **The purpose** of the study is to identify measures to stimulate bank lending activity. **Scientific novelty** includes the identification of the factors influencing the lending activity of banks. **The research methodology** is based on statistical modeling using a linear model on panel data. The statistical database includes indicators for 26 main banking groups, the study period is 6 years (from 2015 to 2020). We proposed a hypothesis that the banking sector lending activity depends on macroeconomic and industry factors, as well as that there is a difference in this influence in the short and long term. As a result of the empirical study, this hypothesis was not rejected. **Conclusions.** Based on modeling, we suggested some legislative and regulatory measures to stimulate the lending activity of banks.

Keywords: banks; banking regulation; economic growth; banks' lending activity; factors of lending activity; lending incentives; banking groups

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INTRODUCTION

Ensuring financial stability and seeking drivers of economic growth over the past few years have taken on a new tone due to changing political and macroeconomic conditions, the emergence of new risks, rapid digitalization, and other factors. There is no doubt about the key role of the banking sector in achieving the main goals of the country's economic development. In the modern world, credit remains the most important source of economic development [1]. At the same time, a significant problem is finding a compromise between the financial stability of the banking sector and its participation in providing credit resources to entities of the Russian economy. In these conditions, despite the relevance of the problem and the undeniable attention of the regulator, the present study has the following elements of scientific novelty. Firstly, we conducted statistical modeling and identified the factors determining the credit activity of the banking sector, providing their quantitative assessment. The merit of the work is the identification of differences in the factors of banks' credit activity in the short-term and long-term perspectives. Secondly, taking into account the results of the study, we propose appropriate measures to stimulate bank lending to the economy.

LITERATURE REVIEW AND FORMULATION OF RESEARCH HYPOTHESIS

The sources of the growth in bank credit activity are quite diverse and are actively studied in both Russian and foreign economic science. Among the key factors are both macroeconomic parameters and those directly related to the indicators of the banking sector. For example, A.V. Podrugina [2] studies the aggregate factors of bank credit activity: demand and supply of loans — and concludes that supply factors dominate in shaping credit activity. The author also asserts that the tightening of credit standards causes a statistically significant slowdown in credit activity.

M.Yu. Golovnin studies the role of macroeconomic regulation in stimulating the credit activity of banks [3].

I.V. Larionova identifies the development of relevant state programs to support the Russian economy as a significant factor stimulating bank lending [4].

A separate area of research is the study of the impact of regulatory requirements on credit activity. For example, an empirical study [5] conducted by the authors in 2014 using data from European banks shows a decline in bank lending as a result of compliance with Basel standards. Other authors [6] also argue that the implementation of the Basel Committee standards has led to a slowdown in the growth of bank lending and the replacement of loans to the private sector with risk-free and more liquid securities. Other examples can also be provided, illustrating that the new capital standards (Basel III) negatively affect banks' lending activity [7, 8]. It should be noted that there are other research results. Thus, in the paper [9], it is noted that the requirements for banks' capital adequacy stimulate the increase in banks' capitalization, and consequently, their ability to expand credit activity. On the other hand, there are studies [10] confirming the positive impact of regulatory liquidity requirements on the volume of lending, or proving that liquidity indicators have a significant positive effect on the growth of commercial lending and a negative effect on the growth of retail and other lending [11].

The analysis of economic literature, taking into account the current situation in the Russian financial market, has allowed for the formulation of the scientific hypothesis of this study: macroeconomic and sectoral factors influence the credit activity of the banking sector. The influence of factors differs in the short-term and long-term perspectives.

RESEARCH METHODOLOGY

The study was conducted by the authors in several stages, the description of which is presented in *Fig. 1*.

At the first stage of the research, Russian and foreign literature was studied, and the scientific

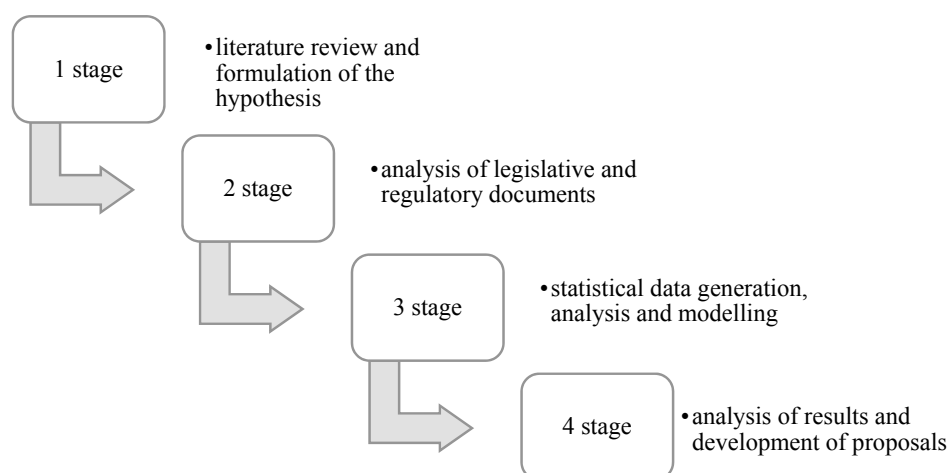


Fig. 1. Stages of the Study

Source: Compiled by the authors.

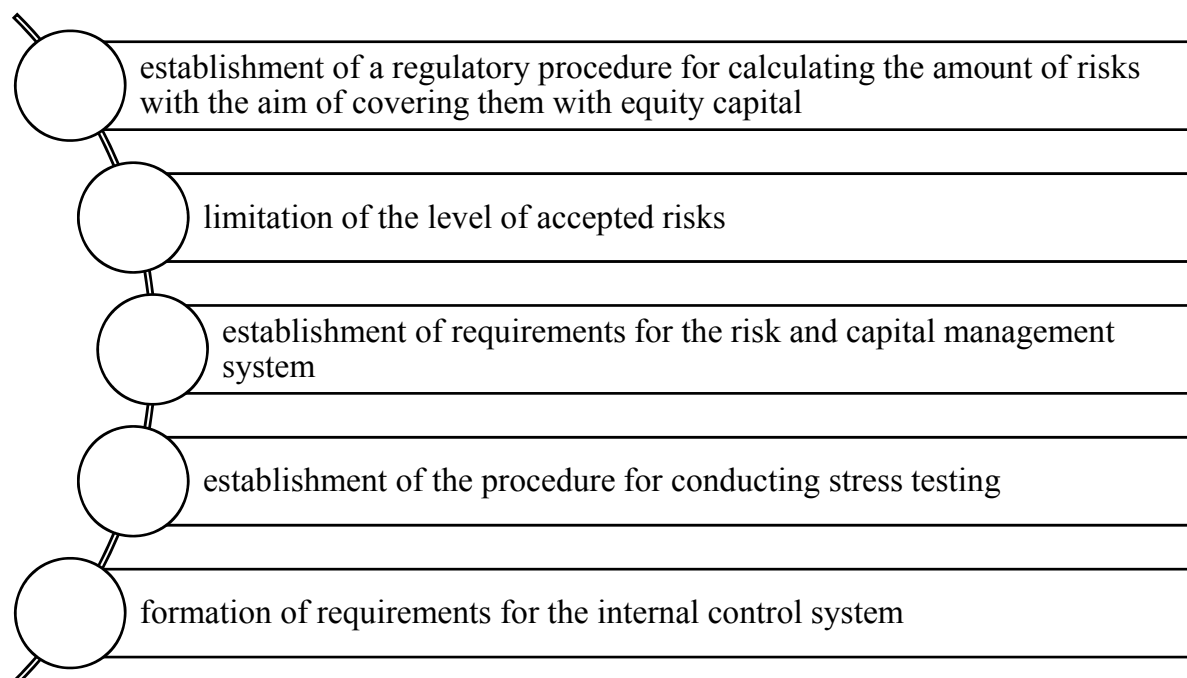


Fig. 2. Main Directions of Regulation

Source: Compiled by the authors.

hypothesis of the research was formulated, as presented in the previous section.

At the second stage, based on the study of the legislative regulation of banking activities and the regulatory framework of the Bank of Russia, shortcomings in modern regulation were identified, primarily in terms of stimulating the credit activity of banks.

Analysis of the regulatory practices of the Bank of Russia shows that the primary task

of modern banking regulation is to ensure financial stability. Taking this into account, the mega-regulator focuses its activities on preventing the concentration of risks that could threaten financial stability at both the micro- and macro levels. Thus, over the past few years, a risk-oriented regulation policy has been implemented in the financial market. The main directions of such regulation are presented in Fig. 2.

Since 2018, the Bank of Russia has been demonstrating an emphasis on the application of stimulating regulation, that is, encouraging the credit activity of banks in those segments of the Russian economy that most actively contribute to economic growth.¹ As tools of stimulating regulation, one should mention the differentiation of the capital burden on banks depending on the priority of developing specific sectors, rather than solely on the risk inherent to borrowers. This approach, first applied during the economic stimulus period amid the COVID-19 pandemic, received further development with the implementation of the finalized approach to assessing the capital adequacy of credit institutions.² As an example, one can consider the risk assessment of project financing, mortgage lending, and lending transactions for small and medium-sized enterprises, where the capital reserve is minimized for relatively low-risk products from the provided list of loans. Another tool of stimulating regulation is the formation of reserves to cover losses on loans and other credit-related claims.³ The Bank of Russia has changed the previously applied formalized approach to assessing the quality category of credit, based on the borrower's financial condition and debt servicing, implementing a risk assessment approach based on the level of development of investment projects applicable to project financing and lending to borrowers using escrow accounts. Moreover, the Bank of Russia is gradually developing the

use of new regulatory tools. Thus, they are implementing a new tool aimed at limiting the risks of unsecured consumer lending – macroprudential limits, rather than risk coefficients that increase the capital burden. This approach will help maintain the lending potential of the economy.⁴

Thus, the stimulating regulation of the banking sector is gradually developing, but it does not have a systemic nature. It should also be noted that currently, the Bank of Russia does not incentivize credit institutions in terms of systemic lending to key state programs aimed at the economic and technological development of Russia, as evidenced by our above analysis of the regulatory norms of the Bank of Russia and the refinancing system for credit institutions. Indeed, at present, specialized refinancing mechanisms exclusively include the following areas: refinancing loans to small and medium-sized enterprises (SMEs) under guarantees from the Federal Corporation for the Development of SMEs and under the pledge of government bonds, refinancing loans to support non-commodity exports under the pledge of claims on loans secured by insurance contracts from EKSAR JSC, as well as refinancing under claims on loans for the implementation of investment projects, the fulfillment of obligations for which is secured by state guarantees of the Russian Federation. Other refinancing programs for credit organizations aimed at supporting state programs of the Russian Federation in 2023 were absent.

The third stage of the research involved the formation of statistical data, their evaluation, and modeling. The database included key financial indicators based on reporting under international standards for twenty-six of the largest Russian banking groups, with the Orbis Bank Focus analytical database used as the data source.

¹ Stimulating banking regulation. Report for public consultations. Central Bank of the Russian Federation: official website. Moscow. 2018. 16 p. URL: https://cbr.ru/content/document/file/50671/consultation_paper_180628.pdf (accessed on 01.05.2023).

² On mandatory standards and surcharges to capital adequacy standards for banks with a universal license [Instruction of the Bank of Russia dated November 29, 2019, No. 199]. Reference and legal system "Consultant Plus". URL: http://www.consultant.ru/document/cons_doc_LAW_342089/ (accessed on 15.04.2023).

³ On the procedure for the formation of reserves by credit organizations for possible losses on loans, loan and loan-equivalent debt [Regulation of the Bank of Russia dated 28.06.2017 No. 590]. Reference and legal information system "Consultant Plus". URL: http://www.consultant.ru/document/cons_doc_LAW_342089/ (accessed on 15.04.2023).

⁴ Main directions for the development of the financial market of the Russian Federation for 2023 and the period of 2024 and 2025. Central Bank of the Russian Federation: official website. Moscow. 2022. 80 p. URL: https://cbr.ru/Content/Document/File/143773/onfr_2023-2025.pdf (accessed on 15.04.2023).

To assess the credit activity of banking groups, we applied the LTA_{it} indicator, which serves as the modeled variable for the credit activity of banking group No. $i = 1, 2, \dots, N$ over the period $t = 2015, 2016, \dots, 2020$. This indicator is defined as the share of the loan portfolio in the assets of the banking group (1.1). As factors of bank credit activity, we considered macroeconomic parameters affecting the entire banking sector (GDP dynamics, exchange rates, market interest rates, oil prices) and key micro-level indicators characterizing the performance of each bank (interest margin, credit portfolio quality, efficiency indicators, asset size). Thus, as parameters explaining the magnitude (1.1), the following variables were adopted (1.2):

$Z_{it}(x_{1it})$ – Z-score, used to assess the financial stability of a bank based on the ratio of balance sheet capital to assets, return on assets, and the volatility of the latter [12–17], %;

$NIM_{it}(x_{2it})$ – interest margin, %;

$CI_{it}(x_{3it})$ – ratio of operating costs to net income, %;

$LD_{it}(x_{4it})$ – ratio of loans issued and deposits attracted, %;

$ILL_{it}(x_{5it})$ – level of impaired loans, %;

$CAR_{it}(x_{6it})$ – ratio of capital adequacy, %;

$TA_{it}(x_{7it})$ – total assets (billion USD);

$y_{it}(x_{8it})$ – nominal GDP growth rate, %;

$MPR_{it}(x_{9it})$ – Mosprime money market rate, %;

$Oil_{it}(x_{10it})$ – Brent price growth rate, %;

$D_{it}(x_{11it})$ – exchange growth rate (US dollars), %;

the values of variables (1.1) and (1.2) form a set of panel data (1.3) consisting of 156 lines:

$$(LTA_{it}, Z_{it}; NIM_{it}, CI_{it}, LD_{it}, ILL_{it}, CAR_{it}, TA_{it}, y_{it}, MPR_{it}, Oil_{it}, D_{it})_{i=1, \dots, N}^{N=26, T=2020}_{t=2015} \quad (1.3)$$

Data set fragment (1.3) presented in the *Appendix*.

The modelling approaches used in this study are described in the paper [18].

The research task is to make a well-founded choice of one of the model options for determining the LTA_{it} indicator and evaluating the coefficients $(a_j)_{j=1, 2, \dots, m}$ – influence on the value of the LTA_{it} explanatory variables (1.2).

The fourth stage of the research is the formulation and justification of proposals for improving bank regulation to stimulate their lending activity.

RESULTS AND DISCUSSION

The special role of banks in the financial market necessitates the establishment of an effective system of regulation and supervision. This system, formed in the wake of international standards, is quite rigid and is in clear contradiction with the task of promptly countering large-scale sanctions pressure on the Russian economy. In 2022, the Bank of Russia adopted unprecedented regulatory easing measures; however, starting in 2024, a gradual rollback of many of them is planned. In recent years, as discussed above, the Bank of Russia has begun implementing the so-called stimulating banking regulation. At the same time, it is characterized by a targeted, rather than a systemic, approach. The latter can only be based on the legislative enshrinement of stimulating economic growth as one of the main tasks of the Bank of Russia. In practical terms, we are talking about a channel for stimulating the economy, such as bank lending. The empirical part of this study was dedicated to this issue. The feature of this paper is the assessment of the credit activity of banking groups in the short-term and long-term perspectives, taking into account the main hypothesis of the research proposed by us.

The model of credit activity of banking groups we built for the short term turned out to be a pooled model with the following regression equation (1.4).

$$\left\{ \begin{array}{l} \widehat{LTA}_{it} = 27 + 0.2 \cdot NIM_{it} + 0.06 \cdot CI_{it} + 0.43 \cdot LD_{it} - 0.45 \cdot ILL_{it} - 0.3 \cdot CAR_{it} + 0.01 \cdot TA_{it} + 0.2 \cdot y_t - 0.8 \cdot MPR_t \\ (5) \quad (0.2) \quad (0.03) \quad (0.04) \quad (0.07) \quad (0.15) \quad (0.007) \quad (0.15) \quad (0.3) \end{array} \right. \quad (1.4)$$

$$R^2 = 0.56.$$

The standard errors of the coefficient estimates are indicated in parentheses.

Analyzing model (1.4), we can draw the following conclusions.

1. Not all explanatory variables from the set (1.2) turned out to be significant for explaining the values of the LTA_{it} indicator. For example, the variable Z_{it} turned out to be insignificant. Going ahead, we emphasize that in the long term, the variable

Z_{it} turns out to be significant.

2. The signs of the coefficients for the explanatory variables ILL_{it} , LD_{it} , NIM_{it} , which characterize the financial condition and operational models of banking groups, fully align with the meaning of the influence of these variables on the LTA_{it} indicator. For example, the negative sign of the coefficient -0.45 for the variable ILL_{it} indicates that an increase in the share of bad loans reduces the inclination of banking groups to lend. Specifically, a 1% increase in ILL_{it} reduces, ceteris paribus, the value of LTA_{it} by 0.45 units.

3. As the main factor that positively influences the bank's credit activity, the LD_{it} indicator, which characterizes the ratio of loans to deposits, should be mentioned. Thus, an increase of one percent (one unit) in the value of the LD_{it} variable, with other factors unchanged, leads to an expected increase in the value of \widehat{LTA}_{it} by 0.43 units.

4. The size of total assets. The level of total assets TA_{it} also serves as a significant variable, exerting a positive influence on the lending activity of banks.

5. Regarding macroeconomic variables, y_{it} (the growth rate of nominal GDP) has a noticeable positive impact on bank lending activity. Indeed, a 1% increase in y_{it} holding other factors constant, results in an expected increase in \widehat{LTA}_{it} by 0.2 units. According to the analysis results, we also see that a one percent increase in the net interest margin (NIM_{it}) leads to an expected increase in the value of \widehat{LTA}_{it} by 0.2 units. Note that the coefficient for the variable NIM_{it} was not determined very reliably.

6. The dynamics of the Mosprime Rate have a negative impact on the credit activity of banks: an increase of one unit in the value of the variable MPR_t leads to an expected decrease in the value of \widehat{LTA}_{it} by approximately 0.8 units. An increase of one unit in the capital adequacy ratio CAR_{it} is expected to lead to a decrease in the value of \widehat{LTA}_{it} by approximately 0.3 units.

7. The coefficient of determination (R^2) shows that in model (1.4), the explanatory variables account for 56% of the variation in the credit activity of banking groups in the short term, while 44% is attributed to unaccounted factors. The correlation coefficient between the actual value of the LTA_{it} indicator and the forecasted values \widehat{LTA}_{it} calculated using model (1.4) is approximately equal to $\sqrt{0.56} = 0.75$.

The model for assessing the credit activity of banking groups in the long term (the variable model LTA_t), estimated using time-averaged data from $t = 2015, 2016, \dots, 2020$, has the following equation (1.5)

$$\begin{cases} \widehat{LTA}_i = 0.06 \cdot Z_i + 0.23 \cdot NIM_i + 0.28 \cdot CI_i + 0.41 \cdot LD_i - 0.3 \cdot ILL_i + 0.02 \cdot TA_i. \\ \quad (0.03) \quad (0.26) \quad (0.05) \quad (0.04) \quad (0.1) \quad (0.01) \\ R^2 = 0.99. \end{cases} \quad (1.5)$$

The main conclusions were as follows. In the long term, the credit activity of banking groups depends on the ratio of loans to deposits (LD_i) (positive influence), the share of impaired loans in the loan portfolio (ILL_i) (negative influence), the ratio of operating costs to income (CI_i) (positive), the net interest margin (NIM_i) (positive), and the size of the banking group's assets (TA_i) (positive). We would like to emphasize that in the long term, the variable Z_i — the financial stability of the banking group — turned out to be significant for explaining the credit activity of banks. Thus, an increase in Z_i by one unit leads to an expected growth \widehat{LTA}_i by 0.06 units. The interpretation of the coefficient of determination $R^2 = 0.99$ shows that in model (1.5), the explanatory variables account for 99% of the long-term credit activity of banking groups, while 1% of the value of LTA_{it} is attributed to unaccounted factors.

Thus, the conducted modeling and analysis of the results allow us to assert that our proposed hypothesis is not refuted. An important result of the study is that when comparing the impact of factors on credit activity in the short-term and long-term perspectives, a difference was found. In the short-term, macroeconomic variables have a significant impact. In the long-term, capital adequacy does not affect the lending activity of banks; however, a factor such as the financial stability of the group emerges. In both cases, attention should be paid to the quality of the loan portfolio, the ratio of loans to deposits, the interest margin, and the level of operating costs.

The results of the conducted research allow us to conclude that the stimulation of banks' credit activity should be based on the perspective: whether a short-term task needs to be solved or long-term growth needs to be stimulated. In any case, credit activity is determined by the scale of the banking group's operations.

If we are talking about the long-term aspect of stimulating the lending activities of banks, then there is no contradiction between ensuring the financial stability of the bank and its lending activity. However, attention should be paid to parameters such as the loan-to-deposit ratio and the level of operational costs. The influence of these factors in this case is opposite.

When stimulating the credit activity of banks in the short term, it is necessary to additionally consider the opposite effect of the capital adequacy ratio: this indicator has a positive impact on financial stability and a negative impact on credit activity. A similar situation arises with regard to the factor of the money market interest rates. In the first case, the impact is also positive, in the second — negative.

Overall, it should be emphasized that the directions of banking sector regulation should be determined based on the priorities of the country's economic policy.

CONCLUSION

The conducted research allows us to draw the following conclusions.

1. The analysis of contemporary banking regulation shows that it is still primarily aimed at ensuring the financial stability of the banking sector. Stimulative regulation is carried out selectively: through special approaches to assessing capital adequacy by lowering/increasing risk coefficients when lending to specific sectors (economic entities) or forming reserves to cover losses. At the same time, given the role of the banking sector in the country's economy as the main channel for the redistribution of free resources, as well as considering the current tasks of accelerated development and economic reorientation, banking regulation should shift its focus towards stimulating the credit activity of banks. In this regard, it is advisable to expand the

objectives and powers of the Bank of Russia by making the appropriate amendments to Federal Law No. 86 of 10.07.2002 “On the Central Bank of the Russian Federation (Bank of Russia)”. At present, in accordance with Article 3, the objectives of the Bank of Russia’s activities are the protection and ensuring the stability of the ruble; the development and strengthening of the banking system of the Russian Federation; the ensuring of the stability and development of the national payment system; the development of the financial market of the Russian Federation and ensuring its stability. Additionally, the task of “stimulating economic development and structural restructuring of the economy” should be included.

The next direction for the development of the Bank of Russia’s stimulating regulation, in our opinion, could be the reduction of capital requirements for banks on loans within the framework of targeted government programs. At the same time, the development and implementation of new refinancing tools in the practice of the Bank of Russia, aimed at supporting loans for the specified purposes, are required. For example, in September 2023, the Government approved a comprehensive state program “Energy Conservation and Increasing Energy Efficiency” (Resolution No. 1473 dated 09.09.2023). It seems appropriate to introduce a refinancing instrument such as the “mechanism for supporting energy-saving and energy efficiency projects” secured by the rights of claims under the corresponding bank loan agreements, provided that the loans are rated no lower than the second quality category in accordance with the regulatory approach of the Bank of Russia. It seems reasonable to implement similar refinancing instruments for other government programs as well.

2. The conducted modeling allowed for the identification of factors positively influencing

the credit activity of banks and banking groups. In particular, a positive impact of asset size on the financial stability and credit orientation of banking policy has been identified. Based on this conclusion, lower capital requirements should be imposed on small and medium-sized banks compared to large credit institutions and banking groups in order to stimulate their lending activity. One of the options for solving the problem could be the differentiation of surcharges for maintaining the capital adequacy of banks depending on the size of their assets, which would require amendments to the Bank of Russia Instruction No. 199 from 29.11.2019.

An important fact is that the factors determining the credit activity of banks and banking groups differ in the short-term and long-term perspectives. Accordingly, the stimulation of banks’ credit activity should be based on the perspective of regulation: prioritizing short-term or long-term results. This conclusion, in our opinion, should be taken into account by the Bank of Russia when improving the policy of stimulating regulation. Indeed, in the short term, it is advisable to: reduce the level of capital adequacy buffers; stimulate predictability and lower market interest rates; regulate the management of banks’ non-performing loans, which will improve the quality of their loan portfolios; reduce the requirements for long-term liquidity ratios, which will stimulate the growth of the loan-to-deposit ratio.

On the contrary, if the task is to achieve long-term sustainable stimulation of banks’ credit activity, then the focus, in addition to the two aforementioned positions, should be on ensuring the financial stability of banks and implementing measures aimed at increasing the efficiency of banks’ credit business (growth of interest margin).

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Appendix

Fragment of the Dataset (1.3) Used for Modeling

firm	year	Z	LTA	NIM	CL	LD	ILLD	CAR	NA	y	MPR	Oil	D
1	2020	45.7	64.9	5.1	36.2	98.7	6.3	14.7	487.5	-2.1	5.3	-34.8	11.9
1	2019	114.5	68.0	5.5	37.6	100.9	7.1	14.8	487.5	5.5	7.6	-10	2.7
1	2018	115.4	62.8	6.0	41.6	101.3	7.9	12.4	487.5	13.1	7.6	31.6	7.9
1	2017	119.7	68.2	5.8	35.2	100.7	4.2	13	487.5	7.3	8.5	23.9	-12.7
1	2016	100.8	68.4	6.3	40.4	100.3	9.4	12	487.5	3	11.1	-16.5	9
1	2015	70.6	68.5	4.3	45	101.2	7.1	12.6	487.5	5.1	13.7	-47.1	56
2	2020	38.5	62.8	3.7	54.4	95.9	8.6	11.8	245.6	-2.1	5.3	-34.8	11.9
2	2019	84.0	65.2	3.7	46.3	99.0	8.4	11.2	245.6	5.5	7.6	-10	2.7
2	2018	64.2	69.0	3.9	41.4	105.3	9.7	11.4	245.6	13.1	7.6	31.6	7.9
2	2016	67.9	65.9	4.1	51.6	121.4	6.8	14.6	245.6	3	11.1	-16.5	9
2	2015	37.3	62.4	2.6	59.5	126.5	6.9	14.3	245.6	5.1	13.7	-47.1	56
3	2020	48.1	66.9	2.8	80.5	90.1	4.6	12.7	101.9	-2.1	5.3	-34.8	11.9
3	2019	38.1	66.8	2.7	86.4	92.4	5.5	13.1	101.9	5.5	7.6	-10	2.7
3	2018	61.7	61.8	2.9	89.1	88.9	6.6	12.4	101.9	13.1	7.6	31.6	7.9
3	2017	58.1	64.7	3.2	82.1	96.4	8	13.1	101.9	7.3	8.5	23.9	-12.7
3	2016	74.7	66.6	3.2	85.0	105.2	24.6	13.5	101.9	3	11.1	-16.5	9
3	2015	22.0	62.5	2.3	79.2	107	20.5	14.2	101.9	5.1	13.7	-47.1	56
4	2020	4.8	64.8	4.0	26.4	95.1	4.7	13.0	63.8	-2.1	5.3	-34.8	11.9
4	2019	9.0	62.9	4.4	57.7	93.3	5.1	12.4	63.8	5.5	7.6	-10	2.7
4	2018	14.8	61.2	4.3	30.3	91.2	3.5	12.9	63.8	13.1	7.6	31.6	7.9
4	2017	11.7	60.2	4.3	63.0	92.9	8.1	11.3	63.8	7.3	8.5	23.9	-12.7
4	2016	87.9	56.7	5.3	89.0	105.5	15.1	13.9	63.8	3	11.1	-16.5	9
4	2015	88.2	61.0	4.6	25.8	117.7	15.6	14.7	63.8	5.1	13.7	-47.1	56

Source: Compiled by the authors on the basis of an analytical database Bank Fokus.

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