MTMSD 2022
I International Conference «Modern Trends in Governance and Sustainable Development of Socio-economic Systems: from Regional Development to Global Economic Growth»

IMPACT OF COVID-19 FACTORS ON THE SUSTAINABILITY OF BANK LENDING IN RUSSIA

Magomed Tashtamirov (a)*
*Corresponding author

(a) Kadyrov Chechen State University, Grozny, Russia, basxo@yandex.ru

Abstract

Lending to the economy is an important factor in ensuring sustainable economic growth of the national economy and the world economy. With each new crisis there are new determinants affecting the nature and quality of bank lending, which is mediated by the state of credit institutions themselves. The beginning of 2020 marked a new fundamental factor in the economic behavior of economic entities - COVID-19. Accordingly, the purpose of this study is to identify the degree of influence of coronary crisis indicators, namely the number of morbidity, mortality and convalescence on the dynamics of bank lending of the Russian economy. The main methods of work were comparative-comparative analysis, dynamics analysis, structural analysis and econometric methods - Pearson correlation coefficient. The study revealed a high degree of correlation between the COVID-19 mortality variable in Russia and the dynamics of bank lending during the active phase of infections and the post-pandemic period.

Keywords: Bank lending, coronacrisis, correlation, economic behavior, pandemic

1. Introduction

COVID-19 caused an unprecedented economic shock on the scale of global economies. The pandemic has caused a systemic economic shock on an unprecedented scale. It was spread to public and private finances quickly, it affected several markets simultaneously. A report from the International Monetary Fund (IMF) World Economic Outlook, 2016, which is compiled by the International Monetary Fund's (IMF) World Economic Outlook. The recession caused by the COVID-19 pandemic is the deepest since 1945 in terms of output losses of 7 percent compared to the 3,4% growth forecast of the US IMF for 2016. The Prospects of 2020 showed that the government and central banks have responded to unprecedented measures in order to mitigate the social and economic impact of COVID-19, including in low-income countries (Prospects, 2020).

This study has been published in 2020. It is discussed the impact of the COVID-19 pandemic on public debt sustainability (Stiglitz & Rashid, 2020), on socioeconomic inequality (Andrieș et al., 2021), and on financial stability as well as social inequality (Andrieș et al., 2021). Beck and Kale discussed the exposure of U.S. banks to the COVID-19 pandemic and its capability for supporting the US economic development through helping government programs, showing that state subsidies play an important role in decisions about lending (Beck & Keil, 2021). Also, the study of government measures during COVID-19 and its macroeconomic consequences was carried out in an area of research that focuses on designing government measures for the pandemic and their macroeconomic consequences. The effectiveness of government responses depends on the conditions of implementation, and who bore their economic costs.

At the start of coronavirus pandemic, inflows from liquidity depositors and depositors, along with high bank capital before the virus attack, helped banks to cope with an upcoming surge in demand for cash. In contrast, lending to large borrowers declined in volume due to global economic problems. Among other reasons, data show that banks around the world are tightening terms of lending, citing uncertain economic prospects, worsening industry problems and reduced risk tolerance. Banks and other nonbank financial companies have not used the credit stimulus program, even though stocks of banks are performing poorly in home markets.

A research question for scientists and policymakers is the understanding of how the COVID-19 coronavirus pandemic affects institutions and finances, as well as the real economic system. The banking system is well-functioning, it helps to accelerate economic growth through the provision of liquidity in general and the distribution of credit in particular. However, the question of whether banks change their lending behavior in response to uncertainty and risk is an important question for policymakers. The following article provides new information on banks' lending decisions as they face considerable uncertainty during a pandemic. Also, the pandemic as a natural experiment to assess its causal impact on bank credit supply in Russia. In particular, we use the pandemic for an experiment to assess its causal impact on bank credit production in the context of a large country such as Russia.

The lending behavior of Russian banks in the case of the coronary crisis is not unequivocal. In the domestic scientific literature, there is no unequivocal opinion on the extent of the impact of the coronavirus crisis on bank lending and its consequences. The pandemic did not have a significant impact

on the lending to the country, compared with the economic crisis of 2014- 2015, and 2008-2009 (Fedorova, 2021; Tavbulatova & Tashtamirov, 2021).

In the context of consumer lending, it is noted that under the conditions of lockdowns, the population shifted to a saving behavior model, which had a negative impact on consumer behavior, and, accordingly, caused little damage to the banking system in the area of retail lending (Panova & Mamedova, 2021; Shevtsov et al., 2021).

The most vulnerable sector of bank lending was small and medium businesses, whose credit indebtedness decreased significantly compared to other groups of borrowers (Kurtumerov & Gachkov, 2021). This circumstance is caused by the fact that small businesses are represented directly by those sectors of the economy, which suffered most from the introduction of anti-pandemic measures (Humphries et al., 2020).

2. Problem Statement

Lending to the economy is crucial for sustainable economic growth, but with each new crisis, there are new determinants affecting the nature and quality of bank lending. The COVID-19 pandemic has introduced a new fundamental factor in the economic behavior of entities, with potential implications for bank lending. It is therefore important to understand the impact of key COVID-19 indicators on bank lending in the Russian economy.

3. Research Questions

The following research issues are brought up by this study: What is the relationship between COVID-19 morbidity, mortality and convalescence rates, and the dynamics of bank lending in the Russian economy? How does the COVID-19 pandemic impact the nature and quality of bank lending in the Russian economy?

4. Purpose of the Study

The purpose of this study is to examine the impact of the COVID-19 pandemic on bank lending in the Russian economy. Specifically, the study aims to identify the degree of influence of COVID-19 crisis indicators such as morbidity, mortality, and convalescence rates on the dynamics of bank lending in Russia. The study will use various analytical methods such as comparative-comparative analysis, dynamics analysis, structural analysis, and econometric methods to investigate the relationship between COVID-19 indicators and bank lending. This research will provide insights for policymakers and practitioners in the banking sector to better understand the impact of the pandemic on lending and potentially develop strategies to mitigate negative effects (Demirgüç-Kunt et al., 2021).

5. Research Methods

Literature review showed that mainly conclusions about the relationship between the COVID-19 pandemic and bank lending are based on the following scientific methods - logical generalization and

comparative analysis. According to the author, the most preferable approach in this case is the method of correlation relationships, which allows to determine in detail the strength of the relationship between the parameters of the analyzed model.

The theory of the financial system recognizes uncertainty and risk as important factors in the willingness of investors and financial intermediaries to provide capital. The economic uncertainty will have a negative impact on the demand for bank credit. This is what we expect from our analysis. A shock from COVID-19 provides a good context for assessing the impact of an increased risk on bank lending, such as whether banks act as liquidity providers even as consumers and firm companies face economic problems. To create a plausible exogenous variability in this risk, our identifying method is used different times of pandemic shocks at the country level (i.e: waves of death and health).

Weakening of bank lending can be caused by the decrease in credit or decline in the demand for money. "To contain the spread of the disease, governments take lockdown measure that inadvertently push firms and consumers into solvency and liquidity crises." (Bartik et al., 2020, p. 4). It is worth noting that the pandemic has caused a sudden and exogenous surge in borrower credit risk around the world. The beginning of the COVID-19 pandemic in Russia can be attributed to February 2020, which determines the time interval for analysis until January 2022.

The analytical part of the study is based on two stages: (1) the construction of the dynamics of COVID-19 and bank lending indicators. Since the parameters of the coronary crisis in the statistical data are presented on a daily basis, the author made calculations to convert the data into a monthly format in order to reconcile with the data on bank lending, which is presented on a monthly basis. (2) conducting a correlation analysis to identify the degree of interdependence between the variables of coronary crisis and bank lending using the following Pearson's pair correlation formula:

$$r = \frac{\sum_{i=1}^{n}(x-\check{x})(y-\check{y})}{\sqrt{\sum_{i=1}^{n}(x-\check{x})^2(y-\check{y})^2}} \tag{1}$$

Where, r is the correlation coefficient;

x - factor trait;

y - resultant variable.

Coronacrisis indicators were used as factor attributes; in turn, the resulting variable is the volume of loans issued by banks by month.

The sources of data were the official website of the Bank of Russia on the indicator of the volume of loans issued by banks in Russia per month and operative data on coronavirus from the portal stopcoronavirus.rf.

6. Findings

Let us consider the dynamics of the monthly volume of loans issued in Russia according to three parameters: lending to legal entities, individuals and the total volume of the loan portfolio of the country's banking system.
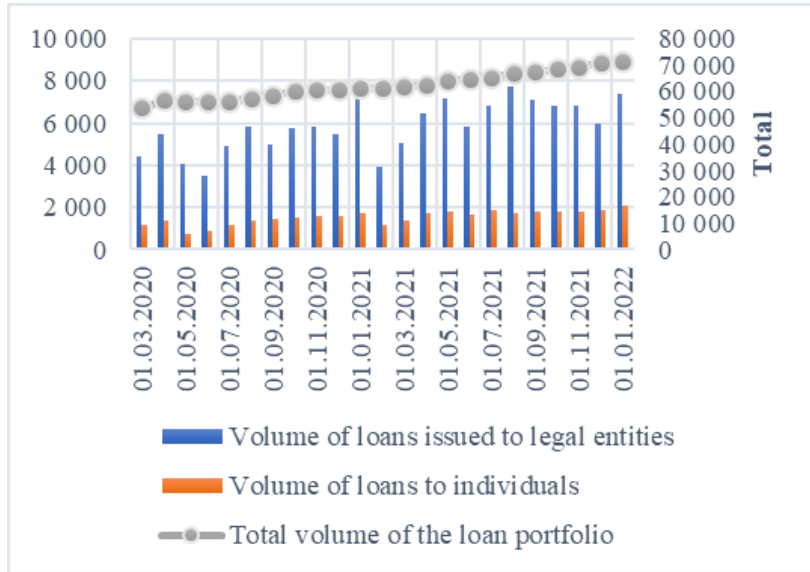
Figure 1. Dynamics of the volume of loans in Russia by month for the period February 2020 - December 2021, billion rubles

As can be seen from Figure 1, there is a non-linear dynamic in the volume of loans in some months of the period under review. Especially volatile indicator is the lending to legal entities. The credit activity of banks decreases in May-June 2020, February, June and December 2021, which indicates the presence of seasonal factors, determining the change in the dynamics and volume of loans. However, for the seasonality factor the principle of conjugacy of time intervals should be observed. In this case, the periods of recessions do not coincide between the years under consideration.
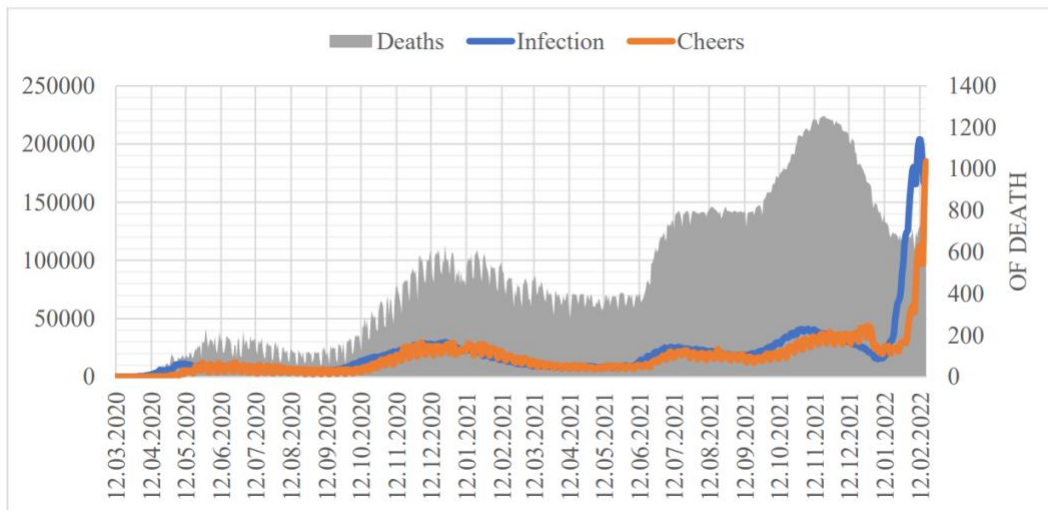

Figure 2. Dynamics of daily pandemic COVID-19 rates in Russia for the period March 2020 to December 2021, people

Graphically (figure 2), the dynamics of COVID-19 infections and mortality coincide with the indicators of bank lending for the same period. At the moments of increasing values of morbidity and mortality, a decrease in the volume of issued loans is traced. However, the statistics for coronavirus indicators have daily values, which makes it impossible to compare with monthly lending values.

To reveal the degree of correlation between coronary crisis and bank lending through econometric analysis methods, calculations were performed to determine the monthly values of morbidity, convalescence, and deaths from COVID-19.
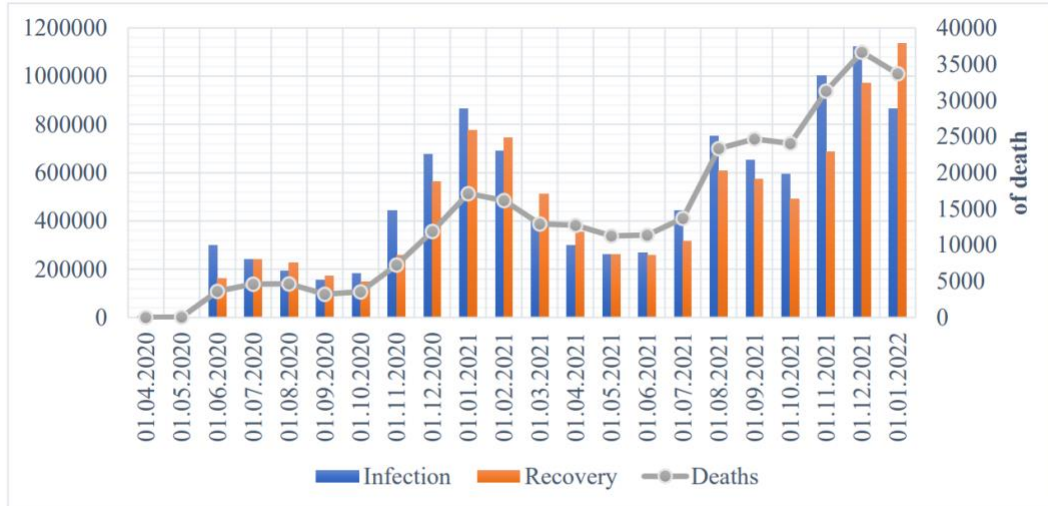

Figure 3. Dynamics of monthly pandemic COVID-19 indicators in Russia for the period March 2020 - December 2021, people

Over the period under review, there are three spikes in the analyzed indicators from Figure 3, which are relatively consistent with the values from Figure 1 for bank lending. The volatilities of Figure 3 are especially similar directly to the indicator of lending to individuals.
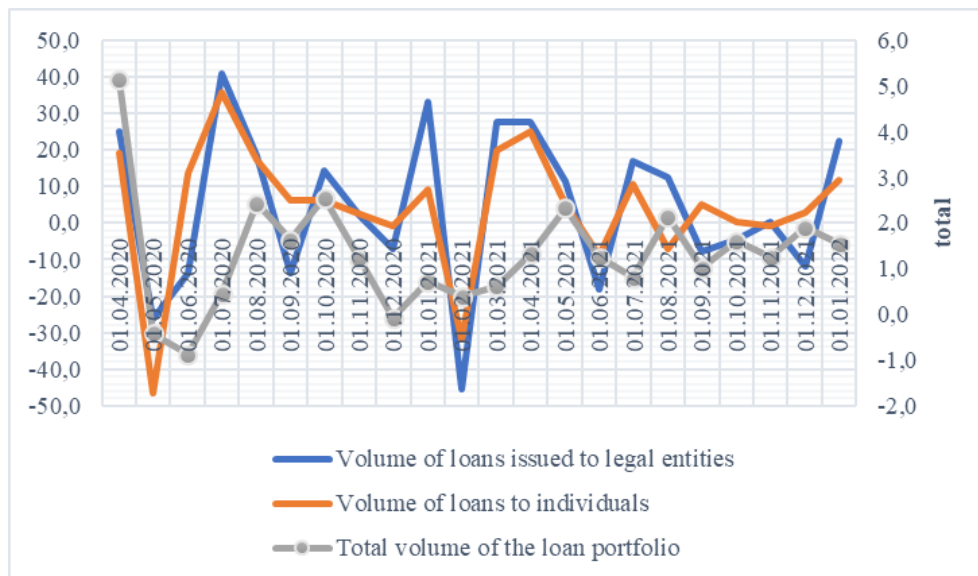

Figure 4. Quantitative dynamics of bank lending in Russia

Temporal fluctuations in the volume of loans to businesses and individuals in Russia are highly significant, as evidenced by the data in Figure 4, which shows the rates of growth/decline of the considered values. It is important to note that the peaks of positive dynamics of bank lending from the

middle of the pandemic period (Q1, Q2 2021) have lower values, compared with the initial time interval. In particular, at the beginning of July 2020 and the beginning of January 2021, the growth peaks of bank corporate lending and the total volume of the loan portfolio were higher than in the subsequent months of the period under consideration. Obviously, the coronary crisis had a negative impact on the recovery capacity of bank lending, whose monthly growth rate slowed down.

Bank lending is influenced by many factors, the nature of the emergence of which is quite diverse. In most cases, the macroeconomic situation in the country and the course of monetary regulation have an impact. In particular, the tightening of monetary policy in the period of high inflation causes the increase of the key rate by the Bank of Russia, which negatively affects the consumer credit demand from the population due to the appreciation of credit resources. The emergence of a new component that plays a significant role in the economic behavior of the population, such as the coronary crisis, also requires consideration in the assessment of ongoing trends.

Using Pearson's pair correlation formulas, the factor matrices in Table 1 are constructed.

Table 1. Pearson's matrix of pairwise correlations

	Volume of loans issued to legal entities	Volume of loans to individuals	Total volume of the loan portfolio	Infection	Cheers	Deaths
Volume of loans issued to legal entities	1	0,897	0,711	0,455	0,445	0,597
Volume of loans to individuals	0,897	1	0,831	0,541	0,569	0,699
Total volume of the loan portfolio	0,711	0,831	1	0,757	0,755	0,935
Infection	0,455	0,541	0,757	1	0,923	0,910
Cheers	0,445	0,569	0,755	0,923	1	0,897
Deaths	0,597	0,699	0,935	0,910	0,897	1

Despite the similarity in the dynamics of COVID-19 pandemic and bank lending characteristics, the correlation analysis revealed no significant relationship between all the assessed attributes. The number of monthly coronavirus infections does not have a strong relationship with business and community lending, as shown in Table 1, given the values of the Cheddock scale. Similarly, the number of cures does not significantly affect bank lending to businesses and individuals. A more significant factor in the change in bank lending is coronavirus mortality. In almost 60% of the quantitative volatility of loans to legal entities is caused by the influence of deaths from the coronavirus COVID-19. In 70% of cases such dependence is traced in lending to the population. The highest degree of correlation between the coronary crisis factors under consideration and bank lending accounts for deaths from COVID-19 and changes in the total volume of the loan portfolio of the Russian banking system - 93%.

7. Conclusion

In terms of the resulting indicator - the total volume of the loan portfolio of the banking system, there is a strong relationship with all factors, in contrast to the lending of organizations and the population.

In the global bank lending market, the ongoing COVID-19 pandemic is affecting banks' lending patterns. In response to the shock of the pandemic, Bank credit growth is declining in response to the decline in bank credit growth. The rate of banks' credit. According to the economic analysis, the post-COVID era is associated with less monthly credit growth in the sample. For example, a large part of the decline in bank credit growth depends on an intense pandemic in the country. The reason for this is increased mortality, the result of that is less monthly bank loan development and more lower monthly bankloan volumes in total banks. According to bank and country factors, the impact of the pandemic on credit growth depends on banks and countries. Banks' financial conditions are important determinants of the bank's behavior during the pandemic. At the moment, lending was most affected by government-supported banks and bank with lower return on assets.

References

Andrieș, A. M., Ongena, S., & Sprincean, N. (2021). The COVID-19 Pandemic and Sovereign Bond Risk. *The North American Journal of Economics and Finance, 58*, 101527. https://doi.org/10.1016/j.najef.2021.101527

Bartik, A. W., Bertrand, M., Cullen, Z., Glaeser, E. L., Luca, M., & Stanton, C. (2020). The impact of COVID-19 on small business outcomes and expectations. *Proceedings of the National Academy of Sciences, 117*(30), 17656-17666. https://doi.org/10.1073/pnas.2006991117

Beck, T., & Keil, J. (2021). Are banks catching corona? Effects of COVID on lending in the US 2021. *CEPR Discussion Paper, DP15869*. https://ssrn.com/abstract=3805284

Demirgüç-Kunt, A., Pedraza, A., & Ruiz-Ortega, C. (2021). Banking sector performance during the COVID-19 crisis. *Journal of Banking & Finance, 133*, 106305. https://doi.org/10.1016/j.jbankfin.2021.106305

Fedorova, A. Y. (2021). Current state of bank lending in russia. *Socioeconomic development of Russia and regions in the figures of statistics: Proceedings of the VII International Scientific and Practical Conference*, 239-245. https://www.elibrary.ru/item.asp?id=44594864

Humphries, J. E., Neilson, C., & Ulyssea, G. (2020). *The evolving impacts of Covid19 on small businesses since the cares act.* NYU Stern School of Business. http://doi.org/10.2139/ssrn.3584745

International Monetary Fund. (2016, April 12). *World Economic Outlook: Too Slow for Too Long.* https://www.imf.org/en/Publications/WEO/Issues/2016/12/31/World-Economic-Outlook-April-2016-Too-Slow-for-Too-Long-43653

Kurtumerov, N. R., & Gachkov, N. S. (2021). Changing credit policy of Russian banks under pandemic conditions. *National economic systems in the context of the global economic space formation: Collection of scientific papers* (pp. 392-396). Publishing house Typography Arial. https://www.elibrary.ru/item.asp?id=45660854

Panova, A. Y., & Mamedova, A. R. (2021). Consumer lending in Russia during the pandemic. *Economic Research and Development, 9*, 52-59. https://doi.org/10.54092/25420208_2021_9_52

Prospects, G. E. (2020). *Pandemic, Recession: The Global Economy in Crisis*. World Bank Group. https://doi.org/10.1596/978-1-4648-1553-9_ch1

Shevtsov, A. O., Posnaya, E. A., & Zima, Y. A. (2021). Regression of consumer lending in the Russian Federation during the pandemic COVID-19. *Financial Research, 1*(70), 44-52. https://www.elibrary.ru/item.asp?id=47149092

Stiglitz, J., & Rashid, H. (2020). Averting Catastrophic Debt Crises in Developing Countries. *CEPR Policy Insight, 104*. https://mronline.org/wp-content/uploads/2021/03/PolicyInsight104.pdf

Tavbulatova, Z. K., & Tashtamirov, M. R. (2021). Stability of the world banking system under the COVID-19 coronary crisis. *Scientific Notes of the International Banking Institute, 1*(35), 140-155. https://www.elibrary.ru/item.asp?id=45613979