

EMPIRICAL ANALYSIS OF INTERBANK COMPETITION AND DIRECTIONS FOR ITS IMPROVEMENT

George Abuselidze¹ Salome Dumbadze²

Received: 16.03.2023, Accepted: 13.04.2023

Abstract

The current economic processes in Georgia had a significant impact on the banking market. In the dynamics of certain period, a number of commercial banks faced the problem of financial stability, to eliminate which it was necessary to mobilize additional monetary resources. It is important to analyze the difficult financial and economic situation in the country, which to a certain extent has caused significant changes in the banking sector. This situation has put the creation of a competitive environment on the agenda in the banking market as an important actor for maintaining the stability and economic sustainability of the financial sector. It should be noted that the current situation in the banking market was somewhat positively reflected, as national banks began to provide a competitive environment. The existence of a healthy competitive environment is ultimately a prerequisite for the development of a developed and financially sustainable competitive banking sector. The paper discusses the data reflected in the banking market over the last 5 years, on the basis of which we conducted an in-depth study and studied the interbank competitive environment. We have calculated interbank competition by means of relevant indices, and suggestions for its improvement are offered in the paper.

Keywords: interbank competition; economic shocks; concentration ratio

JEL Codes: E42; E43; E44; E58

1. Introduction

In modern processes, attention is primarily given to the level of competition in the banking market and the regulation of its activities for the socio-economic development/improvement of each country. Assessment of the level of interbank competition and determination of its direction is a topical issue worldwide. An important issue is the empirical analysis of interbank competition and the delineation of the direction that leads to the directions that exist today and will be determined in the future perspective. The high interest of the society and the country in interbank competition is due to social/economic factors.

¹Batumi Shota Rustaveli State University, Doctor of Economics, Professor; e-mail: george.abuselidze@bsu.edu.ge, ORCID ID: 0000-0002-5834-1233

²Batumi Shota Rustaveli State University, e-mail: Salomedumbadze471@gmail.com, ORCID ID: 0000-0001-5006-3964

The topic will answer the following questions: What is the current situation of commercial banks in Georgia? On what scale does the rate of competition between commercial banks vary? What are the difficulties in this direction? What should be done to solve these difficulties? What are the prospects for commercial banks in Georgia?

The aim of the paper is to assess the level of competition in the Georgian banking market, to consider how complete the mentioned field is and what can be done in the future for the development of the mentioned field.

To achieve the goal of the paper, the following tasks were defined:

- Discussion of the field to activity of commercial banks.
- Determination of directions of existing commercial banks in the banking market of Georgia.
- Empirical analysis of the level of competition of commercial banks and determination of the main problem.
- Determining the direction of development of commercial banks.

The subject of the research is the empirical analysis of commercial banks and the determination of development features. The object of the research is the direction of assessment and improvement of the level if inter-bank competition in the banking market of Georgia.

Scientific works published by Georgian and foreign scientist-economists (Astuti & Saputra, 2019; Bolt & Humphrey, 2010; Dutta & Saha, 2021; Marius Andrieș & Căpraru, 2012; Phan et al., 2019; Pruteanu-Podpiera et al., 2016; Saif-Alyousfi et al., 2020; Abuselidze & Kizinidze, 2019; Gegenava, 2018; Kovzanadze & Kontridze, 2014; Namchavadze, 2016) and the information obtained from electronic sources and manuals serve as the methodological basis of the work research. Logical, analytical and statistical data collection methods are used in the research.

The official websites of public institutions, non-governmental organizations and commercial banks, official data of the National Bank of Georgia and the National Statistics Service were used in the process of developing the paper.

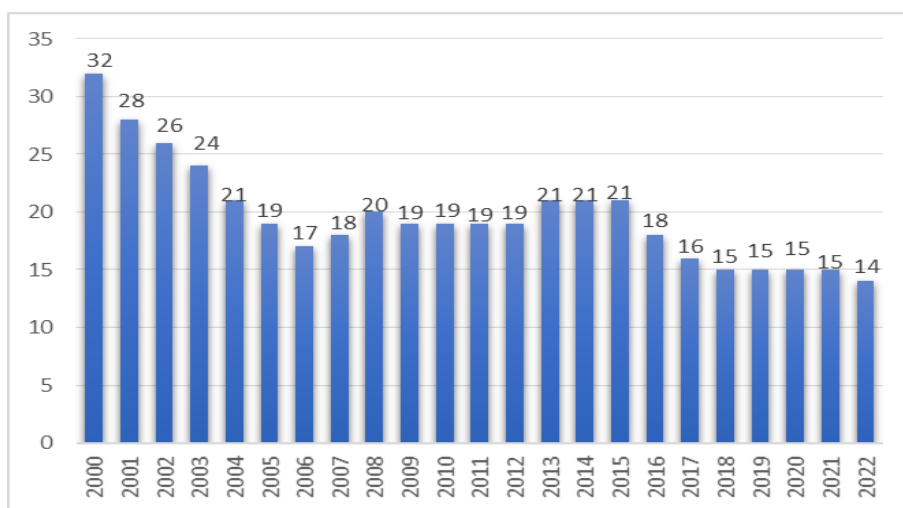
According to the Astuti and Saputra (2019), banks in the ASEAN-5 nations have been shown to be generally efficient and competitive, and they may be categorized as monopolistic, where each bank competes by diversifying its goods or market niches. Bolt and Humphrey (2010), using a new method, investigate the relationship between competition and efficiency, subtly measuring it at the efficiency boundary, while the unexplained share of income subtly reflects the degree of competition. Dutta and Saha (2021) have also studied the effects of institutional regulation and levels of corruption on banking stability and digital financial services in addition to researching the effects of economic policy uncertainty on these topics. A few recent studies have highlighted the significance of institutional regulation and corruption level on the banking stability of developed countries, even though Dutta

and Saha (2021) are unaware of any specific study on the relationship between institutional regulation, corruption level, and the growth of digital financial services.

2. Some aspects of the formation of commercial banks in Georgia

The role of commercial banks plays a great role in the development of Georgian economy and it is a unique intermediary institution. Based on the above, it is important to determine the main indicators of the Georgian banking market in the direction of the competition of commercial banks. In order to outline the main reasons for the increase in the number of commercial banks since the 2000s and the way its dynamics have changed in the modern period as a result of the implementation of various measures by the National Bank of Georgia, it is important to evaluate/review the mentioned data in the dynamics of at least 20 years (Fig.1).

Figure 1. Number of commercial banks operating in Georgia



Source: Compiled by the authors, based on the National Bank of Georgia

The subsequent stages of the considered period are characterized by important aspects of the development of the banking system, which are carried out with the support of the international Monetary Fund, the World Bank and other international institutions, which directly led to the literal halving of commercial banks. Since 2000, the regulatory legal base of the monetary and credit system is being perfected, and banks are switching to the accrual method in accordance with international accounting standards.

It is important to focus on determining the importance of interbank competition and evaluating its structure. It is important to determine the impact of interbank competition on the economy, financial stability and the welfare of the population.

That's why, during the definition of inter-bank competition, it is necessary to draw appropriate conclusions based on the abovementioned statistical data.

3. Empirical analysis of the financial stability of the commercial banks of Georgia

First of all, it should be noted that the issue of financial stability is a priority issue for the development of the country's economy, therefore, it is noted that financial stability, its analysis is the main task for central banks and regulatory institutions of the financial sector, as well as for commercial banks. The issue of financial stability, as it turns out, is definitely a factor in the development of the financial sector and the deepening of financial markets. When financial intermediaries function properly in the country, there are no problems in attracting deposits and granting loans.

An essential component of the banking industry's efficiency is the level of competition. An essential long-term driver of economic growth is the competitiveness in the banking industry, as well as the resilience and sustainability of the financial system (Abuselidze, 2021; Abuselidze & Sharabidze, 2021).

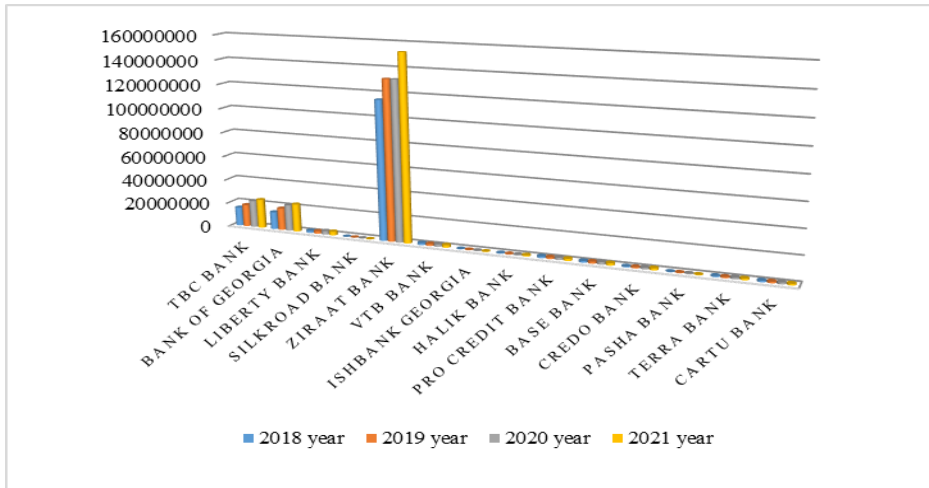
The stability of the banking system mainly implies such a financial and economic issue as "The system of financial relations must be able to maintain its effectiveness under conditions of shock and stress". The model we have mentioned is a chain network, which includes all the licensed banks in Georgia, but all this does not exclude the possibility that any individual commercial bank and financial institution will face financial difficulties.

Along with the above, in order to adequately assess the financial sustainability of commercial banks, it is necessary to outline the impact of COVID-19 and the main measures that the National Bank of Georgia has developed to reduce the pressure. Under the conditions of the pandemic, SEB implemented the following important measures: unhindered supply of liquid financial funds to various sectors of the economy, expansion of the international Monetary Fund program, development of a temporary supervisory plan and implementation of a new mechanism of currency interventions. On the basis of this, we will draw, evaluate and analyze various financial indicators, which will allow us to evaluate the financial situation of commercial banks (Fig. 2).

As we can see from (Fig. 2), the leading banks from 2018 until now are: TBC Bank, the Bank of Georgia, Liberty Bank and the Ziraat Bank branch of Turkish Bank. The index of the mentioned banks is characterized by the increasing trend of the number of assets, which in turn indicates that the mentioned banks will not face financial and liquidity problems in the long term. Based on the given statistical data, the amount of assets in relation to TBC Bank in 2021 compared to the previous year increased by 1,640,550 thousand GEL, in relation to the Bank of Georgia in 2021, the amount of assets increased by 1,392,906 thousand GEL, in relation to Liberty Bank

in 2021, the amount of assets increased by 122,744 thousand GEL and in Ziraat Bank in this case, the growth rate of assets reached 21,258,306 GEL.

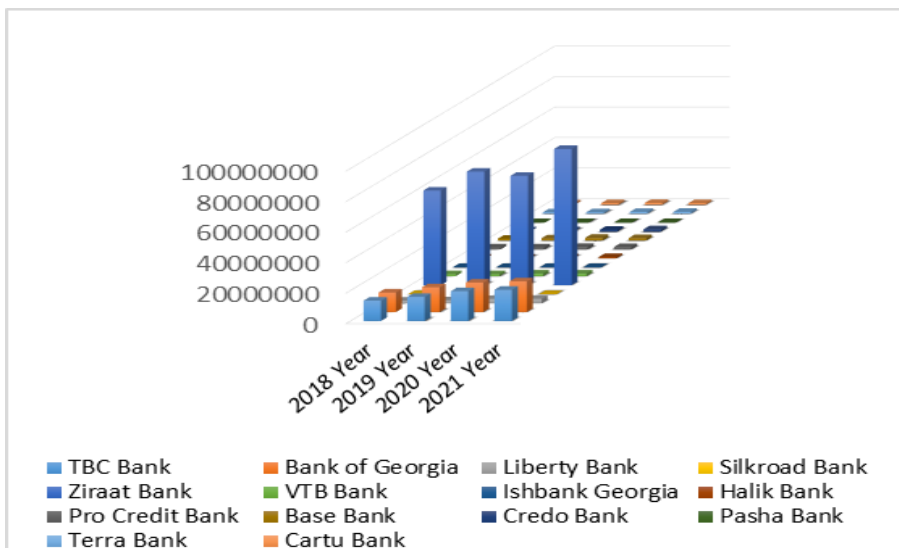
Figure 2. Index of assets of commercial banks operating in Georgia



Source: Compiled by the authors, based on the National Bank of Georgia

Along with the consideration of the assets of commercial banks, it is necessary to display the statistical data of the liabilities, on the basis of which we should process the information and make relevant conclusions (Fig. 3)

Figure 3. Commitment rate of commercial banks operating in Georgia

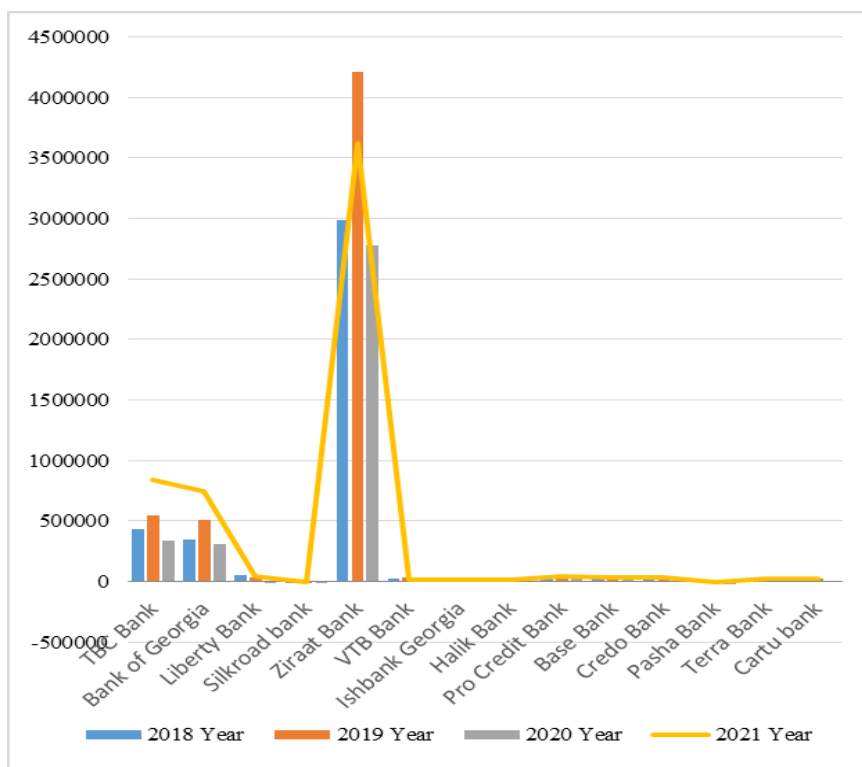


Source: Compiled by the authors, based on the National Bank of Georgia

Figure 3 shows the index of commercial bank's liabilities, where TBC Bank, the Bank of Georgia, Liberty Bank and Ziraat Bank still dominate with the highest data. Let's summarize the share of increase in liabilities on the example of the mentioned banks, but it should also be noted that with each commercial bank there is an increasing trend in relation to liabilities. The 4 banks we selected will not face any problem, if the liabilities are increasing because they have a much higher amount of asset growth, which cannot be said about other smaller banks, whose asset and liability growth rates are almost equal to each other. The rate of growth of TBC Bank's liabilities by 2021 compared to the previous year is 882,675 GEL, in relation to the Bank of Georgia 829,983 GEL, in relation to Liberty Bank 81,169 GEL and in relation to Ziraat Bank 17,636,734 GEL. The above-mentioned reasoning that these banks will not have a problem with liquidity, in view of the above data, is fully justified.

Based on the comparison of the statistical data discussed above, the final and important statistical information that will help us evaluate the interbank competitive environment is the image of commercial bank's profit and loss (See Fig. 4).

Figure 4. Profit and loss statement of commercial banks



Source: Compiled by the author, based on the National Bank of Georgia

Figure 4 clearly shows that most of the banks are making profit, and according to the data of 2021, this was reflected in a growing dynamic compared to the previous year. When we talk about the commercial bank's profit, it is important to note that based on the available statistical data, it is evident that there is no healthy inter-bank competition, as there are monopolistic cases on the part of several commercial banks in the credit market.

Ultimately, we can note that the majority of commercial banks are not able to position themselves in the credit market, there are 3 or 4 main banks that effectively deal with current socio-economic processes and have a corresponding annual profit. We assume that in the long term it is possible to merge at least 5 smaller banks with larger banks, since these banks have been operating at a loss for the last period.

4. Theoretical-practical aspects of assessing the level of interbank competition

Different types of indices are used to determine the level of inter-bank competition, through which specific conclusions can be made. Among the given indices, the research will use the following: Herfindahl Hirschman Index, Concentration ratio and Lerner index in order to assess and determine the level of competitiveness in the banking market.

HHI - Herfindahl Hirschman Index:

$$HHI = \sum_{j=1}^N K_j^2$$

In the given formula $(K_j)^2$ represents the market share of i-legal bank, which at the same time is calculated as follows:

$$K_j = \sum_{j=1}^n \frac{V_j}{V_m}$$

In this formula, (V_j) represents the sales volume of the bank's product, and (V_m) is the total volume of the banking market. It should be noted that after the calculation of the given index, if the mentioned data is characterized by increasing dynamics, then there is a decrease in interbank competition, and if the given index decreases, on the country, there is an increase in competition.

A variety of reasons can be proposed to explain why competition is an important factor in growing the real economy. Competition plays an important role in the banking sector, since it will definitely affect the efficiency of financial services production, the quality of financial products, the quality of innovations in the existing sector, etc.

The law of Georgia on Competition implies the level of competition both in the banking sector and in various other fields (Legislative Herald of Georgia, 2014).

According to the methodology of the Georgian Competition Agency, market concentration levels according to the Herfindahl-Hirschman index or score are determined as follows:

- ✓ Low concentration – $HHI < 1250$
- ✓ Average concentration – $1250 < HHI < 2250$
- ✓ High concentration – $HHI > 2250$

Based on the given index, we have calculated the said score, which will provide us with detailed information about inter-bank competition; the mentioned data is presented in the form of a table, which will allow easy perception of the data and drawing conclusions (See Table 1).

Table1.

	2017 Year		2018 Year		2019 Year		2020 Year		2021 Y (By Quarter)				
	Kj	Kj^2	Kj	Kj^2	Kj	Kj^2	Kj	Kj^2	Kj				Kj^2
									I	II	III	IV	
TBC Bank	36,2 8%	131 6.47	39,5 3%	156 2.80	12,0 1%	144. 25	15,5 5%	241 .80	15,2 6%	11,70 %	12,0 2%	11,88 %	655. 37
Bank of Georgia	35,4 0%	125 3.85	37,1 5%	138 0.48	17,4 6%	826. 65	14,6 9%	215 .78	11,5 8%	12,19 %	12,6 2%	12,34 %	594. 21
Liberty Bank	5,08 %	25.7 5	0,00 %	2.21	9,30 %	86.5 8	8,58 %	72. 62	27,1 3%	29,85 %	29,1 9%	29,41 %	333 9.04
Halik Bank	1,20 %	1.43	1,25 %	1.57	23,9 8%	575. 23	18,0 2%	324 .72	24,2 6%	28,19 %	24,1 0%	23,84 %	252 8.36
Cartu Bank	3,65 %	13.3 3	3,10 %	9.63	22,3 7%	500. 42	19,4 5%	377 .30	21,0 9%	24,48 %	24,1 0%	18,89 %	197 9.2
Terra Bank	2,35 %	5.53	2,47 %	6.11	22,0 1%	484. 45	18,7 2%	350 .44	22,6 9%	24,06 %	22,1 1%	21,67 %	204 9.14
Silkroad Bank	0,16 %	0.02	0,19 %	0.03	3,29 %	10.8 2	1,89 %	3.4 6	0,00 %	21%	5,25 %	14%	938. 33
ProCredit Bank	3,79 %	14.3 9	3,83 %	14.7 0	0,03 %	0.00 09	0,01 %	0.0 001	23,7 9%	27,08 %	16,0 1%	14,46 %	176 1.69
Pasha Bank	12,2 2%	149. 33	14,3 2%	205. 06	19,8 4%	393. 62	14,6 4%	214 .33	0,00 %	0,00%	0,00 %	0,00 %	8.84
Credo Bank	1,72 %	2.97	1,99 %	3.94	9,42 %	88.7 3	7,82 %	60. 15	23,4 0%	26,65 %	30,2 5%	36,42 %	350 5.24

Ish-Bank Georgia	0,67 %	0,44	0,68	0,45	20,0 5%	402. 003	15,4 8%	239 .63	15,7 1%	15,92 %	15,3 2%	14,76 %	949. 81
Zira Bank	0,26 %	0,06	0,29 %	0,08 6	8,61 %	74.1 3	6,77 %	45. 83	51,3 0%	29,50 %	22,1 6%	24,77 %	474 1.16
VTB Bank	4,38 %	19.2 1	4,22 %	17.7 9	19,6 5%	385. 12	14,3 4%	204 .64	46,0 7%	29,38 %	26,3 1%	27,39 %	442 4.05
Base Bank	3,45 %	11.9 3	3,67 %	13.4 9	23,6 5%	557. 32	18,3 6%	337 .08	0,96 %	26,20 %	19,1 5	19,13 %	141 9.9
Total volume	HHI= 2814,93		HHI= 3218,55		HHI= 4528,35		HHI= 2687,67			HHI= 28952,56			

Source: Compiled by the authors, based on the National Bank of Georgia

With respect to this index, it should be noted that when the index is increasing, the market is more concentrated. Based on the mentioned data, we can see that the data of 2019 exceeds the data of the same period last year by 1309.8, which indicates that the concentration rate in the banking sector is increasing.

In addition to the Hirschman index, we studied the level of competition in the banking market, using the concentration coefficient which has the following form:

$$CR_k = \sum_{j=1}^K q$$

The notations shown in this formula are formulated as follows:

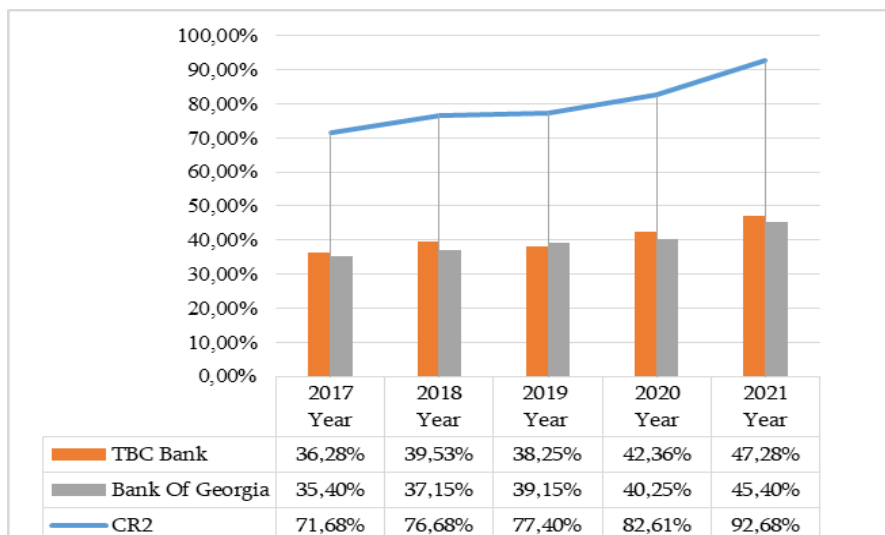
CR_k is a concentration index, which includes determining the share index of the dominant commercial banks in the credit market.

For the Q index, which represents the amount of the bank's share in the region, it is necessary to extract relevant statistical data from the platform of the National Bank of Georgia, to determine it in percentages and formulate it accordingly.

Conclusions have been drawn, based on the analysis of the results obtained using the above-mentioned index, where by the estimated data is placed in a percentage scale: if the index is less than 45%, the market is considered unconcentrated, when it comes between 45% and 70%, the market is considered lethally concentrated and when the index is above 70%, the market is considered highly concentrated.

As a result of the calculation of the index, shown in the present paper, the data has the following form (see Fig. 6).

Figure 6. Concentration index data



Source: Compiled by the authors, based on the National Bank of Georgia

As far as the concentration index is concerned, it is worth noting that the Georgian banking sector is characterized by a high concentration rate in the case of two banks (the Bank of Georgia and TBC Bank), since these two commercial banks appear in a dominant role today. These two banks will hold 72% of the total markets share by 2017, 77% by 2018, 77% by 2019, 83% by 2020 and 93% by 2021. From 2017 to 2021, the market is characterized as highly concentrated.

In order to assess the level of competition between banks, we additionally used Lerner's index, which involves determining the monopoly power of individual entities, based on the price index. The following formula is used to calculate this index:

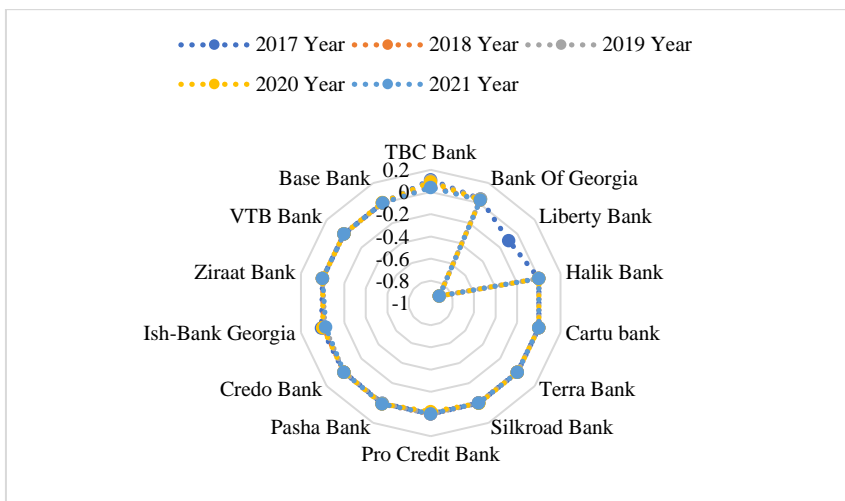
$$L = \frac{P - MC}{MC}, \text{ where}$$

The P index represents the price of a specific product or service in the relevant market, while the MC represents the marginal costs incurred by the enterprise for providing a specific product or service to the market.

In the case that the Lerner index is placed between 0 and 1, and the higher the value of this index, the greater the market participant's relative power and its ability to independently determine a lower price compared to competitors. When the market is fully monopolized, its value is equal to 1, and during perfect competition, the value is 0 or close to 0.

Statistical data was analyzed based on this index, which was then used to calculate Lerner's index, which took the following form (see Fig. 7):

Figure 7. Lerner index data



Source: Compiled by the authors, based on the National Bank of Georgia

As we have mentioned, the banking system plays an important role in the economy, because it promotes access to capital and in turn determines the optimal distribution of financial resources in different areas of the economy. This in turn will lead to the expansion of economic activity and the volume of production. With regard to the given index, it can be seen that the market is non-competitive, since figures related to 1 have been displayed.

Everything should be based on the monetary value policy of the National Bank, in the range of tasks of which an important place should be given to the formation of banking competition as a guarantee of the stability of the financial sector.

5. Conclusion and Recommendations

The topic determined that the competitive environment of the banking sector contributes to the development of the economy and financial stability, at the same time it develops and refines the legislative and normative base on competition. The stronger the banking sector is, the more developed the country's economy is, therefore it is important for the banking sector to have a competitive environment, as the issue of liquidity-growth of the economy is guaranteed. When we talk about banking competition, it is important to protect the issue of transparency of the banking sector, since this is what determines the growth of competitiveness. One of the reasons for the reduction of banking competition is the merger of small banks through wrong ways.

Based on the discussion above, we can note that the following are important conditions for ensuring healthy banking competition:

* Ensuring the creation of an institutional framework for new banking regulations, which in turn will fully integrate prudential regulations with strong competition policies.

* Preliminary procedures for the control of bank mergers should be developed, as a result of which a high level of competition in the credit market will be ensured.

* A quota of the number of non-competitive activities in relation to commercial banks should be implemented at the level of legislation.

REFERENCES

- Abuselidze, G. & Sharabidze, M. (2021). Competition in the Georgian banking sector and its impact on the credit policy of commercial banks. *MATEC Web of Conferences*, 342, 08003. DOI: 10.1051/mateconf/202134208003
- Abuselidze, G. (2021). The impact of banking competition on economic growth and financial stability: an empirical investigation. *European Journal of Sustainable Development*, 10(1), 203-220.
- Abuselidze, G. & Kizinidze, M. (2019). Influence of central bank regulations on interbank competition in association with EU. *E3S Web of Conferences*, 135, 04037. DOI: 10.1051/e3sconf/201913504037
- Astuti, U. H. W. & Saputra, P. M. A. (2019). Efficiency and competition in banking industry: case for asean-5 countries. *Scientific annals of economics and business*, 66(2), 141-152. DOI: 10.47743/saeb-2019-0011
- Bolt, W. & Humphrey, D. (2010). Bank competition efficiency in Europe: A frontier approach. *Journal of Banking & Finance*, 34(8), 1808-1817. DOI: 10.1016/j.jbankfin.2009.09.019
- Dutta, K. D. & Saha, M. (2021). Do competition and efficiency lead to bank stability? Evidence from Bangladesh, *Future Business Journal*, 7(1), 1-12. DOI: 10.1186/s43093-020-00047-4
- Gegenava, G. (2018). *Commercial banks- their importance and role in small and medium business development*. Caucasus International University. Retrieved from https://openscience.ge/bitstream/1/74/1/Giorgi%20Gegenava.pdf?fbclid=IwAR2D_nM33UNn_ODu1D3ee-56xEP-ar3HI-tWhZ0giMXDPWoBUfUdbshmZuE
- Kovzanadze, I. & Kontridze, G. (2014). *Modern banking: Theory and Practice*. Tbilisi.
- Marius Andrieș, A. & Căpraru, B. (2012). Competition and efficiency in EU27 banking systems. *Baltic Journal of Economics*, 12(1), 41-60. DOI: 10.1080/1406099X.2012.10840510
- Namchavadze, B. (2016). *How the Georgian banking system develops, a historical overview is sought*. Retrieved from https://forbes.ge/rogor-vithardebaqarthuli/?fbclid=IwAR3Aynhn62wtjNEhBTog1mpicj00Bm0BO9_0WMUGCQziVl_bAmvKyKZPiMU
- Phan, H. T., Anwar, S., Alexander, W. R. J. & Phan, H. T. M. (2019). Competition, efficiency and stability: An empirical study of East Asian commercial banks. *The North American Journal of Economics and Finance*, 50, 100990. DOI: 10.1016/j.najef.2019.100990

- Pruteanu-Podpiera, A., Weill, L. & Schobert, F. (2016). *Banking Competition and Efficiency: A Micro-Data Analysis on the Czech Banking Industry*. In: Brada, J.C., Wachtel, P. (eds) *Global Banking Crises and Emerging Markets*. Palgrave Macmillan, London, 52-74. DOI: 10.1007/978-1-137-56905-9_4
- Saif-Alyousfi, A. Y., Saha, A. & Md-Rus, R. (2020). The impact of bank competition and concentration on bank risk-taking behavior and stability: Evidence from GCC countries. *The North American Journal of Economics and Finance*, 51, 100867. DOI: 10.1016/j.najef.2018.10.015
- Legislative Herald of Georgia (2014). Low “On the approval of the rules for the classification of assets and the creation and use of reserves for possible losses by commercial banks”. Retrieved from <https://matsne.gov.ge/ka/document/view/2372714?publication=0&fbclid=IwAR3br9SkBvjKKQDchXpJa5NAO6MdtSWScGarZJZIWaYHIRBKxTS5Hi5EiIQ>
- National Bank of Georgia (2022). Annual financial statements. Retrieved from <https://nbg.gov.ge/supervision/banking-supervision>
- National bank of Georgia (2022). Annual Report of Pillar 3. Retrieved from <https://nbg.gov.ge/supervision/banking-supervision?pageKey=pilar3Annual>
- National Bank of Georgia (2022). Quarterly reporting of Pillar 3. Retrieved from <https://nbg.gov.ge/supervision/banking-supervision?pageKey=p>