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Financial Resilience of Cooperative Banks: The Polish Experience

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Abstract:

Objective: *The financial resilience of a bank is the key to its stable development and a key benchmark for the planning of its activities. Only financially resilient banks are able to perform their functions effectively, withstand crisis and, most importantly, secure the trust of their customers. The purpose of this article is to study the financial resilience of a cooperative bank drawing on the example of one of the largest and oldest banks in Poland, Poznański Bank Spółdzielczy.*
Design/Methodology/Approach: *The methods of generalization, grouping, comparison, analysis, and descriptive methods were used to analyze the activities and key indicators of financial resilience of a cooperative bank. Statistical and graphical methods were used to process the bank's data and arrange them in tables and figures. For the purposes of this study, the data from the website of Poznański Bank Spółdzielczy for 2013-2023 were used.*
Findings: *The article analyzes the key performance indicators of a cooperative bank reflecting its financial resilience. In particular, the bank's assets and its resource potential (liabilities), as well as profitability, ROI and solvency of the bank. Based on the analysis of these indicators, a conclusion about the overall assessment of the financial stability of a cooperative bank has been drawn. Over the past ten years, the changes of the key performance indicators of Poznański Bank Spółdzielczy indicates a stable development and strengthening of its position in the financial market.*
Practical Implications: *This article contributes to the body of literature on the peculiarities of the cooperative banks' operations. Besides, the study of the financial resilience of these financial institutions allows us to better understand their ability to withstand financial shocks, given their business peculiarities.*
Originality/Value: *A characteristic feature of cooperative banks is the possibility of becoming an Associated Bank member. This allows them to rely on additional funding from the Associated Bank where they need financial resources. Besides, Poznański Bank Spółdzielczy is a member of the SGB Protection System, which was created by a group of cooperative banks in Poland. This institution legally ensures the liquidity and solvency of the banks in the system and can take effective measures to limit risk and ensure the resilience of the cooperative bank. Such an internal structure of supervision over the operations of*

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cooperative banks is a guarantee of stability and resilience of their operation and allows for faster prevention of the impact of negative factors.

Keywords: *Cooperative bank, financial resilience, bank's stability, bank's assets, liquidity, solvency.*

JEL Code: *G21, O16.*

Paper type: *Research article.*

1. Introduction

In recent years, the operations of cooperative banks have been growing and have a significant impact on financial markets. These financial institutions have specific features that distinguish them from classical commercial banks. First and foremost, they are area-bound and invest in the development of local communities, are close to their customers and focus on their needs, are flexible and adaptable to a changing environment, provide financial support to local businesses, and are focused on solving social and environmental problems.

According to the European Association of Co-operative Banks, at the end of 2024, there were 2,400 European cooperative banks and 3,600 branches, 90 million members and 730,000 employees. The average market share of these financial institutions in Europe is about 20%.

The largest number of customers is reported by cooperative banks in France (over 120 million customers), Germany (over 30 million customers), the United Kingdom (over 26 million customers) and Spain (over 10 million customers). The shares of loans and deposits of cooperative banks in the domestic financial market are the largest in Finland, Austria, France, and the Netherlands.

The peculiarities of operation and development of cooperative banks have attracted the attention of many researchers. In their studies, they compare models of financial cooperatives (Chronopoulos, Sobiech, and Wilson, 2021; Colvin and McLaughlin, 2014; Agostino, Ruberto, and Trivieri, 2023), analyze the features of cooperative banks (Sfar and Ben Ouda, 2016; McKillop, French, Quinn, Sobiech, and Wilson, 2020; Clark, Salvatore Mare, and Radić, 2018), study their role in financing small and medium-sized businesses (Lang, Signore, and Gvetadze, 2016; Wilson, 2020); and assess the impact of the financial crisis on the activities of cooperative banks (Fiordelisi and Mare, 2013; Becchetti, Ciciretti, and Paolantonio, 2016; Henselmann, Ditter, and Lupp, 2016; Migliorelli, 2018; Zedda, Modina, and Gallucci, 2024).

At the same time, the publications on the financial resilience of cooperative banks are rather scarce. Only financially resilient banks are able to perform their functions effectively, withstand crisis and, most importantly, secure the trust of their customers. A decrease or increase in the financial resilience, as a combination of financial performance indicators, in modern conditions can both bring a cooperative bank out of the financial market and provide it with significant competitive advantages (Thalassinos *et al.*, 2023; Grima and Thalassinos (Eds.), 2018)

The purpose of this article is to study the financial resilience of a cooperative bank drawing on the example of one of the largest and oldest banks in Poland, Poznański Bank Spółdzielczy.

The methods of generalization, grouping, comparison, analysis, and descriptive methods were used to analyze the activities and key indicators of financial resilience of a cooperative bank. Statistical and graphical methods were used to process the bank's data and arrange them in tables and figures. For the purposes of this study, the data from the website of Poznański Bank Spółdzielczy for 2013-2023 were used.

2. Literature Review

In research papers on the resilience and stability of cooperative banks, researchers often compare this type of financial institution with other types. In particular, Hesse and Čihák (2007), having analyzed the role of cooperative banks in financial resilience, conclude that cooperative banks are more resilient than commercial banks. The researchers note that this finding is due to the lower volatility of the cooperative banks' returns, which more than offsets their lower profitability and capitalization. This is most likely due to cooperative banks' ability to use customer surplus as a cushion in weaker periods.

Groeneveld and De Vries (2009) also investigate the impact of the credit crisis on cooperative banks compared to commercial banks. The authors note that tentative comparisons with commercial banks on the basis of key financial figures and simple measures of banking stability indicate a beneficial influence of co-operative banks on the stability of national financial systems. Similar findings were confirmed by Diaconu and Danea (2014), who compared the impact of the financial crisis on the resilience of cooperative and commercial banks in Romania.

Comparing efficiency between cooperative, savings, and commercial banks in Europe, Mäkinen and Jones (2015) also conclude that average inefficiencies differ by ownership type and are lower for cooperative banks vs commercial and savings banks.

The study by Ayadi, Challita, and Cucinelli (2023) examines the relationship between bank business models (BBMs) and the cost and profit efficiency of cooperative banks from fifteen European countries over the period 2010-2020. The authors note that less efficient cooperative banks in terms of costs and profits can improve their efficiency by changing their banking business model.

The article by Barra, Papaccio, and Ruggiero (2025) examines the difference between cooperative and non-cooperative banks in Italy in terms of managerial efficiency and technological inefficiency. The researchers also conclude that cooperative banks show better performance indicators.

Jiménez-Hernández, Picazo-Tadeo, and Sáez-Fernández (2018) assess the technical efficiency of non-performing loan (NPL) management in the banking industry of Latin America and the Caribbean (LAC). The key finding of the study shows that the technology used by cooperative banks to manage NPLs is more efficient than that employed by commercial banks.

Fiordelisi and Mare (2014) study competition and financial resilience in European cooperative banks. The authors conclude that higher competition and increased homogeneity in the cooperative banking sector have a positive impact on the resilience and reliability of these banks.

3. Research Results and Discussion

The financial resilience of a bank is a comprehensive indicator proving the bank's ability to perform its functions with minimal risk, while maintaining high solvency, reliability and liquidity (Jędrzejowska-Schiffauer *et al.,* 2019).

The bank's resilience primarily indicates the ability to attract financial resources required for its operations, as well as to assume its obligations, withstand the impact of adverse factors and ensure profitability at the level required for its normal operation in the market. Financial resilience of the bank and its stable development indicate not only its effective functioning, but also the confidence of economic agents (customers, investors, depositors).

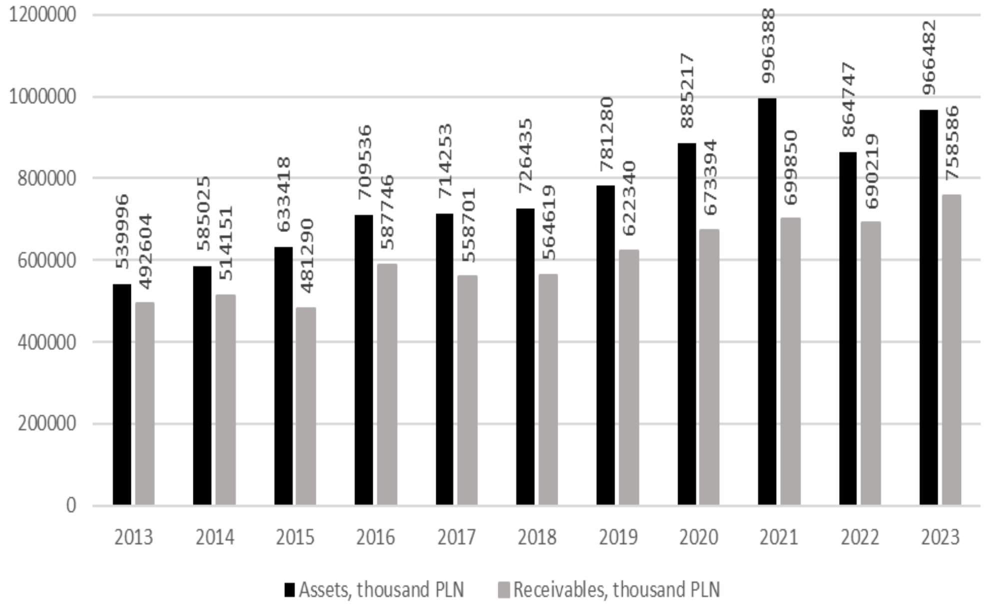
There is no single system of indicators that would characterize a bank's financial resilience. Researchers use different methods and approaches to assess it. Constantinescu and Constantinescu (2013) and Diaconu and Oanea (2015) note that financial stability can be seen as cooperative banks' ability to efficiently allocate resources in space and time and to assess and manage financial risk through their own self-revising mechanisms.

Taking the above into account, we believe that financial resilience of a cooperative bank requires a comprehensive approach. This means that, first of all, it is required to analyze the bank's assets and its resource potential (liabilities), as well as the bank's profitability, ROI and solvency. The analysis of these indicators as they change will allow making an overall assessment of the financial resilience of a cooperative bank and trace its development trend, as well as identify bottlenecks and operating threats (Velinov *et al.,* 2023).

The value of Poznański Bank Spółdzielczy's assets is generally increasing from year to year. During the period under study, this value increased significantly, evidencing the bank's strong position in the financial market (Figure 1). In 2013-2023, the assets of the financial institution almost doubled, from PLN 539,996,000 to PLN 966,482,000.

This growth was due to the increase in the value of the bank's receivables. In the analyzed period, the value of receivables increased from PLN 492,604 thousand to PLN 758,586 thousand. This trend is positive and indicates the development of the bank's activities in the banking services market.

Figure 1. *Assets and receivables of Poznański Bank Spółdzielczy in 2013-2023*



Source: *Calculated by authors based on the bank's balance sheet data for 2013-2023.*

At the end of 2023, the non-financial sector, i.e. the sector of enterprises and individuals, had the largest share in the bank's assets, accounting for almost 60% (Table 1). The share of financial sector receivables in the period under study decreased from 28.89% to 19.39%.

The share of public sector receivables in the period under study was also very low. Therefore, the bank's activities are focused on lending to the business and household sectors.

Table 1. *Structure of accounts receivable of Poznański Bank Spółdzielczy in 2013-2023*

Year	Receivables from the financial sector		Receivables from the non-financial sector		Receivables from the public sector	
	thousand PLN	***% in assets***	***thousand PLN***	***% in assets***	***thousand PLN***	***% in assets***
2013	156027	28.89	332328	61,54	4249	0,01
2014	158934	27.17	351275	60,04	3942	0,01
2015	106795	16.86	371872	58,71	2623	0,01
2016	203252	28.65	382761	53,95	1733	0,00
2017	156439	21.90	401269	56,18	993	0,00
2018	159891	22.01	404461	55,68	267	0,00
2019	219447	28.09	402714	51,55	179	0,00
2020	255695	28.89	417588	47,17	111	0,00
2021	226532	22.74	473272	47,50	46	0,00
2022	184888	21.38	505274	58,43	57	0,00
2023	187416	19.39	571039	59,08	131	0,00

Source: *Calculated by authors based on the bank's balance sheet data for 2013-2023.*

In order to carry out active operations, a bank needs to have financial resources, which are liabilities. Bank's liabilities include equity and commitments and perform several important functions to ensure the bank's resilience.

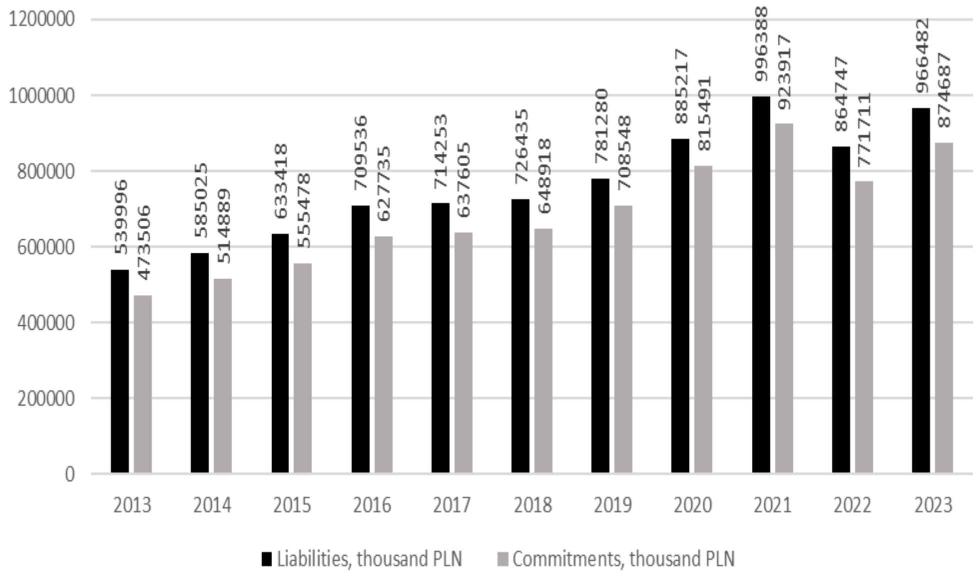
First, liabilities are a source of funding for banking activities aimed at generating profit. Second, they are one of the key factors of a bank's liquidity. Thirdly, bank's equity is used to finance potential losses, which ensures the bank's operation and reduces the risk of bankruptcy. Fourth, by setting the minimum amount of bank's equity, supervisors influence the bank's operations.

In particular, the solvency ratio is set to prevent banks from excessive minimization of their equity in order to maximize their income, reduce the risk of bankruptcy, and enhance the protection of depositors' and creditors' interests. Thus, the financial resilience of a cooperative bank also directly depends on the quality and adequacy of its liabilities. The changes in liabilities and commitments of the Poznański Bank Spółdzielczy for 2013-2023 are shown in Figure 2.

In recent years, the structure of the bank's liabilities has shown a noticeable upward trend; in particular, the value of bank liabilities increased by more than 75% in 2013-2023. Besides, the above chart shows that the bank's liabilities clearly exceed its equity, the share of which in liabilities increased from 87.7% to 90.5% during the period under study.

To put it otherwise, external resources are the dominant source of funding for Poznański Bank Spółdzielczy's active operations. The use of borrowings as a source of equity in banking activities allows generating higher profits, as well as increases the bank's risks and its dependence on external financing. However, this situation is in line with best practices, given the peculiarities of banks' activities as financial intermediaries.

Figure 2. *Changes in liabilities and commitments of the Poznański Bank Spółdzielczy in 2013-2023*



Source: *Calculated by authors based on the bank's balance sheet data for 2013-2023.*

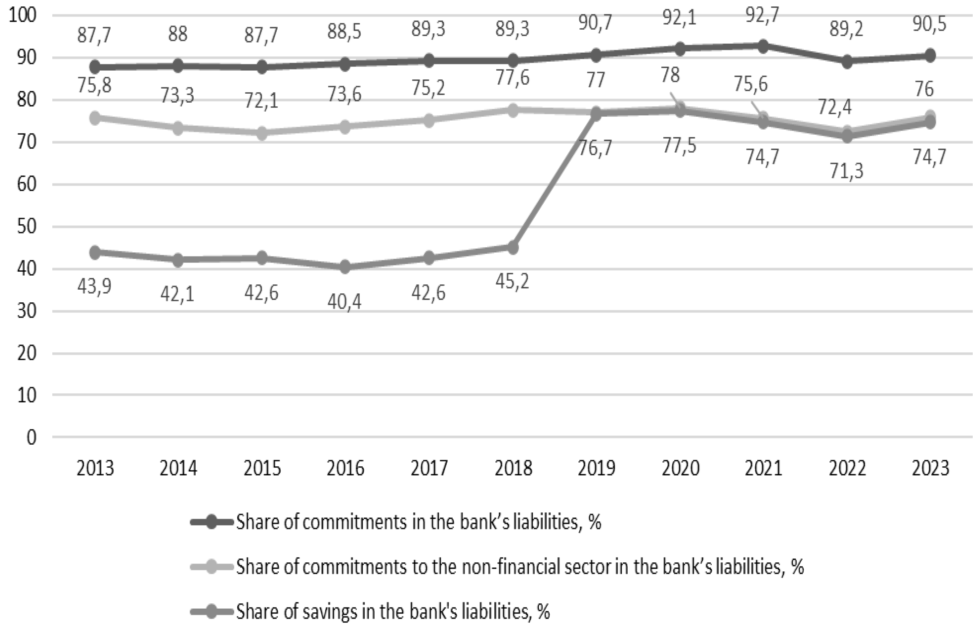
The share of commitments in Poznański Bank Spółdzielczy's liabilities increased to 90.5% at the end of 2023, of which the share of commitments to the non-financial sector amounted to 76%. This growth was due to an increase in the share of savings in the bank's liabilities.

Between 2013 and 2023, this indicator increased from 43.9% to 74.7% (Figure 3). This is confirmed by the fact that customer's savings are an important source of funding for banks. It also indicates that customers' confidence in the financial institution is growing, as they are depositing more and more funds with Poznański Bank Spółdzielczy.

The volume of current accounts of bank customers grew almost 10-fold between 2013 and 2023, while fixed-term accounts grew less than twice. For individuals, the interest rate for deposits in PLN for a period of 12 months is only 0.20%, while the interest rate for deposits in EUR, USD, GBP for a period of 1 to 12 months is 0.00%. Such a pricing policy of Poznański Bank Spółdzielczy indicates a lack of interest in fixed-term deposits in both national and foreign currencies.

Obviously, this situation is explained by the availability of adequate financial resources to fund the bank’s active operations.

Figure 3. *Shares of commitments and savings in the liabilities of Poznański Bank Spółdzielczy in 2013-2023*



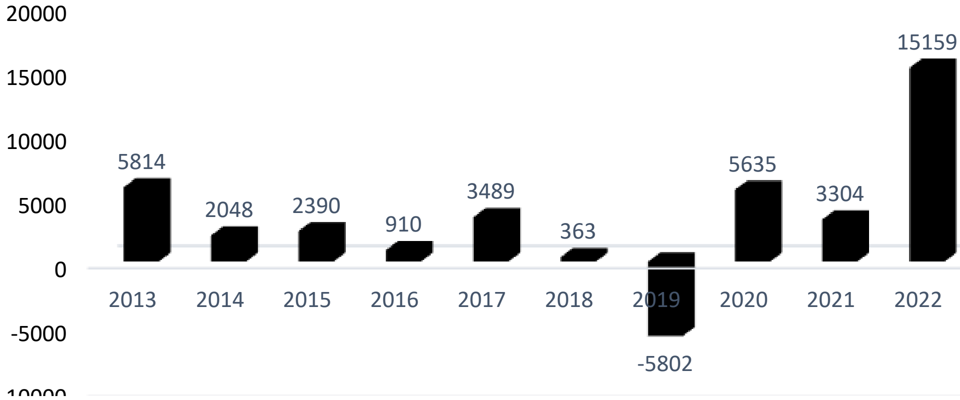
Source: *Calculated by authors based on the bank's balance sheet data for 2013-2023.*

Given the peculiarities of a cooperative bank, the purpose of its activities is not to maximize but to optimize profit. Maintaining profits at an appropriate high level allows the bank to operate safely, scale up, maintain trust and improve the financial situation of both employees and owners. The profits of a cooperative bank primarily benefit its members. The main source of Poznański Bank Spółdzielczy's profit is its operating activities involving the sale of deposit and loan products.

In 2013-2023, Poznański Bank Spółdzielczy declared a negative result, i.e. a loss, only in 2019 in the amount of PLN 5,802,000, which was caused by the bank's loss-making operating activities in that year (Figure 4).

It is worth noting the high volatility of the bank's profit in subsequent years. This is partly the result of changes in the economic situation (external factor) and partly due to the fact that the bank's lending activities could be burdened with high risk (internal factor). In 2013-2018, the bank's profit decreased from PLN 5,814,000 to PLN 363,000. However, during 2020-2023, the income of Poznański Bank Spółdzielczy almost tripled to PLN 15,981,000.

Figure 4. *Profit/loss of Poznański Bank Spółdzielczy in 2013-2023*

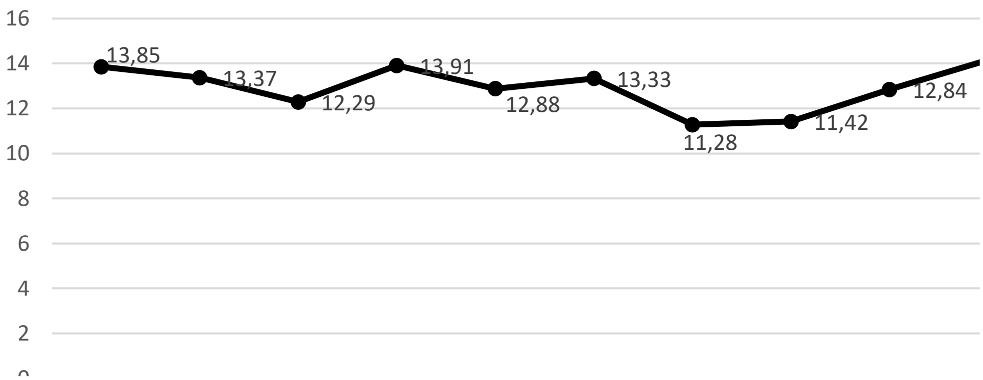


Source: *Calculated by authors based on the bank's balance sheet data for 2013-2023.*

One of the key indicators reflecting the security of a bank's operations is its solvency ratio. It should be noted that this indicator is considered by the banking supervisor as the main indicator of the financial condition of a banking institution. According to the regulator's requirements, the bank shall maintain this indicator at minimum 8%.

The lowest value of the solvency ratio for Poznański Bank Spółdzielczy was recorded in 2019 at 11.28%. However, despite this decline, the bank complied with the established requirements (Figure 5).

Figure 5. *Solvency ratio of Poznański Bank Spółdzielczy in 2013-2023 (%)*



Source: *Calculated by authors based on the bank's balance sheet data for 2013-2023.*

In 2020-2023, this indicator increased from 11.42% to 14.69%, which proves the resilience of Poznański Bank Spółdzielczy and that the safety zone for depositors and creditors in case of unexpected losses that the institution may incur is wide. The bank's solvency is stable and tends to increase during the period under study. This indicates an increase in the share of own funds in relation to risk-weighted assets.

The banks' operating conditions can also be assessed based on profitability indicators. For this purpose, two indicators are used: return on assets (ROA) and return on equity (ROE), showing the efficiency of the bank's operations. ROA is the ratio of net profit to the average value of total assets. Szunke (2014), notes that smaller banks are usually characterized by high ROA, indicating a lower cost of capital and higher profitability of loans.

Large banks, on the other hand, have lower values of this indicator due to the higher cost of capital used. ROE is also compared to the inflation rate. A lower ROE vs the inflation rate means that the bank is decapitalized. In a developed market economy, it is believed that for banking institutions, an indicator of 16-18 (with no or low inflation) is positive and indicates a good standing of this entity.

In 2013-2023, the Poznański Bank Spółdzielczy recorded negative ROA and ROE only in 2019 due to the loss incurred in that year. In 2022-2023, Poznański Bank Spółdzielczy recorded the highest value of profitability indicators (Table 2). This trend is highly positive and confirms the efficiency and resilience of the bank's operations.

Table 2. *ROA and ROE of Poznański Bank Spółdzielczy in 2013-2023*

Indicator	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
ROA	1,08	0,35	0,38	0,13	0,49	0,05	-0,74	0,64	0,33	1,75	1,65
ROE	12,07	4,07	4,97	1,86	6,97	0,68	-8,72	12,14	6,35	28,97	24,26

Source: *Calculated by authors based on the bank's balance sheet data for 2013-2023.*

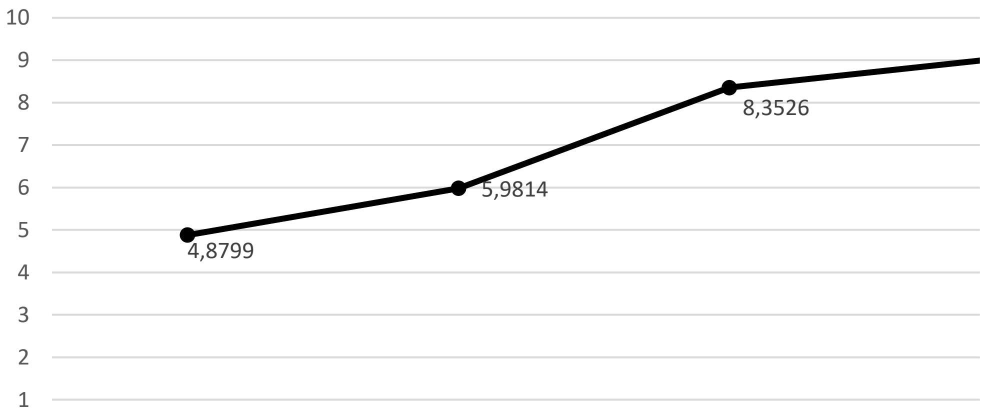
Another indicator of financial resilience reflecting the ability of a banking institution to raise funds in the financial market is the financial leverage ratio. This ratio is calculated as the ratio of Tier I capital vs the aggregate risks measured by this ratio, including assets and off-balance sheet items with any level of risk. Since June 28, 2021, the minimum 3% leverage ratio is mandatory for all banks in the European Union. The introduction of this indicator is an additional tool aimed at limiting the risk of instability in the banks' operations.

Figure 6 shows the changes in Poznanski Bank Spółdzielczy's financial leverage ratio in 2020-2023. During this period, the value of the ratio increased from 4.8799% to 9.0436%. The bank's leverage ratio is above 3% and does not exceed 12%. This trend is positive and indicates the resilience of Poznanski Bank Spółdzielczy's operations.

Poznański Bank Spółdzielczy is a member of the SGB Protection System (IPS-SGB), an institution that legally ensures the liquidity and solvency of banks in the system. Participants (i.e. other cooperative banks) have collected funds within the SGB Protection System in the amount of over PLN 1.6 billion, which allow providing assistance to them in problematic situations. In addition to the supervision carried out by the Polish Financial Supervision Authority, the situation of Poznański

Bank Spółdzielczy is constantly monitored by the SGB Joint Protection System, which is able to take effective measures to limit risk and ensure the bank's resilience.

Figure 6. *Financial leverage ratio of Poznański Bank Spółdzielczy in 2013-2023*



Source: *Calculated by authors based on the bank's balance sheet data for 2013-2023,*

4. Conclusions

During the period under study, the bank observed an upward trend in assets, indicating its stable development and strengthening of its position in the financial market. In accordance with the defined mission of Poznański Bank Spółdzielczy, its operations are focused on lending to the corporate sector and private individuals. To meet the financial needs of its customers, the bank offers various types of loans.

The bank uses external financial resources, the key ones being commitments of the non-financial sector, to conduct its active operations. At Poznański Bank Spółdzielczy, an important source of funding for its operations is the funds accumulated on customer savings accounts. This also indicates the growth of confidence in the bank, as there is a tendency to increase these monetary resources in the banking institution.

The bank has and annually updates a plan for attracting and maintaining funds that are considered a stable source of funding. The collected surplus funds that Poznański Bank Spółdzielczy does not use for lending activities or that are not intended for the purchase of other assets (including liquid assets) are accumulated in the Associated Bank. The bank allows for the possibility of obtaining additional sources of funding from the Associated Bank on the terms and within the capabilities of this bank (secured financing).

In emergency situations, an additional source of funding may also include funds kept within the minimum deposit and liquidity support from the Assistance Fund under the terms and conditions specified in the SGB Protection System agreement, as well as obtaining of a refinancing loan from the National Bank of Poland.

The result of the effective operation of Poznański Bank Spółdzielczy is a significant increase in its profit during the period under study. The analyzed indicators of the financial position (in particular, liquidity, solvency, profitability) indicate the resilience and efficiency of the bank's operations.

References:

Agostino, M., Ruberto, S., Trivieri, F. 2023. The role of local institutions in cooperative banks' efficiency. The case of Italy. International Review of Economics & Finance, 84, 84-103. https://doi.org/10.1016/j.iref.2022.11.001.

Ayadi, R., Challita, S., Cucinelli, D. 2023. Cooperative banks, business models and efficiency: a stochastic frontier approach analysis. Annals of Operations Research. DOI:10.1007/s10479-023-05526-9.

Barra, C., Papaccio, A., Ruggiero, N. 2025. Management Cost Efficiency and Technology Gap: Cooperative vs. Non-Cooperative Credit Banks. Journal of the Knowledge Economy. DOI:10.1007/s13132-025-02612-0.

Clark, E., Salvatore Mare, D., Radić, N. 2018. Cooperative banks: What do we know about competition and risk preferences? Journal of International Financial Markets, Institutions and Money, 52, 90-101.

Colvin, Ch.L., McLaughlin, E. 2014. Raiffeisenism abroad: why did German cooperative banking fail in Ireland but prosper in the Netherlands? The Economic History Review, 67, 492-516. https://doi.org/10.1111/1468-0289.12030.

Constantinescu, L.A., Constantinescu, A. 2013. The Stability, Risk and Performance of Cooperative Banks. Review of General Management, (1), 195-200.

Chronopoulos, D.K, Sobiech, A.L., Wilson, J.O.S. 2021. Social capital and the business models of financial cooperatives: Evidence from Japanese Shinkin banks. Financial Accountability & Management, 37, 460-480. https://doi.org/10.1111/faam.12282.

Diaconu, I.R., Oaena, D.C. 2015. Determinants of bank's stability. Evidence from CreditCoop. Procedia Economics and Finance, 32, 488-495.

Diaconu, I.R.., Danea, D.C. 2014. Banking system stability: commercial and co-operative banks. SEA - Practical Application of Science. Conference paper, 2, 1(3), 404-410.

European Association of Co-operative Banks. Available at: http://eacb.coop/en/home.html.

IPS-SGB. Spółdzielczy System Ochrony. Available at: https://www.ips-sgb.pl.

Fiordelisi, F., Mare, D.S. 2014. Competition and financial stability in European cooperative banks. Journal of International Money and Finance, 45, https://doi.org/10.1016/j.jimonfin.2014.02.008.

Fiordelisi, F., Mare, D.S. 2013. Probability of default and efficiency in cooperative banking. Journal of International Financial Markets, Institutions and Money, 26, 30-45. https://doi.org/10.1016/j.intfin.2013.03.003.

Grima, S., Thalassinos, E. (Eds.). 2018. Contemporary issues in business and financial management in Eastern Europe. Emerald Publishing Limited.

Groeneveld, H., De Vries, B. 2009. European co-operative banks: first lessons of the subprime crisis. International Journal of Co-operative Management, 4, 8-22.

Hesse, H., Čihák, M. 2007. Cooperative Banks and Financial Stability. IMF Working Paper No. 07/02. Available at SSRN: https://ssrn.com/abstract=956767.

Jędrzejowska-Schiffauer, I., Schiffauer, P., Thalassinos, I.E. 2019. EU Regulatory Measures Following the Crises: What Impact on Corporate Governance of Financial Institutions. European Research Studies Journal, 22(3), 432-456.

Jiménez-Hernández, I., Picazo-Tadeo, A.J., Sáez-Fernández, F.J. 2018. Are lac cooperative and commercial banks so different in their management of non-performing loans? Annals of Public and Cooperative Economics, 90(1), DOI:10.1111/apce.12219.

Lang, F., Signore, S., Gvetadze, S. 2016. The role of cooperative banks and smaller institutions for the financing of SMEs and small midcaps in Europe. EIF Working Paper, No. 36.

Leverage ratio Pillar 2 requirement. European Central Bank. Available at: https://www.bankingsupervision.europa.eu/activities/srep/html/leverage_ratio_p2r.en.html.

McKillop, D., French, D., Quinn, B., Sobiech, A.L., Wilson, J.O.S. 2020. Cooperative financial institutions: A review of the literature. International Review of Financial Analysis, 71. DOI: htpps://doi.org/10.1016/j.ifra.2020.101520.

Mäkinen, M., Jones, D. 2015. Comparative efficiency between cooperative, savings and commercial banks in Europe using the frontier approach. Annals of Public and Cooperative Economics, 86, 401-420.

Migliorelli, M. 2018. New Cooperative Banking in Europe. Strategies for Adapting the Business Model Post Crisis. Palgrave Macmillan Cham, 259. https://doi.org/10.1007/978-3-319-93578-2.

Poznański Bank Spółdzielczy. Available at: https://www.pbs.poznan.pl.

Sfar, F.E.H., Ben Ouda, O. 2016. Contribution of cooperative banks to the regional economic growth: Empirical evidence from France. International Journal of Economics and Financial Issues, 6, 508-514.

Szunke, A. 2014. Wybrane miary niestabilności sektora bankowego. Studia Ekonomiczne. Uniwersytet Ekonomiczny w Katowicach, 171, 50-64.

Thalassinos, E., Kadłubek, M., Norena-Chavez, D. 2023. Theoretical Essence of Organisational Resilience in Management. In: Digital Transformation, Strategic Resilience, Cyber Security and Risk Management (pp. 133-145). Emerald Publishing Limited.

Velinov, E., Kadłubek, M., Thalassinos, E., Grima, S., Maditinos, D. 2023. Digital Transformation and Data Governance: Top Management Teams Perspectives. In Digital Transformation, Strategic Resilience, Cyber Security and Risk Management (pp. 147-158). Emerald Publishing Limited.

Wilson, A. 2020. Role of Co-Operative Banks in the Development of Small and Medium Sized Enterprises (SMEs) in India. International Journal for Research in Applied Science and Engineering Technology 8(9). DOI:10.22214/ijraset.2020.31676.

Zedda, S., Modina, M., Gallucci, C. 2024. Cooperative credit banks and sustainability: Towards a social credit scoring. Research in International Business and Finance, 68. https://doi.org/10.1016/j.ribaf.2023.102186.