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CREDIT PORTFOLIO STRUCTURE IN THE LIGHT OF GENERATED RISK AS A FUNDAMENTAL ELEMENT OF A COOPERATIVE BANK'S ACTIVITIES

Rafał SZOPIŃSKI[1], Aleksandra PŁONKA[2*]

[1] Cooperative Bank in Łącko; r.szopinski@bslacko.pl, ORCID: 0009-0005-7672-3453
[2] University of Agriculture in Krakow, Faculty of Agriculture and Economics; aleksandra.plonka@urk.edu.pl, ORCID: 0000-0001-5319-592X
* Correspondence author

Purpose: The primary purpose of this paper was to identify and evaluate the optimal structure for the credit portfolio of a specific cooperative bank, with a focus on both efficiency and the resultant credit risk.
Design/methodology/approach: The paper outlines strategies for sound credit risk management within the credit portfolio structure. Utilizing variable parameters, it provides various examples illustrating the potential development trajectories of a cooperative bank, along with the consequences of decisions concerning the credit portfolio structure which exemplifies risk management within a banking context and the commitment to pursuing both prudent and stable financial activities.
Findings: The research substantiated the idea of formulating an optimal structure for a bank's credit portfolio. It also validated the hypothesis that effective diversification of assets could swiftly recuperate the interest income lost by the examined Cooperative Bank X by increasing other income sources. The study's outcomes affirmed that the cornerstone of effective cooperative bank management lies in maintaining a balanced ratio among various assets, ensuring a sound structure of these assets, and possessing the ability to generate a sufficient level of profit capable of offsetting realized risks.
Practical implications: Applying the acquired knowledge and experiences to craft an optimal credit portfolio model for a cooperative bank.
Originality/value: Emphasizing the importance of the credit portfolio structure of a cooperative bank as a fundamental tool ensuring the security of business activities, bank reputation, and customer trust.
Keywords: credit portfolio, credit risk, cooperative bank, banking.
Category of the paper: case study.

1. Introduction

Cooperative banks, as small units in the financial sector, play a substantial role beyond merely contributing to the establishment of the banking system. They serve as a crucial element in the structure and operation of local economies. The expansive network formed by these financial institutions underscores the pivotal role of cooperative banks in fostering local entrepreneurship, particularly in rural and small municipal areas. Beyond being the initial point of contact for many clients in utilizing standard banking products, they undeniably stand as the primary source of external capital for the local community.

Cooperative banks, functioning as local financial institutions, are acknowledged for their crucial role in supporting local communities. They actively engage in various enterprises that contribute to the integration of local communities. The endeavors of the cooperative banking sector, beyond achieving significant economic and financial outcomes in the market economy, are also dedicated to fulfilling a social function. Notably, cooperative banks had been implementing the strategy of corporate social responsibility long before this concept gained widespread promotion and adoption by commercial entities.

Over several decades since the inception of cooperative banking, the concept of a cooperative bank appears to be timeless. This form of economic activity, grounded in cooperative principles, has proven resilient to the fluctuations in financial markets, adverse effects of the global economy, and world financial crises. Nevertheless, cooperative banking faces increasing competitive pressure from the commercial banking sector. This competition necessitates banks to operate more efficiently. It is crucial to note that these modest financial entities operating in local markets often grapple with limitations stemming from the level of equity capital required to cover lending risks and ensure the safety of their clients' deposits. Moreover, meeting various legal regulations applicable to cooperative banks, maintaining fundamental parameters reflecting their economic and financial standing, and conducting profitable lending activities pose significant challenges for them within competitive conditions.

For cooperative banks to sustain their market share and continue providing financial services to local communities, enhancing the effectiveness of their operations is imperative. This necessitates the adoption of solutions that seamlessly integrate efficiency with risk management. A fundamental mechanism for mitigating credit risk involves ensuring the proper structure of a bank's credit portfolio, including diversification and appropriate proportions tailored to the specificities of cooperative banks' operations. A bank's continuous commitment to maintaining an appropriate and secure structure for its credit portfolio, coupled with effective resource utilization, directly influences the security of its activities, its reputation, and client trust. Conversely, an inadequate credit portfolio structure can, in a short span and without warning signals, lead to the collapse of a bank. A high number of impaired loans and the subsequent need for creating loan-loss provisions, resulting in a decline in key performance

indicators, can, in extreme cases, trigger a significant outflow of deposits, erode client trust, and prompt the withdrawal of clients' savings from the bank. This, in turn, severely constrains the bank's capacity for further lending, hindering its ability to generate financial results that ensure stable and secure growth.

2. Material and the research method

The primary purpose of the paper was to identify and evaluate the optimal structure of the credit portfolio of the selected cooperative bank. The evaluation of the structure focused on both its effectiveness and the associated credit risk.

The paper utilized data from Cooperative Bank X, operating in Little Poland Voivodeship and its neighboring counties. During the analyzed period, Cooperative Bank X exhibited the following economic parameters:

- The balance sheet total amounted to PLN 560 million,
- The total value of the own funds was PLN 32 million,
- The total capital ratio was 17.5,
- Granted loans totaled PLN 245 million,
- Impaired loans constituted 3% of the total amount of granted loans,
- The ratio of impaired loans coverage with provisions stood at 60%,
- The C/I ratio was 70%,
- The number of the bank’s clients was 92,800 entities,
- The number of active credit agreements was 5410,
- The number of active deposit contracts was 6900,
- The number of held bank accounts reached 24,500.

To fulfill the research objective, the study drew upon internal documentation of the bank, such as the Bank statutes, Organizational rules, operational strategy, Strategy for risk management, and Credit risk management policy – an integral component of the economic and financial plan. Additionally, external regulations were consulted, including, among others:

- Banking Law (Act…, 1997),
- Regulation of the Finance Minister on the principles of creating provisions for the risks related to the activities of banks (Regulation…, 2015),
- T Recommendation (2013) and S Recommendation (2019) of the Financial Supervision Authority,
- Regulation of the European Parliament and European Council (EC) on prudential requirements for credit institutions and investment companies (Regulation…, 2013).

The paper outlines effective methods for credit risk management within the credit portfolio structure. Utilizing variable parameters, it provides several examples illustrating the potential development paths for cooperative banks and the consequences of decisions concerning the credit portfolio structure that illustrates risk management within a banking context and pursuit of both prudent and stable financial activities. Each example showcases how diverse credit exposures influence the capital ratio. Continuous monitoring of the value of the capital ratio (TCR) is essential, and accurate estimation during the crediting process is crucial in understanding the impact of a specific credit exposure on existing limits and the utilization of available capital. The capital ratio, representing the ratio of own funds to risk-weighted assets, serves as an indicator of a bank's ability to cover the minimum capital requirement for operational and other credit risks with its own funds. This is a fundamental parameter for ensuring the safety of bank activities, and the minimum value for the analyzed Cooperative Bank was determined to be 13.5%.

3. Characterization of cooperative banking

Cooperative banks or credit unions are prevalent in nearly all European Union states, with many institutions tracing their origins back to the latter half of the 19th century or the early 20th century. Rooted in the concepts of the rural Raiffeisen bank (Sadowska, 2019) or urban popular Schulze-Delitzch bank (Rolski, 2019), cooperative banks swiftly evolved to become integral and well-established components of the banking systems across EU countries. While sharing fundamental cooperative values, their business models have diverged significantly over time, not only across Europe but also within individual countries (Lepczyński, 2017). Despite these variations, all cooperative banks function as universal banks, providing clients access to financial services through both traditional channels, such as brick-and-mortar offices, and modern ones, including internet and mobile banking (Rolski, 2010). Unlike their early days when they actively supported the fight against exploitation and market exclusion of economically weaker social groups (Rosa, 2019), contemporary cooperative banks bear little difference from commercial banks in their operational methods (Kura, Płonka, 2023). Although generally small, these entities exhibit vibrancy and possess a remarkable ability to adapt swiftly to a changing environment, exerting a stabilizing influence on the banking services market during financial crises (Gostomski, 2019). A notable advantage of cooperative banks lies in their extensive network of branch offices strategically located near clients' workplaces or places of residence, coupled with a strong emphasis on providing excellent customer service (Sadurski, 2015).

Cooperative banks boast a substantial and steady deposit base, primarily extending loans to small and medium-sized businesses during periods when larger banks exhibit a temporary lack of trust. This lack of confidence may arise due to factors such as the international financial market situation or issues related to liquidity and reputation. As highlighted by Migliorella (2020), in the aftermath of the economic and financial crisis that eroded the reputation of commercial banks (Łukaszuk, 2018), cooperative banks identified a distinctive advantage setting them apart from traditional commercial banks — namely, their emphasis on membership and local impact. Since this realization, cooperative banks have effectively filled this void, assuming the role of stabilizers in the domestic economies of numerous EU countries (Belaisch et al., 2001; Fitch, 2003).

Cooperative banking has had a longstanding presence in Poland since the 19th century, playing a crucial role in the country's banking system across different epochs, including the present day. Notably, every third banking entity in Poland operates as a cooperative bank. As of the end of the first quarter of 2023, there were 492 cooperative banks in operation, collectively employing nearly 28 thousand individuals. This workforce accounted for over 18% of the total employment within the banking sector. The distinctive features that set cooperative banking apart from other bank types include its legal form as a cooperative, a mission that extends beyond profit-making to also maximize benefits for shareholders, geographical location primarily in rural areas or small towns, and a multigenerational tradition of market presence coupled with an in-depth understanding of local client needs (Płonka et al., 2023).

4. Banking risk – definitions, essence and generating factors

Banks, under escalating pressure from various environmental factors, including the economic and regulatory landscape, as well as the imperative of generating increasingly higher profits, find themselves compelled to perpetually enhance their economic effectiveness. The heightened volatility of fundamental macro-economic parameters further contributes to fluctuations in the risk level associated with their economic activities. Consequently, risk emerges as an inherent element intertwined with the pursuit of business objectives.

Risk can be defined as "the possibility of the occurrence of such a sequence of events that will cause the failure to achieve the planned business objectives" (Żółtkowski, 2017). Alternatively, another perspective defines risk as "deviation from the set values, whether positive or negative" (Jaworski, Zawadzka, 2008). Kalinowski (2012) offers another definition, characterizing risk as "a degree of uncertainty regarding loss occurrence, without addressing the likelihood of its occurrence. However he draws a clear distinction between risk and uncertainty, and portrays risk as the "combination of hazard measured by means of probability",

contrasting it with uncertainty, which he defines as the "degree of conviction" (Kalinowski, 2012). Aligned with the research purpose of this paper, risk is construed as the "possibility of failure to achieve the intended objective (effect), i.e., a negative deviation from the desired state" (Iwanicz-Drozdowska, 2017). From a purely economic standpoint, "risk occurs insofar as it causes, directly or indirectly, financial loss" (Best, 2000).

There exist various classifications of risks associated with banking activities, and one of the most crucial among them is credit risk, which is defined in diverse ways. From the standpoint of timeliness, credit risk is characterized as the "impossibility of the credit recipient to repay their financial commitments in full or in part within the due time limit" (Gątarek et al., 2001). Alternatively, concerning adherence to terms within the specified time frame, credit risk is defined as the "risk of the possibility of the credit recipient's failure to abide by the terms of the contract within the due time limit, resulting in the bank not receiving the payment as per the contract within the expected time frame" (Jajuga, 2007). Examining credit risk in the context of repayment feasibility, Krysiak (2006) defines it as the "danger that the credit recipient is unable to repay their commitments," while Wiatr (1999) characterizes it as the "risk of financial loss when the company with which a bank cooperates stops paying its financial commitments or when the market situation may force the company to do so".

Factors impacting credit risk, as outlined by Gruszka and Zawadzka (1992), encompass a range of types:

- economic factors: a low value of a bank's equity, high credit and loan burden, as well as external influences such as exchange rate changes and inflation,
- social factors: financial education on credit transaction safety and the level of awareness among clients, particularly in rural areas,
- political factors: amendments to legal regulations,
- demographic factors: clients' migration from rural areas to larger agglomerations and the aging of cooperative banks' clients,
- technical factors: insufficient financial outlays for the implementation of new technologies, systemic and consociating difficulties, and the duplication of IT projects.

Another division of factors influencing risk generation in a bank's lending activity can be categorization by the scale of impact and place of origin. These factors can be broadly classified as either macroeconomic or microeconomic in nature. Macroeconomic factors primarily encompass interest rates, exchange rates, as well as the prices of raw materials and real estate prices. Microeconomic factors are factors related to:

- Unreliable, incomplete information about the economic entity applying for credit.
- A credit recipient's low own contribution with a relatively high need for external sources of investment financing.
- Lack of well-qualified staff capable of properly assessing or initially predicting credit risk based on provided data.

- Incorrect procedures, internal instructions within a bank.
- Issues connected with an intention to obtain credits through fraudulent means.
- Chance events that are difficult to predict.

One of the factors directly contributing to an excessive increase in credit risk for cooperative banks is the credit portfolio structure. Indirect causes of an improper credit portfolio structure include:

- Failure to properly identify the risk linked to a specific group of credit recipients.
- Lack of appropriate limits on the size of a given portfolio.
- Inadequate identification of external factors.
- Insufficient knowledge of the investment or industry in which the credit recipient operates.
- Financial result pressure.
- Inappropriate adaptation of resources to granted credit exposures in terms of capital and capacity to cover current losses.

As cooperative banks vary in their activities, scope of operation, and specificity, each cooperative bank should correctly identify all the factors contributing to the generation of excessive risk affecting operating activities, particularly credit risk. This identification is essential for the development and implementation of mechanisms aimed at mitigating the factors that generate various risks, thereby facilitating the cautious and stable functioning of a cooperative bank within a dynamic macro and microeconomic environment.

5. Credit portfolio in relation to stages of scaling in a Cooperative Bank's operations

During the transformation of the cooperative banking sector, numerous models emerged, delineating the independent functioning of individual entities. Some of these models were replicated, while others were specifically adapted to meet market requirements and align with the capabilities of banks. Nevertheless, these models were so distinctive that it is worthwhile to delve into the circumstances under which they were created and explore their impact on the current state of the cooperative banking sector.

One of the fundamental models for structuring a bank's credit portfolio involved the adoption of a homogeneous credit portfolio comprising financial instruments with a 0% risk weight. This primarily included long-term variable-interest-rate and fixed-interest-rate treasury bonds, along with treasury bonds with a maturity of 7 days. Funding for such a portfolio is derived from the overnight and fixed-term deposits of bank clients. The maximum size of the credit portfolio is determined by stable core deposits, and it is designed to remain below 70% of the balance sheet total. The cost of liabilities (stable fixed-term and overnight deposits)

in the case of the analyzed Cooperative Bank X in the adopted credit portfolio model was at 0.7%. Considering that the profitability of the assets, namely the credit portfolio consisting of financial instruments issued by the State Treasury, comprised solely of treasury bonds with a yield of 1.4%, the interest margin for such a portfolio fluctuated around 0.7%.

In the second model, it was assumed that Cooperative Bank X aimed to enhance the effective management of its assets, prompting a change in the credit portfolio structure to achieve a significantly higher interest margin. The magnitude of this margin, however, depended on the acceptable appetite for credit risk and the profitability of various financial instruments constituting the credit portfolio. Cooperative Bank X accordingly adjusted its credit portfolio structure to attain a higher interest margin and generate a satisfactory financial outcome. To achieve this, the bank sold a substantial portion of its treasury bonds portfolio and acquired a different financial instrument that was equally safe, with a 0% risk weight, but offered higher profitability. This new instrument comprised variable-interest-rate and fixed-interest-rate treasury bonds with a maturity of 10 years. With three distinct financial instruments featured in the bank's assets and their overall profitability determined, the average interest of the assets reached 2%, while the cost of liabilities remained unchanged at 0.7%. Consequently, an interest margin of 1.3% was achieved, accompanied by a higher net interest income. In this model, despite the absence of an appetite for credit risk, the bank generated a positive net interest income.

To enhance the interest margin, in another model, Cooperative Bank X established an acceptable appetite for credit risk and replaced a portion of its assets (40%) with credits and loans, funding them through stable core overnight and fixed-term deposits. This strategic shift resulted in the credit portfolio's average interest reaching profitability at 3.3%. Concurrently, the bank maintained the cost of raising funds at 3.3%, consistent with previous models. As a consequence, Bank X achieved an interest margin of 2.6%, leading to a significantly higher net interest income. Under this credit portfolio structure, each PLN million translated into PLN 26 thousand in income per year. Encouraged by a high net interest income, the bank expanded its appetite for risk by replacing a larger proportion of safe financial instruments with credits and loans, particularly large-value credits and loans for private entrepreneurs and companies—institutional credits (comprising 65% of loan commitments relative to the balance sheet total, with a set limit of 70%). This strategic move further increased the interest margin from 2.6% to 3.2%, resulting in an even higher net interest income. Additionally, the introduction of extensive lending led to increased income from commissions on granted credits and loans. Fixed costs of liabilities, coupled with interest income and income from commissions, generated substantial revenue. Non-performing credits stood at around 3%, while the ratio of non-performing loans coverage with loan-loss provisions met the required level of 30%. The bank successfully achieved its main strategic objective—increasing the effectiveness of its activities while maintaining the set risk appetite. It also generated a high financial result at the end of the financial year, transferring 90% of the generated profit to

current reserves, thereby improving its capital adequacy and expanding its capacity for further growth and lending. As these measures yielded the desired effects, the resulting credit portfolio structure comprised institutional credits representing 70% of the whole portfolio, followed by retail loans, loans granted to local government units, and loans targeted at farmers (Fig. 1). Overall, loan commitments represented 65% of the balance sheet total. Impaired credits and loans constituted less than 3%, showcasing the high quality of Cooperative Bank X's credit portfolio.

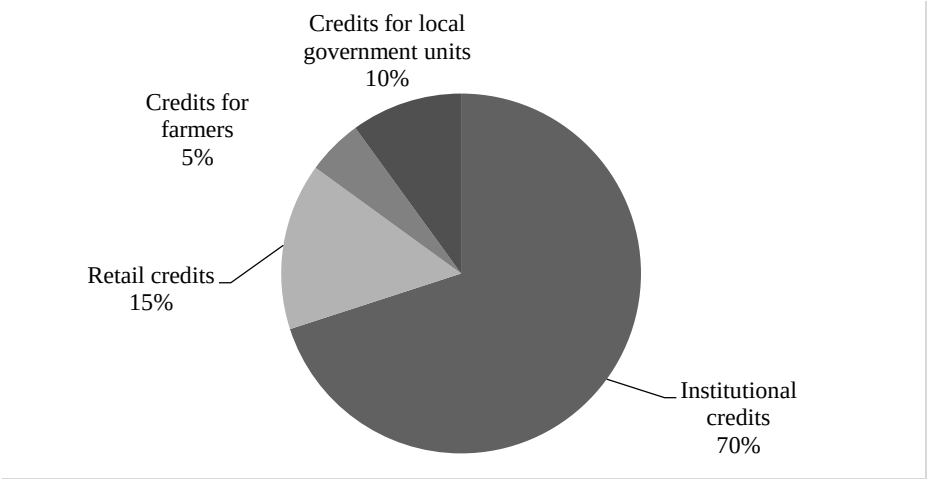

Figure 1. Structure of the bank's credit portfolio enhancing the effectiveness of its activity while maintaining the set risk appetite (%).

Source: own study based on the research.

In the presented model, Cooperative Bank X successfully achieved the intended credit portfolio structure without exceeding set limits that would directly impact credit risk reduction. This includes limits for specific industries, concentration limits for affiliated entities, and limits on applied safeguards. The total capital ratio surpassed the required level of 13.5% and was close to 14%. Utilizing the basic parameters of Cooperative Bank X's activity and adhering to statutory limits on the total exposure amount for a single entity or a group of companies related by equity or organizational structure, the bank could grant the highest credit exposure at the level of PLN 7 million. Its annual net profit reached PLN 4 million. Approximately 80% of the entire credit portfolio in Cooperative Bank X was identified as significant credit exposures, exceeding 5% of own funds (involving 43 credit agreements with a total balance sheet exposure within the range of PLN 5-7 million). The interest margin increased to 3.4%. Despite a low ratio of impaired loans to total loans at 3.5%, the bank accepted a higher credit risk appetite. The value of established loan-loss provisions also remained at an acceptable level of 40%.

It is worthwhile to analyze a hypothetical situation in which, despite maintaining the desired structure of the credit portfolio, the interest margin of Cooperative Bank X started to decrease. Similarly, the income from commissions would also decline. Conversely, the costs of obtaining liabilities slightly increased from 0.7% to 0.8%. Despite these challenges, the annual material and financial plan of Cooperative Bank X would still aim to achieve a profit at a similar level as in the previous year. These assumptions are substantiated by the identification of

a deteriorating economic and financial situation for several clients of Cooperative Bank X. In two cases, quarterly credit exposure controls revealed nearly a 50% decline in turnover and a significant loss of financial liquidity. For another two clients of the bank, underestimations of the costs of investments were identified, and without additional capital, timely completion of the investments was impossible. The adopted projections were not realized, and cash flows remained negative. Additionally, the grace period ended for one client with a total balance sheet exposure of PLN 6.5 million, and the bank expected repayment of the principal and interest installments in accordance with the schedule. However, this proved impossible. The investment did not generate the target income, and given the situation, the client applied for postponing the repayment of the principal and interest installment by another 24 months.

Following audits, Cooperative Bank X classified and moved 4 credits with a nominal value of PLN 24 million to non-performing credits "below the standard." For the first two clients, despite using purchased process lines and specialist machinery as collateral, it did not allow the bank to take advantage of the reduced basis for calculating loan-loss provisions. Additionally, the delays in payment exceeded 90 days. In the case of the third client, the bank leveraged the opportunity to reduce the basis for determining the provision amount due to the sufficient value of the mortgage collateral. However, with another client, due to underestimation of investment costs, unplanned expenditure, lack of required permits, and inconsistency between the investment execution and the approved construction plan, the real value of the collateral was only the land with the possibility of development. This situation also did not permit the bank to take advantage of the reduced basis for determining loan-loss provisions. As a result, at the end of the financial year, Cooperative Bank X increased the required loan-loss provisions to PLN 4.8 million, while generating a net profit of PLN 3.8 million. Consequently, it recorded a loss of PLN 1 million. Simultaneously, the bank launched its Remedy program, which assumed coverage of this loss in the following year as well as improvement of the economic and financial situation of clients with identified risks of failure to timely repay the credits taken out.

Following the closure of the financial year, additional 3 cases requiring classification and the necessity of creating PLN 3.5 million in required loan-loss provisions were identified during quarterly monitoring. Despite efforts to manage the previous credit exposures, the desired effects were not achieved. This compelled Cooperative Bank X to create another PLN 5 million in loan-loss provisions at the end of the year, resulting in a loss of PLN 4.5 with the net result at PLN 4 million. In the subsequent year, additional loan-loss provisions of 100% were established for three clients, leading to a negative financial result and necessitating the coverage of losses with core capital. Furthermore, the risk of reputation loss materialized, causing a significant portion of clients to withdraw their deposits. This disruption significantly impacted the basis of stable core deposits necessary for financing lending activities. The capital ratio fell far below the required level of 8%. Consequently, the bank was unable to sustain its lending activity and was eventually taken over by another entity.

The aforementioned cases illustrate the stages of the bank's development, correct objectives, and an increase in the scale of operation. However, the failure to properly identify credit risk resulted in the development of an inappropriate credit portfolio structure. The excessive increase in high-value credit exposures necessitated the creation of additional loan-loss provisions that could not be covered with the current financial profit. Several factors contributed to this situation, including the financial and economic conditions of individual credit recipients, the overall economic situation, chance events, and the impact of market saturation or excessive competition. These factors occurred simultaneously and were beyond the bank's control. Moreover, the credit portfolio structure proved to be very vulnerable to events of this nature and, consequently, led to the bank's collapse

6. Optimal credit portfolio of a cooperative bank

Retail credits, including cash credits, loans, and credits to satisfy basic housing needs, have consistently formed a significant portion of the exposures granted by the analyzed Cooperative Bank X. The credit portfolio structure, considered optimal in terms of generated credit risk and profit, and one that is not highly sensitive to economic turbulence and potential issues of credit recipients conducting economic activities, should include the following distribution: retail credits (60%), institutional credits (25%), credits for local government units (10%), and credits granted to farmers (5%) (Fig. 2).

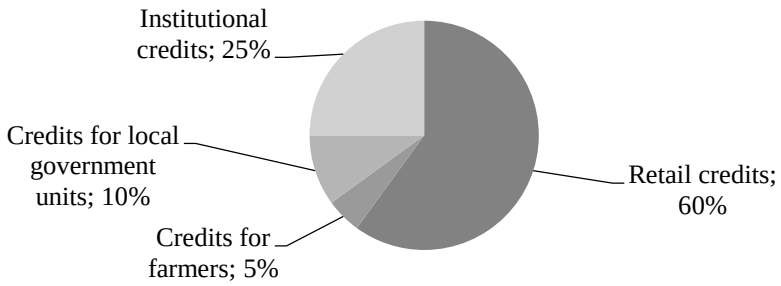

Figure 2. Optimal credit portfolio structure of Cooperative Bank X in terms of generated risk (in %).
Source: own study based on the research.

In the proposed optimal credit portfolio structure, retail credits hold the largest share, representing 60% of the entire credit portfolio. This category includes:

- Cash credits and loans, constituting 48% of retail credits. These encompass low-value exposures ranging from PLN 500 to PLN 255,000.
- Home loans, accounting for the remaining 52% of retail credits. These represent credit exposures within the range of PLN 50,000 to PLN 1 million.

The cash credit portfolio is characterized by a significant degree of fragmentation, with low-value and short-term exposures ranging from 6 to 36 months. This results in a high portfolio turnover, contributing to relatively low credit risk combined with a high-interest margin, thereby enhancing the overall effectiveness of the credit portfolio. However, to achieve this particular structure, where 60% of the entire portfolio comprises retail credit exposures, the process of granting retail credits must be well-organized, compliant with all legal requirements, and adhere to the good practices outlined in the Financial Supervision Authority's recommendations. To ensure the quality ratio of the retail credit portfolio does not exceed 1.5%, Cooperative Bank X employs various credit risk mitigation techniques. For transactions up to PLN 12,000 for the Bank's clients, no security is required, while transactions exceeding this threshold necessitate a bill. Higher-risk or higher-value transactions involve additional security measures, such as surety by financially liable individuals or mortgage collateral. When granting cash credits, the Bank also monitors the Debt to Income (DtI) ratio, assessing the ratio of payments related to managing credit and other financial obligations to the client's income. The Bank, in compliance with existing legal regulations, has set the maximum DtI rate at 60% and analyzes its established value in correlation with the credit portfolio quality.

The home loan portfolio constitutes the second-largest share of retail credits granted to natural persons by Cooperative Bank X, representing 50% of the entire retail credit exposure portfolio. This portfolio involves transactions ranging from PLN 100,000 to PLN 1 million and is designated for fulfilling basic housing needs, such as the acquisition of an apartment or house construction. Notably, home loans are not extended for the purchase of residential real estate intended for commercial purposes. The primary security for home loans is a proper entry in the land and mortgage register for the real estate involved in the transaction. The maximum duration of these loans is 25 years. The portfolio's profitability stands at approximately 4% per year, and the quality ratio is 0.5%. Home loans utilize 35% of the bank's capital, provided that these transactions are secured by a mortgage. This security measure accounts for approximately 80% of all mortgage security in Credit Bank X's credit portfolio. Within this category, the credit portfolio also includes exposures offered as loans (ranging from PLN 50,000 to PLN 200,000) for any purpose, secured by a mortgage. These loans make up about 2% of the entire retail credit exposure portfolio, with a profitability of around 7%. The key determinant for granting a home loan at Cooperative Bank X is the creditworthiness of the borrower, defined as the "capacity to repay the contracted credit along with due interest at dates specified in the contract" (Law…, 1997). To assess creditworthiness, the Bank evaluates the borrower's (or borrowers') income, monthly financial obligations, and the costs of living within the household, which in accordance with the guidelines of the Financial Supervision Authority are set at the level of existential costs for credit exposures of over 60 months.

In the presented Cooperative Bank X, the credit portfolio designated for institutional clients comprised 25% of the entire credit portfolio, amounting to approximately PLN 63 million in nominal value. Notably, credits up to PLN 1.6 million constituted 90% of all institutional

credits, with the remaining 10% representing credits ranging from PLN 1.6 million to PLN 4 million. Importantly, the value of the most substantial credit exposures within this portfolio did not surpass PLN 4 million for a single borrower or entities related to one another, despite the fact that the available own funds could have supported exposures nearly twice this value. Cooperative Bank X adhered to a limit determined by the generated net profit throughout the year, earmarked to cover potential losses in the current financial year.

Credits granted to local government units are characterized by a low risk weight and a high level of transaction security. However, their share in the overall credit portfolio of Cooperative Bank X is moderate, standing at 10%, due to their relatively low profitability (around 2-2.5%). These transactions were high in value, ranging between PLN 1 million and PLN 12 million, and subject to a different limit compared to institutional credits. Throughout the extensive 120-year history of Cooperative Bank X, there has not been a single case of reclassifying a credit for local government units to a higher risk category. To diversify the bank's assets, credits for local government units served as an alternative to bonds and other securities with similar profitability.

Credit exposures granted to finance agricultural activities accounted for the smallest share in the credit portfolio structure of Cooperative Bank X. These credits, extended to farmers, fell within the value range of PLN 50,000 to PLN 350,000. The profitability of this portfolio was approximately 5%. It's worth noting that the bank did not extend credits to agricultural undertakings.

7. Conclusion

The proper management of a cooperative bank relies on maintaining the right proportion between different assets, ensuring a sound structure of assets, and having the capacity to generate an appropriate level of profit to cover materialized risks. Unfortunately, this objective cannot be achieved by a bank within a relatively short period of time. Developing and implementing an effective strategy for managing a cooperative bank typically necessitates several years of systematic revision and ongoing adjustments of strategic objectives based on prevailing macro- and micro-economic conditions. Well-formulated objectives not only ensure the security of a cooperative bank's clients' deposits but also contribute to the financial stability and growth capacity of the bank. In times of crisis, these objectives play a critical role in enabling the bank to survive.

The attainment of the research objective outlined in the paper, which presented the appropriate structure of a cooperative bank's assets, with a specific emphasis on the proper diversification of the credit portfolio amidst an unforeseen global crisis, underscores the significance of the addressed issues even more prominently. The case of Cooperative Bank X

and its credit portfolio structure exemplifies that the bank created a robust "financial cushion" over several years, enabling it to navigate the recent economic downturn effectively. The prudent diversification of assets facilitated a swift recovery of lost interest profit, a consequence of interest rate reductions implemented to counter the economic repercussions of the coronavirus pandemic, by increasing alternative income sources.

The smallest banks, relying on homogeneous financial instruments tied to the basic reference rate, were disproportionately affected, a trend that is likely to persist. The reduction of this rate to 0.1% in 2020 resulted in these banks losing almost all their interest incomes. However, even large and medium-sized cooperative banks, which failed to establish suitable financing structures or enhance sales processes to fortify their market position, also confronted the risk of collapse. The inappropriate structure of a bank's assets and liabilities, notably in terms of credit portfolio structures, unmistakably signals, especially in times of economic downturn, that management errors were made in the bank's past.

It should also be noted that financial results in cooperative banks are very sensitive to changes in interest rates. Non-interest income is only a small fraction of the total financial result. They are strongly dependent on trends on the interbank market. The optimal structure of assets and liabilities in a bank should eliminate as much as possible the risk of loss of interest income in the event of an unfavorable drop in interest rates. It should be ensured that the bank's assets and liabilities are characterized by appropriate diversity and, if necessary, they should be stabilized with derivatives. Appropriate and well-thought-out management of the loan portfolio structure must go hand in hand with strategic management of interest rate risk, because inappropriate decisions that deepen the interest rate risk may also lead to the loss of financial results and, consequently, to the loss of the stability of the bank's operations and the ability to cover the generated risk.

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