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COMMENTARY

Asset-liability management in credit unions: Evidence from Brazil: Commentaries

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1. INTRODUCTION

The commentaries presented are part of the *Revista Contabilidade & Finanças* Special Edition, which aims to bridge the gap between academia and professional practice. Specifically, the following commentaries discuss the article *"Asset-Liability Management in Credit Unions: Evidence from Brazil"*, authored by Flávia Zancan and Marcelo Botelho da Costa Moraes (2025). This document is organized into two sections: the first includes the remarks of Prof. Dr. Lucas A. B. de C. Barros, faculty member of the Graduate Program in Controllership and Accounting at the University of São Paulo; the second presents the commentaries of Prof. Dr. Alan Pereira Sousa, an analyst at the Central Bank of Brazil.

2. COMMENTS BY LUCAS A. B. DE C. BARROS

2.1 Study Context and Key Findings

The study by Zancan and Moraes (2025) investigates the relationship between seven discretionary asset accounts and nine discretionary liability accounts in 672 Brazilian credit cooperatives, analyzing their evolution between 2014 and 2022. This research provides novel evidence on the association between asset and liability accounts, highlighting differences between larger and smaller cooperatives and across periods of economic crisis and relative stability.

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The theoretical discussion and reported findings emphasize the importance of asset-liability management (ALM), a critical aspect of financial risk management for financial institutions. ALM focuses on mismatches between assets and liabilities and their risk and expected returns implications. Academic studies on ALM in Brazil are relatively scarce, primarily focusing on pension entities and banks (e.g., Saad & Ribeiro, 2004; Trasmontano & Vieira Neto, 2016). This study appears to be the first to comprehensively address the topic using a robust sample of credit cooperatives in the country.

The results reveal a strong association between discretionary asset and liability accounts, measured by canonical correlation coefficients (CC) calculated separately for each year of the sample period. Five of the seven canonical correlations computed annually are statistically significant at conventional levels. Notably, the highest CC approaches 1, and the second-highest consistently exceeds 0.9 across all years studied—values significantly higher than those reported in previous studies using samples of financial institutions from the United States and Germany. These findings suggest that Brazilian credit cooperatives demonstrate a notable focus on aligning their discretionary asset and liability accounts, a concern that remained relatively stable throughout most of the sample period, with an upward trend toward the end of the period. Additionally, the results strongly indicate a higher association between assets and liabilities in smaller cooperatives. Lastly, the authors report marginal differences between the canonical correlations estimated during periods marked by economic crises (2015, 2016, and 2020) and those classified as "non-crisis" periods (2014, 2017, 2018, 2019, 2021, and 2022).

2.2 Practical Relevance, Limitations, and Future Research

The National Cooperative Credit System (*Sistema Nacional de Crédito Cooperativo*-SNCC) has experienced notable and consistent growth in recent years. For example, Caffagni (2023) reports that the credit operations of cooperatives grew by 266% compared to 66% for commercial banks between 2018 and 2023. At the same time, a clear trend toward consolidation and sophistication within the system is evident, including the expansion of more complex financial operations and the merger of cooperatives, resulting in economies of scale and scope. In this context, risk management mechanisms, including those related to ALM, have gained increasing importance. Therefore, drawing attention to and providing new evidence on this topic is a significant contribution of this research, especially considering the sector's recent growth and that many credit cooperatives are small and may manage risks in a less structured way. For instance, the case study by Dal Magro et al. (2015) analyzes risk management in a credit cooperative, concluding that "the institution lacks knowledge of risk management methodologies, and the management is done intuitively" (p. 125).

Although not explicitly mentioned, the present study is also specifically related to the management of IRRBB (interest rate risk in the banking book), a topic that has received increasing attention from regulators, including in Brazil. A significant milestone in this regard was the publication of CMN (*Conselho Monetário Nacional*-National Monetary Council) Resolution No. 4,557 on 23/2/2017, applicable to all financial institutions, including credit cooperatives, which directly addresses IRRBB as an essential element of financial risk management. In this sense, the present study may provide useful insights for regulators and cooperative managers.

Notwithstanding its merits, it is important to discuss and highlight some limitations of the study. First, the data available to the authors is quite limited, affecting the scope of the conclusions. Of particular note is the lack of information on the maturity of liabilities and assets and the use of interest rate hedge mechanisms, which are central issues in the ALM debate in financial institutions (e.g., DeYoung & Yom, 2008; Memmel & Schertler, 2012). The scope of the conclusions is also limited by the quantitative methods employed by the authors. In particular, none of the three research hypotheses was formally tested statistically, meaning that the differences observed between the measures of association computed for different subsamples may not be "statistically significant" at conventional levels. Furthermore, there is little discussion on the economic significance of the differences found and their potential practical implications.

There are many extensions to be considered in future studies. For example, an interesting research conclusion is that the association between discretionary assets and liabilities was higher in smaller cooperatives than in larger ones. Future studies could delve into this topic and empirically investigate the underlying mechanisms behind this result through quantitative or qualitative methods. Based on the available literature, the authors speculate, for instance, that such a difference may be explained by the greater operational complexity and sophistication of larger cooperatives, which would tend to implement more advanced risk management strategies.

Furthermore, as mentioned earlier, the canonical correlations close to 1 reported by the authors are much higher than those reported in the two closely related previous works in the international literature. For example, the highest CC found by DeYoung and Yom (2008) using a sample of U.S. (United States) banks was 0.72. Memmel and Schertler (2012) found a maximum CC of 0.9 for commercial banks and less than 0.75 for German cooperative banks. Additionally, unlike these studies, the present research does not find evidence of a reduction in the association between assets and liabilities over time. On the contrary, the association (also measured by the so-called "redundancy coefficient") increased at the end of the sample period for Brazilian cooperatives. It would be interesting to investigate the causes of this discrepancy in future studies and whether the same phenomenon occurred with commercial banks. A possible explanation for the increase in the association between asset and liability accounts is the implementation of CMN Resolution No. 4,557 of 23/2/2017, mentioned above, through which the regulator explicitly addressed the mismatch between assets and liabilities, potentially having profound effects on the ALM of cooperatives, especially those within segments S3 and S4 (smaller credit cooperatives), but perhaps also for others (classified in segment S5, which includes the smallest credit cooperatives), even though the resolution requires the latter to implement only a simplified risk management system. Specifically, this resolution establishes in Article 30 that:

> "…IRRBB management must foresee: I - evaluation and control of its main determinants, including the mismatch between assets and liabilities, with respect to terms, rates, indexes, and currencies; and II - identification, measurement, and control of this risk based on methodologies that are consistent with the characteristics of the banking portfolio and that consider the maturity, liquidity, and risk sensitivity of the instruments classified in that portfolio."

In this regard, future studies could implement "before" and "after" analyses of this resolution, subdividing the sample by cooperative size, especially identifying those in segments S3/S4 (most directly affected) or S5 (perhaps only indirectly affected).

2.3 Conclusion

The research by Zancan and Moraes (2025) explores the association between discretionary assets and liability accounts in Brazilian credit cooperatives, a topic that has been scarcely addressed in the relevant literature. Among its strengths, the study stands out for its novel approach to the topic in the context of national credit cooperatives and the comprehensiveness of the sample used. The results suggest that this association is very strong and remained relatively stable, with a slight upward trend during the analyzed period, contrasting interestingly with international studies. The empirical analysis also suggests a greater concern with aligning assets and liabilities in smaller cooperatives.

Some limitations of the study deserve attention, including the lack of data on maturities and hedge mechanisms, as well as the absence of formal statistical tests for the research hypotheses. For future studies, researchers could explore the mechanisms underlying the differences in the degree of alignment between cooperatives of different sizes, investigate the discrepancies in relation to international results, and assess the impacts of CMN Resolution No. 4,557/2017, which explicitly addresses the mismatch between assets and liabilities in financial institutions. Such advancements could further enrich our understanding of risk management and asset-liability management practices in the cooperative sector.

3. COMMENTS BY ALAN PEREIRA SOUSA

3.1 Study Context

The article by Zancan and Moraes (2025), titled "Asset-Liability Management in Credit Unions: Evidence from Brazil", provides a detailed investigation into how Brazilian credit unions manage their discretionary asset and liability accounts through Asset-Liability Management (ALM) practices. Covering the period from 2014 to 2022, the study analyzes data from 672 credit unions to examine the interdependencies between these institutions' accounts, with a particular focus on the temporal evolution of these relationships and the impacts of economic crises, such as those observed in 2015, 2016, and 2020.

The study addresses a critical gap in the literature regarding ALM practices in credit unions, whose business models differ significantly from traditional banks. These institutions emphasize mobilizing and allocating resources for their members, fostering financial inclusion in underserved regions. A central contribution of the article lies in its application of canonical correlation analysis to measure the relationship between discretionary assets and liabilities, such as credit operations and demand deposits.

Additionally, the study highlights how smaller credit unions, often with limited access to complex financial instruments, exhibit stronger dependencies between these accounts and face greater challenges during periods of economic instability.

Moreover, the study examines the implications of financial regulations, such as Basel III standards, which may affect the ability of these institutions to implement effective ALM practices. Within this context, the article emphasizes the importance of aligning assets and liabilities to ensure the financial resilience of credit unions and their role in fostering local economic development. Consequently, the detailed analysis contributes to the field by underscoring the significance of strategic risk mitigation strategies in challenging economic scenarios.

3.2 Practical Relevance

The study is highly significant as it addresses critical issues related to the financial stability of credit unions, which play a pivotal role in financial inclusion in Brazil (Carvalho et al., 2015; Greatti & Sela, 2021). It demonstrates that efficient asset-liability management is essential for ensuring the resilience of these institutions, particularly during periods of economic crisis. The analysis of dependencies between discretionary accounts provides a unique empirical foundation to guide managers and regulators in formulating policies and strategies to promote greater financial stability in the sector. Moreover, the findings hold the potential to foster regulatory practices that are more attuned to the realities of credit unions, ensuring that resources are optimally allocated to meet the needs of their members.

The results are particularly relevant for understanding the specific challenges faced by smaller credit unions, which often lack access to advanced risk management tools, such as derivatives. The research further underscores that strengthening these institutions can significantly promote economic and social development in underserved regions. By detailing the dynamic relationships between assets and liabilities, the article contributes to developing theoretical and practical models better suited to the Brazilian context, directly influencing financial management strategies.

The article also engages with international studies on ALM, such as DeYoung and Yom (2008), who explored how commercial banks in the United States employ asset-liability management models to minimize liquidity risks. Their findings show that financial innovations, such as interest rate swaps, have allowed banks to reduce interdependencies between operations, providing greater flexibility in managing risks. Similarly, Memmel and Schertler (2012) analyzed interactions between assets and liabilities in universal banks, emphasizing the importance of understanding how different account categories affect risk management and profitability. These international examples help contextualize Brazilian practices within a global framework, highlighting similarities and differences in the adopted strategies.

3.3 Relevant Practical Issues Not Explored in the Article

Despite its significant contributions, the article presents some important limitations that create opportunities for future research. One major limitation is the lack of detailed information on the average maturities of the analyzed assets and liabilities. This information is critical for assessing maturity mismatches, one of the primary challenges in ALM. Studies such as those by De Moraes and De Mendonça (2017) emphasize that analyzing cash flows across different time horizons is essential to understanding how financial institutions can mitigate liquidity risks. A more in-depth consideration of maturities would allow for a more robust analysis of the relationships between assets and liabilities, enhancing the practical applicability of the findings.

Another aspect absent from the article is the consideration of the average rates associated with different accounts. Without this data, it is challenging to evaluate the relative cost of funding and the returns generated by the assets. A cash flow-based approach, as explored by De Moraes et al. (2019), could complement the analysis by mapping financial inflows and outflows in detail, providing a deeper understanding of the challenges faced by credit unions. These authors highlighted that financial flow management serves as a crucial bridge between macroeconomic regulations and the microeconomic practices of financial institutions, offering a robust analytical framework for optimizing ALM. Including these elements would add greater depth and practical relevance to the research conclusions.

Complementarily, De Moraes et al. (2017) present a model that links financial flows with the principles of financial intermediation. Their study highlights how cash flows can be leveraged to analyze the dynamic balance between assets and liabilities across various economic scenarios, addressing both systemic risks and institutional specificities. This approach would be particularly relevant for Brazilian credit unions, enabling a more detailed understanding of how these institutions can adjust their strategies in response to changes in the economic environment. Furthermore, considering crisis scenarios, such as the COVID-19 pandemic, this perspective could provide valuable insights for navigating future challenges.

Another alternative to overcome the limitations posed by the lack of granular managerial data related to ALM would be the implementation of case studies. Detailed case studies have the potential to complement quantitative analysis by offering insights into how credit unions manage their accounts in real-world scenarios. Discussing ALM effectively is highly challenging without access to more granular data from managerial accounting practices. By employing case studies, this limitation could be adequately addressed, offering a deeper and more practical perspective on managing assets and liabilities.

3.4 Conclusion

The article by Zancan and Moraes (2025), titled "Asset and Liability Management in Credit Unions: Evidence from Brazil", makes a significant contribution to understanding ALM in credit unions, emphasizing its practical relevance and social impact. However, several important limitations warrant attention in future research, including the consideration of maturities and average rates, the inclusion of case studies, and the exploration of the role of digital technologies. Integrating these dimensions could further strengthen the article's findings and enhance its practical applicability, fostering more efficient and resilient management practices in credit unions. Such advancements would support the development of robust and innovative strategies tailored to the unique needs of these institutions while promoting their broader economic and social impact.

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