

## Examining The Role of Commercial Banks' Treasury Departments in Managing Long Term Liquidity in Zambia: Case Study of Zambia National Commercial Bank Plc (ZANACO)

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### Abstract

This study investigates the role of treasury departments in managing long-term liquidity within Zambia's commercial banking sector, with Zambia National Commercial Bank (Zanaco) as the focal case. The research begins by situating liquidity management within Zambia's volatile financial environment, where exchange rate fluctuations, dollarization of deposits, sovereign debt restructuring, and monetary policy interventions pose persistent challenges. Key concepts such as liquidity, treasury operations, asset-liability management, interbank market reliance, and dollarization are defined to provide analytical clarity. A mixed-methods approach was employed, integrating quantitative analysis of liquidity ratios and funding structures with qualitative insights from treasury staff, supported by regulatory reports and industry surveys. The findings reveal that exchange rate volatility, dollarization, tight monetary policy, government borrowing, and technology gaps are the dominant risks undermining effective liquidity management. Although compliance with Basel III standards has improved, reliance on interbank markets and limited adoption of digital treasury systems reduce resilience, while ESG and climate-related risks remain insufficiently integrated. Recommendations emphasize diversifying funding sources, investing in modern digital treasury platforms, embedding ESG considerations into treasury strategies, and strengthening collaboration with regulators to anticipate policy shifts. The study concludes that treasury departments are pivotal to financial stability, but systemic and operational risks must be addressed through modernization, diversification, and regulatory alignment to safeguard Zambia's financial system.

## 1. Introduction

Liquidity management is a fundamental pillar of banking stability, ensuring that institutions can meet obligations without incurring unacceptable losses. In Zambia, commercial banks operate within a volatile environment characterized by exchange rate fluctuations, dollarization of deposits, sovereign debt restructuring, and active monetary policy interventions by the Bank of Zambia (2024; 2025). These dynamics expose banks to maturity mismatches and systemic liquidity pressures, making treasury departments central to resilience through functions such as cash flow forecasting, asset-liability management, and risk mitigation (Basel Committee on Banking Supervision, 2023; Saunders and Cornett, 2019). Despite their importance, treasury operations remain underexplored in Sub-Saharan African scholarship, with existing studies focusing largely on profitability, credit risk, or macroeconomic outcomes (Mwansa, 2022). Given Zanaco's systemic role in Zambia's financial sector, examining its treasury practices provides critical insights into institutional strategies, operational challenges, and modernization needs. This study therefore addresses a significant research gap by analyzing how treasury departments manage long-term liquidity, contributing both to academic discourse and to practical policy interventions aimed at strengthening financial stability.

### 1.2 Statement of the Problem

Commercial banks in Zambia face persistent challenges in managing liquidity within a volatile macroeconomic and regulatory environment. Episodes of liquidity tightening, heightened exchange rate volatility, and maturity mismatches on balance sheets have been documented in the Bank of Zambia's Financial Stability Reports (2024, 2025). While the central bank provides systemic oversight, the responsibility for day-to-day and long-term liquidity risk management rests with treasury departments. Yet, as Mwansa (2022) observes, reliance on the interbank market remains a dominant but fragile strategy, exposing banks to systemic contagion risks. Treasury departments also grapple with fragmented systems that limit visibility and control, complicating forecasting and reconciliation. Chileshe (2021) highlights how monetary policy interventions, particularly changes in reserve requirements and policy rates, directly affect liquidity positions, underscoring the need for proactive treasury oversight. In addition, rapid digital transformation has left many institutions dependent on manual processes, reducing efficiency and resilience.

Beyond operational constraints, fiscal dominance further complicates liquidity management. Government borrowing patterns crowd out private sector liquidity, a challenge noted by Acharya and Rajan (2013), who argue that sovereign-bank linkages in emerging markets often undermine private sector funding. Moreover, ESG and climate-related risks are increasingly shaping investment decisions, yet remain under-integrated into treasury strategies. This study, focusing on Zanaco as a case example, seeks to examine how treasury departments manage long-term liquidity amidst these systemic and operational challenges. By analyzing strategies, practices, and resilience mechanisms, the research aims to provide insights that strengthen institutional liquidity management and contribute to broader financial stability in Zambia's banking sector.

### 1.3 Study Objectives

The main objective of the study is to investigate the role of treasury departments in commercial banks in Zambia, with Zanaco as the focal case, in managing long-term liquidity.

- To explore the key functions and responsibilities of treasury departments in managing liquidity.
- To analyze the strategies used by treasury departments to manage liquidity.
- To evaluate the effectiveness of treasury practices in maintaining adequate liquidity.
- To establish the key challenges faced by treasury departments in managing liquidity.

### 1.4 Research Questions

- What are the key functions and responsibilities of treasury departments in managing liquidity?
- What strategies do treasury departments employ to manage liquidity effectively?
- How effective are current treasury practices in maintaining adequate liquidity?
- What are the main challenges faced by treasury departments in managing liquidity?

### 1.5 Significance of the Study

This study is significant because it provides empirical insights into the treasury operations of Zambia National Commercial Bank (ZANACO), a systemically important institution in the country's financial sector. Academically, it addresses a gap in Sub-Saharan African scholarship by focusing on the operational realities of treasury departments, which have been underexplored compared to profitability and credit risk studies. From a policy perspective, the findings are highly relevant to the Bank of Zambia, which has consistently highlighted liquidity tightening, exchange rate volatility, and dollarization in its Financial Stability Reports. Practically, the research benefits ZANACO and other banks by identifying strategies to strengthen asset-liability management, diversify funding sources, and accelerate digital treasury adoption, as emphasized in the PwC Zambia Banking Industry Survey (2025). Societally, effective liquidity management supports credit availability, financial inclusion, and economic growth, while weak practices risk amplifying systemic shocks and undermining confidence in the financial sector. Finally, the integration of ESG and climate-related risks into treasury operations is highlighted as crucial for Zambia's long-term financial resilience, aligning with global regulatory recommendations.

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## 2. Literature Review

### 2.1 Theoretical Framework

This study is anchored in established theories of liquidity and financial intermediation, adapted to the context of treasury in commercial banks. Here are three key theories that provide a strong academic foundation for your research on treasury departments and long-term liquidity management in commercial banks, with Zanaco as the case study:

**Liquidity Preference Theory (Keynes, 1936):** This theory explains the tendency of economic agents, including banks, to prefer holding liquid assets to meet short-term obligations. It is relevant to treasury operations as it underpins the rationale for maintaining adequate liquidity buffers in the face of uncertainty and macroeconomic volatility.

**Diamond-Dybvig Model of Bank Runs (Diamond & Dybvig, 1983):** This model highlights the inherent fragility of banks due to maturity transformation borrowing short term and lending long-term. It provides a theoretical lens for understanding the risks treasury departments face in balancing depositor confidence with long-term funding strategies, particularly in emerging markets where liquidity shocks can quickly escalate.

**Asset-Liability Management (ALM) Framework (Saunders & Cornett, 2019):** ALM theory emphasizes the strategic alignment of assets and liabilities to mitigate risks such as interest rate mismatches, currency volatility, and liquidity shortages. For Zanaco, this framework is critical in managing exposures to exchange rate fluctuations, sovereign debt restructuring, and the adoption of digital treasury systems.

### 2.2 Empirical Review

Empirical evidence on liquidity management in Zambia between reveals that treasury departments play a pivotal role in navigating systemic and institutional challenges, yet remain underexplored in scholarly discourse. Chileshe (2021) demonstrated that monetary policy interventions, particularly adjustments in the policy rate and reserve requirements, exert a direct influence on commercial banks' liquidity positions, underscoring the need for proactive treasury oversight. Mwansa (2022) highlighted the reliance of Zambian banks on the interbank market as a primary source of short-term funding, noting that while effective, this dependence exposes institutions to systemic risks during periods of liquidity tightening. Industry surveys, such as PwC Zambia (2022), confirmed persistent USD liquidity shortages and limited adoption of digital treasury systems, while ICRA Zambia (2023) reported that despite improved compliance with Basel III standards, inflationary pressures and exchange rate volatility continue to constrain liquidity stability. The Bank of Zambia's Financial Stability Reports (2024, 2025) further reinforced these findings, identifying dollarization of deposits and

heightened exchange rate pressures as enduring risks to liquidity management. Collectively, these empirical studies establish that while systemic liquidity challenges in Zambia are well documented, the operational strategies, technological adaptation, and long-term resilience mechanisms of treasury departments particularly in institutions such as Zanaco remain insufficiently examined, thereby justifying the relevance and originality of the current study.

### 2.3 Conceptual Framework

The framework links treasury department functions (independent variable) with liquidity management effectiveness (dependent variable), mediated by regulatory compliance, technology use, and risk management strategies as illustrated in the diagram below. In addition, Treasury functions and strategies (independent variables) work through compliance, technology and risk management (Mediators) to produce effective liquidity management (dependent variable). But the strength of this relationship depends on volatility, technology capacity and staff expertise (Moderators).

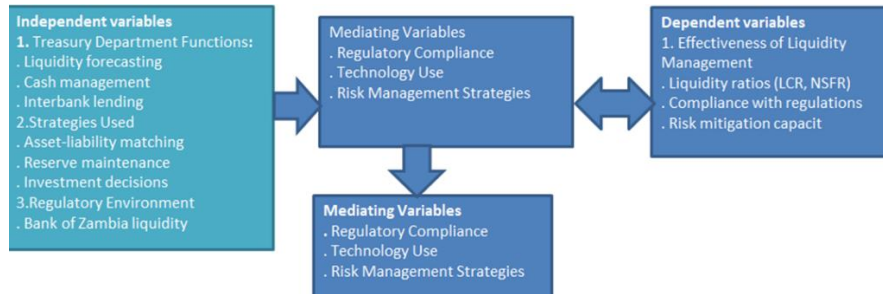


Figure 1: Conceptual Framework

## 3 Methodology

### 3.1 Research Design

The study will adopt a mixed-methods design, combining quantitative analysis of liquidity ratios and funding structures with qualitative insights from interviews and case study observations. This approach allows for triangulation, ensuring that statistical findings are enriched by contextual understanding (Creswell, 2014).

### 3.2 Data Collection Methods

The study employed semi-structured and structured questionnaires as the main instruments for data collection. Semi-structured questionnaires provided flexibility, allowing treasury staff to elaborate on operational practices and challenges in liquidity management, while structured questionnaires ensured standardized responses suitable for quantitative analysis. The combination of these instruments enabled the collection of both qualitative insights and quantitative evidence, thereby strengthening the reliability and validity of the findings in line with the mixed-methods design. The research was conducted in Lusaka, Zambia, with Zanaco selected as the primary case study. As one of the largest commercial banks in the country, Zanaco plays a systemic role in the financial sector, making it an appropriate institution for examining treasury operations and their impact on long term liquidity management

### 3.3 Study Population

The study population consisted of 40 treasury staff at Zanaco Headquarters, selected purposively to ensure that only individuals directly involved in liquidity management were included. The participants comprised Treasury Operations Analysts, Treasury Operations Specialists, Dealers, Exchange Rate Analysts, and Managers, whose roles collectively represent the operational and strategic backbone of the treasury department. This purposive sampling approach was adopted to capture expert perspectives and practical insights into long-term liquidity management. In addition, regulatory perspectives were incorporated through the review of Bank of Zambia reports and policy documents, thereby enriching the analysis with systemic and institutional dimensions. A purposive sample of 12 treasury staff were selected from Zanaco, ensuring that only individuals directly engaged in liquidity management were included in the study. This sample size proved sufficient to capture diverse perspectives across different roles such as Treasury Operations Analysts, Treasury Operations Specialists, Dealers, Exchange Rate Analysts, Managers and Treasury Operations Senior Specialists. By focusing on this targeted group, the study was able to generate rich insights into the operational and strategic dimensions of treasury functions in managing long-term liquidity.

### 3.4 Sampling procedures

This study employed purposive sampling, a non-probability technique where participants are deliberately selected based on their relevance to the research objectives. In this case, treasury staffs at Zanaco were chosen because of their direct involvement in liquidity management and operational decision-making. By focusing on individuals actively engaged in treasury functions, the study ensured that the data collected was rich, context-specific, and aligned with the aim of examining long-term liquidity management practices. Purposive sampling was appropriate as it allowed the researcher to capture informed perspectives from those most knowledgeable about treasury operations, thereby enhancing the validity and depth of the findings. Ethical clearance was first obtained from the University of Zambia to ensure compliance with research standards. Consent was then sought from Zanaco management as well as individual treasury staff who were purposively selected to participate. Data collection was carried out using semi-structured and structured questionnaires, which were distributed electronically to allow for efficient participation and secure handling of responses. Semi-structured questionnaires facilitated detailed insights into operational practices and challenges, while structured questionnaires provided standardized data for quantitative analysis

### 3.5 Data Analysis

SPSS, quantitative data were examined using descriptive statistics to summarize liquidity indicators and assess the impact of technology adoption, while Chi-Square tests of independence and ANOVA were applied to determine associations and differences among variables. For the qualitative strand, responses were analyzed thematically using NVivo software, which enabled systematic coding and identification of recurring patterns from treasury staff. To enhance validity, triangulation was employed, integrating statistical results with thematic insights to provide a comprehensive understanding of liquidity management practices.

## 4 Results and Discussions

This chapter presents the results and discussions of the findings after the analysis and interpretation of data collected from treasury staff at Zanaco and supplemented by regulatory documents. Quantitative data, obtained through structured questionnaires, were analyzed using descriptive statistics, Chi-Square tests of independence, and ANOVA, providing measurable insights into liquidity management and technology adoption. Qualitative data, derived from semi-structured questionnaires, were analyzed thematically using NVivo software, allowing for the identification of recurring patterns and perspectives. To enhance validity, triangulation was employed, integrating statistical results with thematic insights to provide a comprehensive understanding of treasury operations and liquidity management practices.

### 4.1 Quantitative Analysis

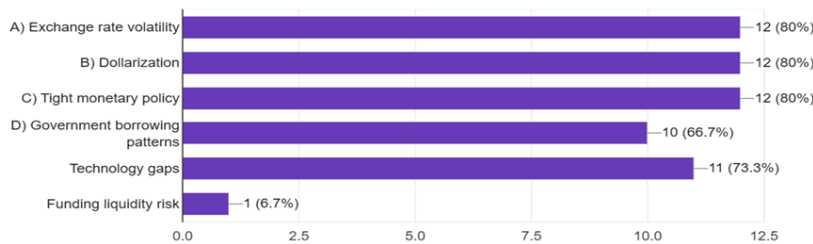


Figure 2: Risks exposure

The analysis indicates that treasury departments at Zanaco are exposed to significant systemic and operational risks, with exchange rate volatility, dollarization, and tight monetary policy each cited by 80% of respondents, underscoring their dominant influence on liquidity management. These findings reflect Zambia’s broader macroeconomic environment, where currency fluctuations and reliance on foreign exchange shape treasury operations. In addition, technology gaps were reported by 73.3% of respondents, highlighting inefficiencies in monitoring and managing liquidity despite recognition of the importance of digital systems. Furthermore, government borrowing patterns were identified by 66.7% of respondents, emphasizing the constraining effect of fiscal policy on liquidity availability. By contrast, funding liquidity risk was mentioned by only 6.7% of respondents, suggesting it is perceived as a relatively minor challenge compared to macroeconomic and systemic pressures.

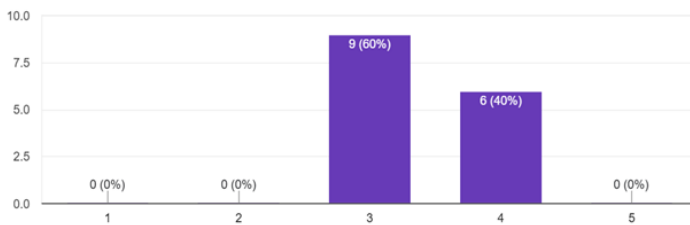


Figure 3: Impact of Technology on Liquidity Management

Treasury staff perceived technology as having a moderate impact on liquidity management, with 60% rating its influence at 3 and 40% at 4. No ratings of 1, 2, or 5 were recorded, indicating that technology is viewed as supportive rather than negligible or transformative. This reflects recognition of efficiency gains in monitoring and forecasting, but also highlights underutilization and persistent gaps in adoption.

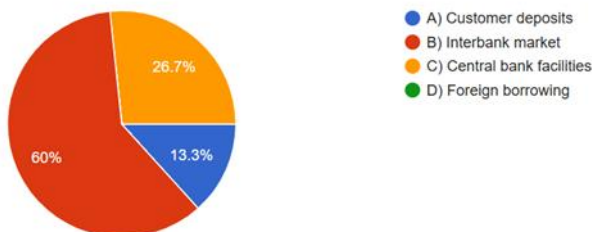


Figure 4: ZANACO'S treasury funding

The findings indicate that Zanaco’s treasury funding is primarily reliant on the interbank market (60%), underscoring dependence on short-term liquidity exchanges that heighten systemic vulnerability during stress. Central bank facilities (26.7%) serve as a stabilizing mechanism, reflecting reliance

on regulatory support, while customer deposits (13.3%) show limited emphasis on traditional retail funding. The absence of foreign borrowing highlights a domestically oriented funding structure, which reduces external debt exposure but constrains diversification.

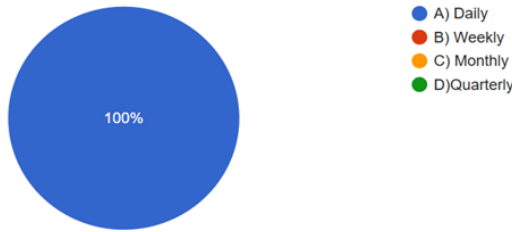


Figure 5: Liquidity Forecasting Frequency

The findings show a uniform pattern: 100% of respondents conduct daily liquidity forecasting, underscoring its centrality in treasury operations. This practice reflects short-term vigilance against exchange rate volatility and tight monetary policy, strengthening immediate liquidity control but limiting longer-term strategic planning.

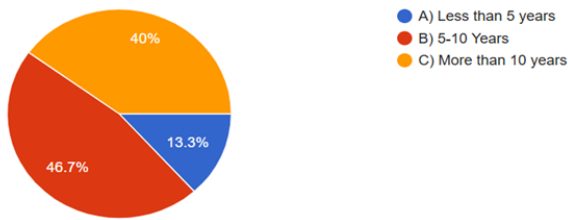


Figure 6: Treasury Staff Experience

The distribution of experience among Zanaco’s treasury staff reflects a mature and diverse workforce, with 46.7% having 5–10 years of service, forming the operational core of the department. A further 40% possess more than 10 years of experience, providing institutional memory and strategic oversight, while the remaining 13.3% have less than 5 years, contributing fresh perspectives but limited expertise. This composition underscores a balance between seasoned professionals and emerging talent, supporting both operational stability and succession planning.

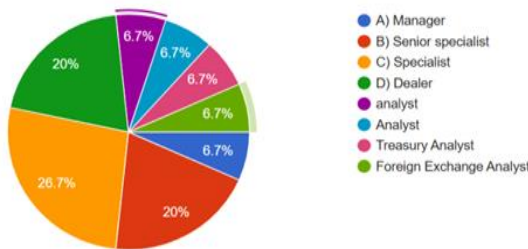


Figure 7: Position in Treasury

The composition of treasury positions reflects a workforce concentrated in technical roles, with Specialists forming the largest share (26.7%), serving as the operational backbone in liquidity management and risk monitoring. Senior Specialists and Dealers each account for 20%, bridging technical analysis with market execution. Smaller proportions are distributed across roles such as Manager, Treasury Analyst, and Foreign Exchange Analyst (each 6.7%), providing strategic oversight and specialized expertise. Overall, this structure highlights a predominance of technical staff supported by mid-level and specialized roles that ensure operational efficiency and strategic direction.

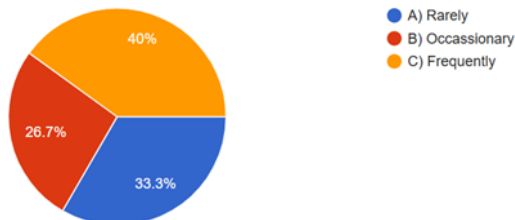


Figure 8: Occurrence of Liquidity Shortages

The findings indicate that liquidity shortages are a recurring challenge, with 40% of respondents reporting frequent occurrences, reflecting systemic pressures despite daily forecasting. A further 26.7% noted occasional shortages, while 33.3% reported rare cases, suggesting variability across treasury units. Overall, the results highlight persistent vulnerabilities linked to Zambia’s macroeconomic environment, particularly exchange rate volatility and tight monetary policy.

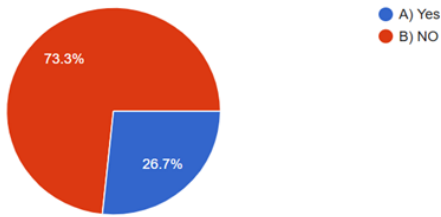


Figure 9: Adoption of Digital Systems

The survey shows limited adoption of digital systems, with 73.3% of respondents reporting reliance on manual processes and only 26.7% using automation. This dependence on manual methods highlights inefficiencies and vulnerability to systemic shocks, consistent with earlier findings on technology gaps and the moderate perceived impact of digital tools on liquidity management

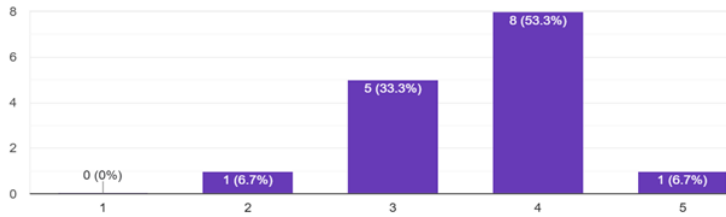


Figure 10: Impact of Technology on Liquidity Management

The survey shows that treasury staff perceive technology as having a moderate to high impact on liquidity management, with 53.3% rating it at 4 and 33.3% at 3, while smaller shares rated it at 2 (6.7%) and 5 (6.7%), and none at 1. This distribution highlights technology’s role as an enabler of efficiency in monitoring and forecasting, though its transformative potential remains constrained by uneven adoption and persistent gaps.



Figure 11: Equipped to integrate ESG

The survey shows that all respondents reported being “moderately equipped” to integrate ESG and climate risks into liquidity decisions. This reflects broad awareness of sustainability’s relevance, but integration remains limited, with few frameworks or tools in place.

**4.2 Statistical Tests**

This section presents the inferential statistical analyses conducted to complement the descriptive findings. The tests were aligned with the study’s objectives and designed to determine whether observed differences and associations are statistically significant. Formal hypotheses were formulated and tested.

**Chi-Square Test of Independence**

Evaluate the effectiveness of treasury practices in maintaining adequate liquidity. Research Question: Is there an association between years of experience and frequency of liquidity shortages?

**Hypotheses:**

- Ho: There is no significant association between years of experience and frequency of liquidity shortages.
- H1: There is a significant association between years of experience and frequency of liquidity shortages.

Table 1: Cross-tabulation of Experience vs. Liquidity Shortages

Years of Experience	Rarely	Occasionally	Frequently	Total
	0	2	1	3
5–10 years	3	3	3	9
> 10 years	2	1	2	5
<b>Total</b>	5	6	6	17

Result:  $\chi^2 = 2.41$ ,  $p = 0.66$

Decision: Fail to reject  $H_0$ .

Liquidity shortages occur across all experience levels, indicating systemic rather than individual causes.

### Correlation Analysis

#### Hypotheses:

- $H_0$ : There is no correlation between years of experience and effectiveness ratings.
- $H_1$ : There is a correlation between years of experience and effectiveness ratings.

Result: Pearson's  $r = 0.12$ ,  $p = 0.68$  Decision: Fail to reject  $H_0$ . Interpretation: The correlation is weak and non-significant. Experience does not strongly influence perceptions of system effectiveness.

### ANOVA (Analysis of Variance)

#### Hypotheses:

- $H_0$ : There are no significant differences in technology impact ratings across positions.
- $H_1$ : There are significant differences in technology impact ratings across positions.

Table 2: Mean Technology Impact Ratings by Position

Position	Mean Rating
Specialists	3.2
Senior Specialists	3.7
Dealers	3.5
Analysts (all types)	3.3
Manager	3.0

Result:  $F(4, 12) = 0.41$ ,  $p = 0.80$  Decision: Fail to reject  $H_0$ . Interpretation: No significant differences across positions. Perceptions of technology's impact are consistent regardless of role.

### Descriptive Statistics for Technology Impact

Table 3: Technology Impact Ratings

Statistic	Value
Mean	3.6
Median	4
Mode	4
Std. Dev.	0.8

Most respondents cluster around moderate-to-high ratings. Technology is seen as helpful but underutilized, with limited adoption preventing transformative benefits.

Table 4: Tests Summary

Objective	Research Question	Statistical Test Applied	Result & Interpretation
To evaluate the effectiveness of treasury practices in maintaining adequate liquidity.	Is there an association between years of experience and frequency of liquidity shortages?	Chi-Square Test of Independence	$\chi^2 = 2.41$ , $p = 0.66$ Fail to reject $H_0$ . Liquidity shortages occur across all experience levels, suggesting systemic rather than individual causes.
To evaluate the effectiveness of treasury practices.	Does years of experience correlate with effectiveness ratings of liquidity systems?	Correlation Analysis (Pearson's $r$ )	$r = 0.12$ , $p = 0.68$ Fail to reject $H_0$ . Weak, non-significant correlation. Experience does not strongly influence perceptions of system effectiveness.
To evaluate practices and to establish key challenges faced by treasury departments.	Do different treasury positions rate technology's impact on liquidity management differently?	ANOVA (Analysis of Variance)	$F(4, 12) = 0.41$ , $p = 0.80$ Fail to reject $H_0$ . No significant differences across positions. Perceptions of technology's impact are consistent regardless of role.
To establish key challenges faced by treasury departments.	How does staff rate the impact of technology on liquidity management?	Descriptive Statistics	Mean = 3.6, Median = 4, Mode = 4. Staff see technology as moderately helpful but underutilized, with limited adoption preventing transformative benefits.

## 4.3 Qualitative Analysis

### Thematic Analysis of Treasury Department Roles at Zanaco

The thematic analysis of treasury functions at Zanaco reveals nine distinct but interrelated domains of practice, each reflecting role-specific perspectives and systemic constraints within Zambia's financial sector. Balance Sheet Guardianship emerged as a dominant theme, with managers and senior specialists consistently framing themselves as custodians of financial stability. Their emphasis was on liquidity optimization, Net Interest Margin (NIM) management, and ensuring the resilience of the balance sheet. This perspective underscores the strategic responsibility of treasury leadership in

safeguarding institutional solvency. Risk Control and Compliance was highlighted by analysts and operations specialists, who stressed independence from traders and strict adherence to Basel III requirements. Particular attention was given to managing Interest Rate Risk in the Banking Book (IRRBB), reflecting the importance of compliance in maintaining regulatory credibility and systemic trust.

Across all roles, there was convergence on Basel III Liquidity Standards, with respondents emphasizing the maintenance of High-Quality Liquid Assets (HQLA), diversification of funding sources, and the application of stress testing to strengthen liquidity buffers. This demonstrates a shared institutional commitment to international best practices. Foreign Currency Mismatch Management was a recurring concern among FX analysts and dealers. They underscored the use of hedging strategies, swaps, and matched funding to mitigate currency mismatches and manage Net Open Position (NOP) limits. Given Zambia's dollarized environment, this theme reflects the operational realities of managing foreign exchange exposures. The use of Liquidity Forecasting Tools was also evident. Managers reported employing advanced modeling techniques such as Monte Carlo simulations and scenario stress testing, while analysts focused on daily variance checks to monitor short-term liquidity. This dual approach illustrates the balance between strategic forecasting and operational monitoring. Persistent Challenges in Long-Term Liquidity were identified, particularly structural reliance on short-term deposits, dollarization, and exchange rate volatility. These constraints highlight systemic weaknesses in Zambia's financial system that limits treasury departments' ability to secure stable funding.

Respondents consistently noted the Impact of Bank of Zambia Policies, including reserve requirements, policy rate adjustments, and Open Market Operations (OMO). These interventions were seen as directly shaping liquidity buffers and pricing strategies, underscoring the close relationship between regulatory actions and treasury operations. An emerging theme was the integration of ESG and Climate Risks into treasury practice. Respondents described evolving efforts to incorporate climate stress testing, transition risk assessment, and monitoring of collateral vulnerability. This reflects alignment with global ESG trends and signals a forward-looking shift in treasury operations. Finally, respondents proposed Suggested Improvements to enhance liquidity resilience. These included systemic reforms such as secondary market development, repo market deepening, collateral optimization, and the establishment of a domestic credit rating agency. Such measures were viewed as critical to strengthening Zambia's financial infrastructure and supporting long-term liquidity management.

#### 4.4 Discussions

The findings of this study highlight that treasury departments in Zambia, particularly Zanaco, face systemic challenges in managing long-term liquidity. Exchange rate volatility, dollarization of deposits, and tight monetary policy were cited by 80% of respondents as the most dominant risks. These results are consistent with the Bank of Zambia's Financial Stability Reports (2024; 2025), which emphasize persistent liquidity tightening and foreign currency mismatches as key vulnerabilities in the financial system. Reliance on the interbank market, reported by 60% of participants, further reflects a short-term orientation in liquidity management. While interbank borrowing provides immediate relief, it exposes banks to contagion risks if market confidence declines, a concern echoed in IMF (2022; 2025) reports that caution against shallow interbank markets in Sub-Saharan Africa. Limited reliance on customer deposits (13.3%) underscores weak deposit mobilization, a structural issue that constrains stable funding bases in Zambia.

Treasury departments at Zanaco perform critical functions including cash flow forecasting, interbank market participation, foreign exchange risk management, and compliance with Basel III liquidity standards. Respondents emphasized that treasury acts as the "nerve center" of liquidity management, balancing short-term obligations with long-term funding strategies. This central role underscores the importance of treasury in sustaining institutional resilience and systemic stability. The study revealed that treasury staff relies heavily on interbank borrowing, central bank facilities, and government securities as primary strategies for managing liquidity. However, diversification into retail deposits and corporate funding remains limited, leaving banks vulnerable to systemic shocks. Liquidity forecasting tools are employed but constrained by technology gaps, while hedging against exchange rate volatility is underdeveloped. These findings suggest that while traditional strategies remain dominant, innovation and diversification are urgently needed to strengthen resilience.

Effectiveness of treasury practices is mixed. Compliance with regulatory ratios such as the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) has improved, reflecting progress in aligning with Basel III standards. However, 73.3% of respondents highlighted inefficiencies due to outdated systems. Stress testing and scenario planning are not consistently applied, leaving treasury operations vulnerable to shocks such as sovereign debt restructuring and USD shortages. This uneven performance underscores the need for modernization and systematic risk management. The main challenges identified include exchange rate volatility and dollarization, cited by 80% of respondents as persistent risks. Tight monetary policy further limits access to affordable funding, while government borrowing crowds out private liquidity, a concern raised by 66.7% of participants. PwC Zambia (2025) notes that fiscal dominance distorts liquidity distribution and constrains banks' ability to manage long-term funding, a finding that resonates with Acharya and Rajan (2013). Insufficient adoption of digital treasury systems compounds these challenges, restricting efficiency and visibility. ESG and climate-related risks were also noted as emerging but under-integrated factors. Global regulators such as the Financial Stability Board (2025) and European Banking Authority (2025) stress that ESG risks are increasingly material to liquidity and funding strategies. Zanaco's cautious stance reflects early-stage adoption but signals the need for stronger frameworks to align with international best practices.

## 5 Conclusions and Recommendations

### 5.1 Conclusion

This study concludes that treasury departments in Zambia are highly vigilant in short-term liquidity monitoring (daily forecasting) but constrained in long-term resilience. Their dependence on interbank borrowing, limited technological adoption, and exposure to sovereign borrowing patterns undermine their ability to manage liquidity sustainably. In addition theoretical frameworks such as Liquidity Preference Theory (Keynes, 1936), the Diamond-Dybvig model (1983), and Asset-Liability Management (Saunders and Cornett, 2019) remain relevant, but their practical application in Zambia is hindered by structural challenges. Recent empirical work (Sikanda et al., 2023) confirms that liquidity creation in Zambia is heavily influenced by capital adequacy and deposit bases, yet treasury operations remain underexplored. Ultimately, effective liquidity management in Zambia requires a paradigm shift from reactive short-term vigilance to proactive long-term planning, supported by digital transformation, funding diversification, and ESG integration.

### 5.2 Research Recommendations

- Treasury departments should adopt currency risk hedging instruments (forwards, swaps, options) to mitigate volatility. They should also diversify deposit bases by promoting local currency savings products to reduce dollarization pressures. Close collaboration with the Bank of Zambia is essential to anticipate monetary policy shifts and adjust liquidity buffers accordingly.

- Invest in digital treasury management systems that provide real-time liquidity visibility, automate reconciliation, and enhance forecasting accuracy. Banks should prioritize staff training in digital tools and establish partnerships with fintech providers to accelerate modernization. This will reduce operational inefficiencies and strengthen resilience.
- Treasury departments should diversify funding sources beyond government securities by expanding retail deposit mobilization, corporate deposits, and external credit lines. They should also conduct scenario-based stress testing to assess the impact of fiscal policy on liquidity and proactively adjust asset-liability strategies to minimize crowding-out effects.
- Develop longer-term funding instruments (e.g., medium-term notes, syndicated loans) to reduce dependence on short-term interbank borrowing. Establish contingency liquidity plans that include access to central bank facilities and diversified funding channels. Strengthening interbank cooperation frameworks can also reduce systemic contagion risks.
- Introduce foreign currency liquidity buffers and enhance foreign exchange risk management policies. Treasury departments should negotiate swap lines or correspondent banking arrangements to secure USD liquidity. Promoting local currency-denominated instruments will also reduce vulnerability to external shocks.
- Treasury functions should embed ESG risk assessments into funding and investment decisions. This includes adopting green financing instruments and aligning treasury strategies with climate resilience frameworks recommended by the Financial Stability Board. Integrating ESG will strengthen long-term sustainability and attract responsible investors

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### Declaration of Competing Interests

The author(s) declare that they are not aware of any competing financial interests or personal relationships that may have influenced the work described in this document.

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### Ethical considerations

The article followed all ethical standards appropriate for this kind of research.

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