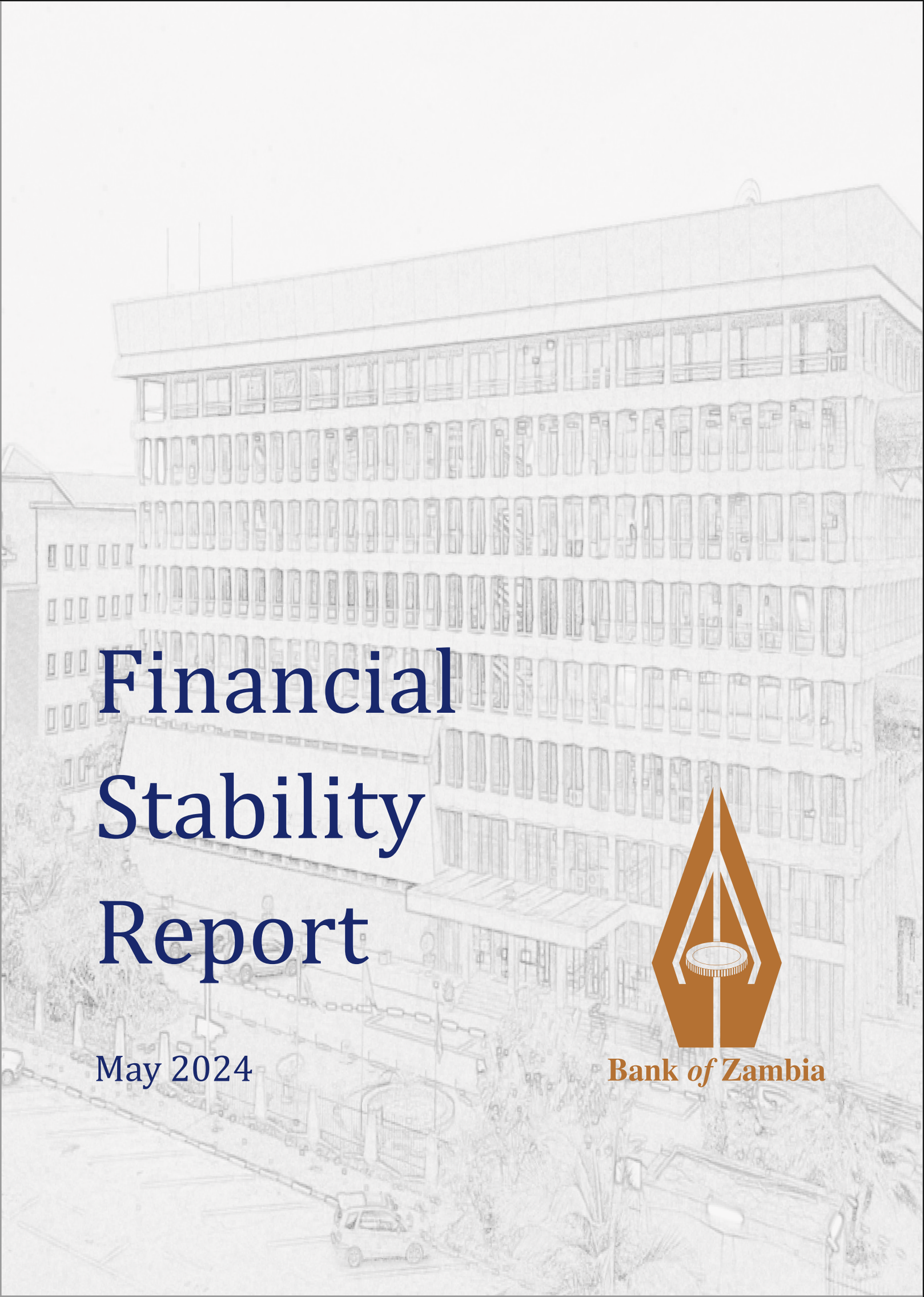

Financial Stability Report

May 2024

Bank *of* Zambia

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This *Financial Stability Report* (FSR) is published pursuant to section 34 (2) of the Bank of Zambia Act, 2022. The report highlights key vulnerabilities and risks that may result in systemic risk concerns and thereby compromise financial stability. It also highlights macroprudential policy tool(s) that may be deployed to mitigate risks to the financial system.

The FSR was approved by the Financial Stability Committee ("FSC" or "Committee") in May 2024 and contains information available as at the time of approval.

As prescribed under section 32 (1) of the Act, members of the FSC are as follows:

1. Governor – Chairperson (Dr. Denny H. Kalyalya);
2. Deputy Governor responsible for financial stability – Vice Chairperson (Dr. Francis Chipimo);
3. Deputy Governor responsible for administration (Ms. Rekha C. Mhango);
4. Bank of Zambia senior management staff responsible for research (Dr. Jonathan M. Chipili);
5. Bank of Zambia senior management staff responsible for legal matters (Ms. Namwandi Ndhlovu);
6. Bank of Zambia senior management staff responsible for financial stability (Mr. Goodson Kataya);
7. Representative of the Securities and Exchange Commission (Mr. Philip K. Chitalu); and
8. Representative of the Pensions and Insurance Authority (Ms. Namakau M. Ntini).

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Preface

The Bank monitors the build-up of systemic risk within the components of the financial system wherein various indicators associated with each component are analysed individually and as a group. The components are the macroeconomic conditions, financial markets, institutions and infrastructure (which covers developments in the payment systems, legal and regulatory environment).

Pursuant to section 5(1) of the Bank of Zambia Act, 2022, the Bank of Zambia formulates and implements monetary and supervisory policies to achieve and maintain price and financial system stability. Specifically, the FSC meets twice a year, in April and October, to review systemic risk developments over the past six months, and decide on appropriate macroprudential policy measures.

The macroprudential decision-making process starts with the assessment of whether the buildup in systemic risk is strong enough and requires action. Thereafter, an assessment of the macroprudential tool(s) that should be activated to mitigate the risk are identified. The activation of a macroprudential tool involves determination of the type of instrument, timing (when) and its calibration (level). If an instrument is already active, a decision must be made whether to increase, maintain or decrease its level. While the FSC has a number of policy instruments at its disposal, the countercyclical capital buffer (CCyB) is its key instrument for macroprudential policy.

Glossary of Key Terms

Unless or otherwise stated, in this report,

Financial stability shall mean that the financial system, comprising financial intermediaries, markets, and market infrastructure, is resilient to adverse shocks and can smoothly conduct its core tasks of intermediation of financing, transmission of payments, pricing of instruments and redistribution of risks appropriately to effectively contribute to sustained economic growth.

Systemic risk shall refer to the possibility that distress or failure of individual financial institutions, markets, infrastructure, or instruments triggers severe instability or collapse of the entire system and has negative consequences for the real economy.

A vulnerability shall be described as a weakness or pre-existing condition which, if it interacts with a realized risk, would amplify the financial system stress.

Resilience shall refer to the capacity of financial institutions, markets, or payments system to absorb shocks and prevent them from amplifying and causing distress.

Macroprudential shall mean the use of prudential tools to limit systemic risks by strengthening the resilience of the financial system and decreasing the build-up of vulnerabilities, thereby ensuring a sustainable contribution of the financial sector to economic growth.

1. Overview of the Financial Stability Assessment

Risks to financial stability are assessed to have been moderate in the six months to March 2024 (between 2023 Q3 and 2024 Q1) amid tightening domestic financial conditions (Table 1 and Chart 1). Key vulnerabilities identified include low financial intermediation, sovereign-bank nexus, concentration of loans as well as dollarization of loans and deposits on banks' balance sheets. Key risks include the emergent drought, lower domestic growth, an escalation in geopolitical tensions, cyber-attacks and heightened exchange rate volatility.

Table 1: Financial Stability Heatmap*

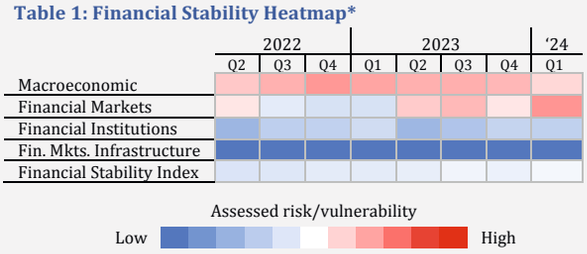
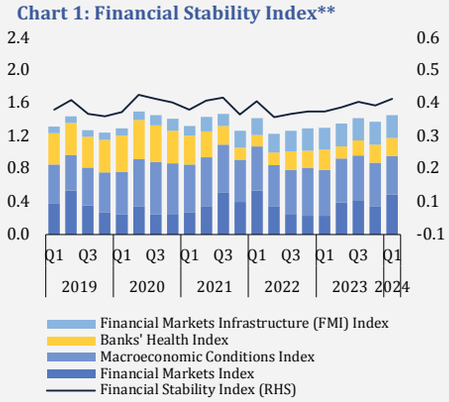


Chart 1: Financial Stability Index**



Note: * The Appendix provides details on how to interpret the heatmap. ** The Financial Stability Index , Chart 1, depicts the evolution of systemic risk in the financial system. An increase in the index implies increasing systemic risk while a decrease represents a decline. It also shows the evolution of risk in the main segments of the financial system and their contribution to the overall financial

Global macrofinancial conditions were broadly stable in the six months to March 2024 as headline inflation in advanced economies continued to trend downwards. The resilience of the external sector improved following increases in copper prices and reserves adequacy. The fiscal sector outlook has brightened as the public external debt restructuring draws to a close. Growth in private sector credit was moderate as financial intermediation remained low. Growth in output slowed and inflationary pressures continued mounting amidst the continued depreciation of the exchange rate of the kwacha against the major currencies. Near-term prospects for growth, and financial stability, have been adversely affected by the El Nino-induced drought and its attendant risks relating to lower agriculture output and deficiencies in electricity supply.

The risks associated with markets are assessed to have broadly increased following tighter liquidity conditions in money markets and a surge in exchange rate volatility. Interest rate conditions broadly tightened after BoZ raised its Policy Rate and statutory reserve ratio (SRR) to rein in mounting inflationary pressures. Exchange rate volatility surged above its 14-year historical average as the kwacha experienced both appreciation and depreciation against the US dollar.

Notwithstanding the recent failure of a local bank, commercial banks' capital and liquidity positions continue to be robust, underpinning their resilience to unexpected losses. However, their balance sheets remain beset with persistent imbalances, including elevated exposure to government, concentration of credit, dollarization of loans and deposits, as well as maturity mismatches. Although these imbalances are more than offset by adequate capital and liquidity buffers in the near term, they need to be managed to limit the systemic risk they may pose.

The financial market infrastructure is assessed to have remained resilient and continued to efficiently facilitate the transfer and settlement of funds between counterparties without

disruption. However, there remains a growing risk of cyber-attacks, especially as the digitalization of financial services and dependence on technology in finance accelerates. Since the Global Financial Crisis (GFC) of 2007-2008, however, BoZ has made legislative reforms, with the new Bank of Zambia Act, 2022 and amendments to the Banking and Financial Services Act (BFSA) expected to enhance capacity to effectively respond to the build-up of systemic risk and preserve financial stability.

The May 2024 round of the stress test examines the potential severe impact of the drought on the health of the banking system. Simulation results indicate that commercial banks' intermediation function would weaken as deposit mobilization and the flow of credit get constrained. In addition, commercial banks would face higher credit risk and experience reduced profitability. Although there would be a reduction in buffers, the banking sector would remain adequately capitalized and resilient.

Commercial banks' capital remains well above the regulatory requirement, underpinning their resilience to unexpected losses even through periods of stress, prospects for growth have been dented by the emergent drought, and credit-to-GDP gap is below the Basel III threshold. Therefore, the FSC set the **countercyclical capital buffer** at **0.0 percent**. The Committee remains cognizant of the elevated dollarization of deposits and loans, sovereign-bank nexus and the maturity mismatches prevailing on commercial banks' balance sheet. Nonetheless, it was judged that no macroprudential capital and liquidity measures should be activated.

Illustrative Summary of Possible Financial Stability Implications Arising from the Identified Systemic Risk.

Potential sources of financial instability		Possible impact on...		
Vulnerabilities	**Risks**	**Financial markets**	**Financial institutions**	**Macroeconomic conditions**
• **Low financial intermediation:** banks are not channelling sufficient liquidity to businesses and households. • **High concentration of credit:** Commercial banks credit portfolio is skewed towards a few sectors. • **Sovereign-bank nexus**: strong interlinkages between banks and the government	• **Severe impact of the drought** leading lower agriculture output and tapered electricity generation. • **Lower domestic growth:** Subdued electricity supply leads to muted production across industries. Electricity shortages would also lead to higher production costs and higher inflation.	• Flow of liquidity may tighten. • Interest rates could rise. • Exchange rate could depreciate. • Asset prices could fall.	• Asset quality may deteriorate. • Profitability may fall. • Liquidity and funding may reduce. • Solvency could be undermined.	• Lower incomes for businesses and households. • Higher government spending. • Limited access to credit for businesses and households. • Lower production. • Increased difficulty to service loans. • Reduced purchasing power.
• **Dollarization of loans and deposits:** there is an elevated share of foreign currency denominated loans and deposits.	• **Higher Foreign currency volatility** • **An escalation of geopolitical tensions:** leading to supply chain disruption, higher food and energy costs and consequently higher interest rates and lower capital inflows.	• Interest rates could rise. • Exchange rate could depreciate.	• Asset quality may deteriorate. • Profitability may fall. • Solvency could be undermined	• Increased difficulty to service loans. • Reduced purchasing power.

Interacts with
Leads to
Leads to, feedback loop

2. Systemic Risk Analysis

Macroeconomic Conditions

Global macrofinancial conditions were broadly stable as headline inflation in advanced economies continued to trend downwards. The resilience of the external sector is assessed to have improved following increases in copper prices and reserves adequacy. The fiscal sector outlook brightened as public debt restructuring draws to a close. Growth in private sector credit has moderated as financial intermediation remained low. Growth in output slowed and inflationary pressures continued mounting amidst persistent depreciation of the exchange rate. Near-term prospects for growth, and financial stability, have been adversely affected by the El Nino-induced drought and its attendant risks relating to lower agriculture output and deficiency in power supply (Table 2 and Chart 2).

Table 2: Macroeconomic Environment Heatmap

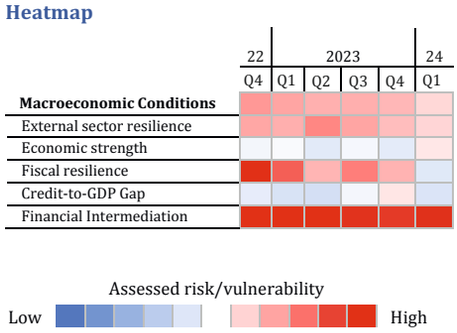
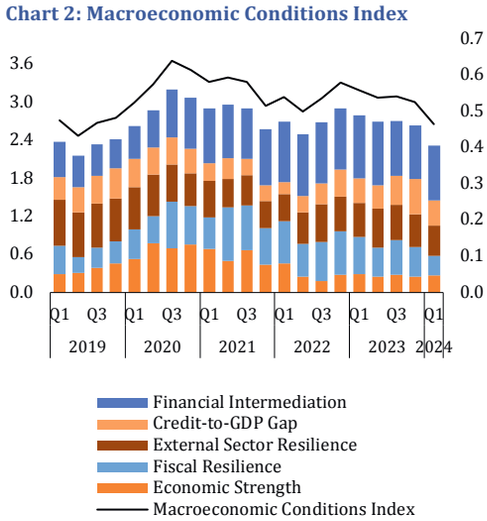


Chart 2: Macroeconomic Conditions Index

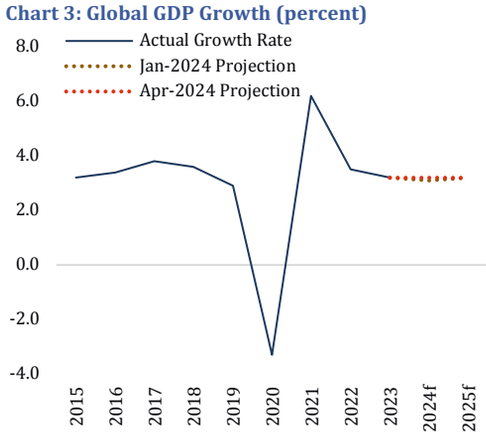


Global Macrofinancial Conditions Stable

Global economic activity was broadly stable in the six months to March 2024 (2023 Q4 -2024Q1). While slowing growth in consumer and government spending moderated US real GDP growth, which remained unchanged at 3.3 percent and a tight monetary policy dragged euro area growth lower to 0.7 percent, a combination of stimulus measures and a rebound in services and industrial output led to a faster growth of 5.2 percent in Chinese output (Chart 3). However, worsening real estate woes and local government financing, and falling equity valuations in China are raising financial stability concerns and tainting market sentiment.

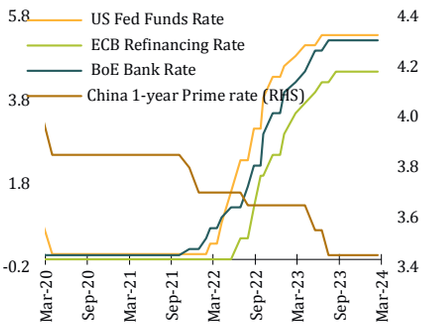
Headline inflation in advanced economies remained above the 2 percent target despite exhibiting a downward trend. The stickiness in inflation was attributed to continued economic resilience bolstered by an improvement in manufacturing activity and strong consumer spending as labour markets remained tight and wages continued to grow. In this regard, major central banks kept policy rates unchanged (Chart 4) and indicated they may need to maintain high interest rates for longer to effectively anchor inflation expectations. Annual inflation in the US fell to 3.5 percent in March 2024 from 3.7 percent in September 2023. In the UK, it declined to 3.2 percent from 6.7 percent while it reduced in the euro area to 2.4 percent from 4.3 percent.

Chart 3: Global GDP Growth (percent)



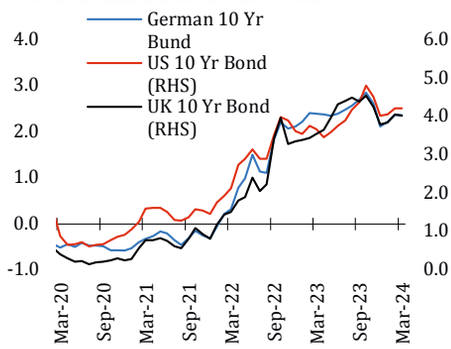
Source: IMF World Economic Outlook (WEO) Update, April 2024 and Bank of Zambia Compilations

Chart 4: Selected Central Bank Policy Rates (Percent)



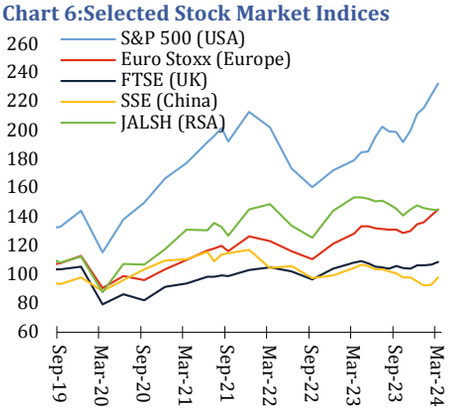
Source: Reuters and Bank of Zambia

Chart 5:US, UK, and German Average 10-Year Benchmark Bond Yield Rates



Source: Reuters and Bank of Zambia Compilations

Chart 6:Selected Stock Market Indices



Source: Reuters and Bank of Zambia Compilations

Table 3: External Sector Resilience Heatmap

24

	2023				24
	Q1	Q2	Q3	Q4	Q1
External Sector Resilience					
Current a/c bal-GDP					
Price of copper					
Reserves adequacy					
NRIGS					

Note: NRIGS stands for non-resident investments in government securities and GIR for gross international reserves.

Benchmark US, UK, and Germany 10-year government bond yield fell (Chart 5) on market expectations that major central banks would begin to cut interest rates in 2024. Share prices also gained with the S&P 500, Euro Stoxx 50 and FTSE 100 indices rising by 23.8 percent, 21.8 percent, and 4.5 percent (Chart 6). The MSCI Emerging Market Equity Index rose by 9.5 percent mainly on account of a rebound in Chinese equities following fiscal and monetary stimulus measures.

Amidst these developments, key global vulnerabilities identified include broad devaluation of residential property prices and growing defaults in commercial real estate, imbalances on some financial institutions balance sheets (grappling with higher funding costs), and public debt distress in some emerging and frontier markets. Key global risks include elevated interest rates should inflation remain high, escalation in geopolitical tensions, and cyberattacks (refer to Box A for details).

Resilience of the External Sector Improves, but Threats Loom

The resilience of the external sector is assessed to have improved in the six months to March 2024 albeit threats loom in the near-term. The improvement was due to increases in copper prices (Zambia's primary export) and reserves adequacy, as well as a drastic decline in the proportion of non-resident investments in government securities, which fell by over 30 percentage points to 61.4 percent (Table 3, Chart 7, Chart 8, and Chart 9). The significant contraction in the ratio of non-resident placements in kwacha-denominated sovereign securities to international reserves is a boon to financial stability because it suggests that a lesser share of international reserves is at risk of flight should the entire portfolio of non-resident securities placements be unwound. Conversely, the reduction in non-resident placements – largely due to the cap placed on amounts they can invest in the primary sovereign securities market – is constraining foreign exchange inflows.

Risks to the country's external sector's resilience linger as geopolitical tensions have worsened since October 2023. More countries (about ten) have been indirectly drawn into the Israel-Hamas conflict, with the most alarming offshoot being the brewing Israel-Iran conflict where the two nations engaged in direct attacks. Additionally, the maritime conflict in Yemen, where the Houthis have been

Box A: Key Global Risks and Vulnerabilities

Key Global Vulnerabilities[1]

Vulnerabilities in the global financial system remain elevated. All surveillance indicators continue to show high vulnerability levels for sovereign debt, household assets (residential real estate) and market leverage with cross-border connections in markets remaining a channel for the propagation of shocks. Further, various macroprudential authorities across the globe are raising concerns around market asset price and bank asset quality vulnerabilities, though they also flag sovereign borrowing and market connections as important sources of vulnerability.

A crystallisation of these vulnerabilities could lead to spillovers across jurisdictions, as well as losses for banks and the non-bank financial intermediation (NBFI) sector. Some emerging market and developing economies (EMDEs) also face debt sustainability challenges or high external debt repayment pressures while market access for low- and middle-income EMDEs remains challenging.

Concerning financial system resilience, aggregate banking sector capitalisation has been steady for several years. However, persistently low equity market valuations for some banks raise concerns about their ability to raise capital. At the global level, measures of insurers' capitalisation have increased slightly, though this is not the case in all regions.

The main emerging vulnerabilities relate to climate change, technological threats, and crypto assets.

The use of artificial intelligence has also been flagged as a potential amplifier of vulnerabilities linked to cyber threats or new technology-driven business models that challenge incumbent financial intermediaries.

Key Global Risks[2]

There are stretched valuations in various asset classes, predominantly through compressed risk premiums relative to historical standards. Prices of assets have moved up together, riding the wave of lower risk premiums, increasing asset price correlations, and lowering market volatility. Sudden shifts in policies, a flare-up of geopolitical tensions, and commodity and supply-chain disruptions are a few examples of catalysts that could usurp current expectations of the trajectory of inflation and in turn monetary policy. Financial conditions would then tighten as investor sentiment sours and asset price correlations decline. If global financial conditions were to tighten, capital outflow pressures on emerging markets could emerge, putting currencies and other assets under depreciation pressure. Weaker sovereigns, on the other hand, may yet again see their international sources of funding dry up.

Another source of concern for macrofinancial stability is the growing risk of malicious cyber-attacks associated with the deepening digitalization and reliance on technology.

[1]Summary of key findings contained in the Financial Stability Board (FSB) Vulnerabilities Assessment: 2024 H1

[2]Summary of key risks identified in the IMF April 2024 Global Financial Stability Report

Chart 7: Copper prices (US$/ton)

Source: Reuters and Bank of Zambia Compilations

Chart 8: International Reserves Adequacy

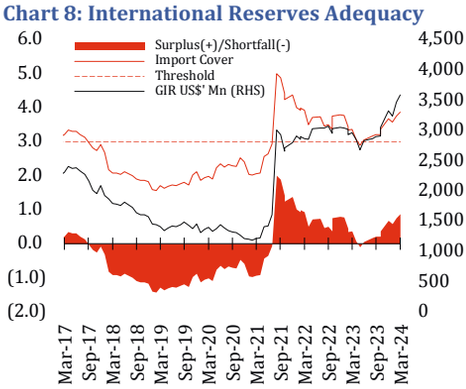


Chart 9: Non-resident Investments in Government Securities

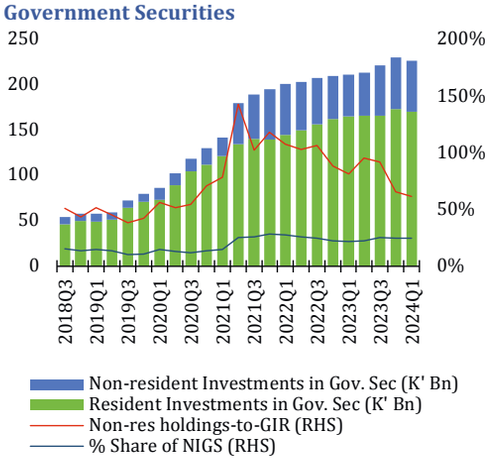


Table 4: Economic Strength Heatmap

	2023				24
	Q1	Q2	Q3	Q3	Q1
Economic Strength					
Real GDP growth (%)					
Inflation					

attacking container ships and oil vessels in the Red Sea, is exerting upward pressure on oil prices. Zambia's high dependence on oil imports makes it vulnerable to variations in commodity prices and disturbances in the flow of global trade. Consequently, the country would experience higher energy costs and balance of payments challenges through higher foreign exchange outflows. In turn, this could pile pressure on the exchange rate, prices of goods and services as well as interest rates, and may filter through to financial institutions in the form of mounting market, liquidity, and credit risks.

Growth Slows, Inflationary Pressures Mount and Imbalances linger as the Drought Clouds Outlook

Growth in output slowed markedly and inflationary pressures continued to mount (Table 2) amidst the persistent depreciation of the exchange rate. BoZ estimates that the economy grew at 3.5 percent in the year to March 2024 (*May 2024 Monetary Policy Report*), 2.0 percentage points lower than the 2023 third quarter annual growth rate and 4.5 percentage points lower than the preliminary annual growth for the last quarter of 2023 as reported by Zambia Statistics Agency (ZSA) and shown in Chart 10. It is a cause for concern that the primary sectors of mining and agriculture have continued to contract (Chart 11) and contributing negatively to overall growth (Chart 12). Because of a strong exchange rate pass-through to inflation[3], the sustained depreciation of the kwacha against the US dollar has piled pressure on consumer prices. Inflation has continued drifting away from the 6-8 percent target band, with the April annual inflation jumping to 13.8 percent compared with 12 percent in September 2023 (Chart 13). High inflation erodes business and households' purchasing power and keeps interest rates elevated.

Near-term prospects for growth and financial stability have been dented by the El Nino-induced drought and its attendant risks relating to lower agriculture output and deficiency in electricity supply, considering Zambia's heavy dependence on rainfed agriculture and hydropower generation. The government estimates that about half of the 2.2 million hectares of planted maize, the country's staple food, has been ravaged by the prolonged dry spell. Over a million households whose livelihood is agriculture have been affected. Additionally, it is estimated that there will be a deficit of about 430-520 megawatts of electricity

[3]The findings of Chisha, Phiri, & Chansa (2023) suggest that there is a strong exchange rate passthrough to inflation, especially food. A 1 percent depreciation in the exchange rate leads to a 0.53 percent rise in food prices, and 0.25 percent increase in non-food prices.

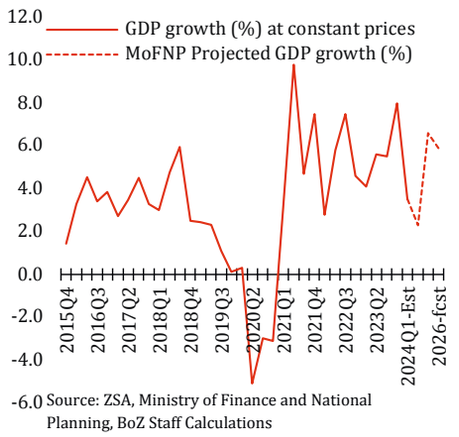
as the dry spell constricts the flow of water into the main reservoir, Lake Kariba. As of 26 March 2024, it was reported that the river flows at the two main gauging stations were on average about 3 times lower than the corresponding period in 2023 (Chart 14) with the lake level recorded barely above the minimum operating level at 14 percent of usable storage compared with 20 percent a year before (Chart 15).

The agriculture sector is already grappling with shrinking growth and the drought would only compound the challenging conditions under which the sector is operating. Output loss in this key sector is indicative of dwindling incomes for associated businesses and households. With the agriculture sector being the second largest employer in the economy, the persistent contraction in output would not only cost the economy a substantial share of jobs, but also potentially translate into increased loan defaults and sluggish deposit growth on lenders' balance sheets.

Shortages in the supply of electricity would weigh on output and lead to higher costs of production as businesses turn to alternative but more expensive energy sources to sustain the production of goods and services. Higher production costs would naturally translate into higher prices of goods and services (inflation) and interest rates. Consequently, businesses could struggle with weaker demand for their goods and services, liquidity constraints and shrinking profitability. The drought will, therefore, indirectly test the resilience of the financial system in the near-term because higher inflation and interest rates would compound challenges faced by businesses and households and in turn cascade to financial institutions through higher liquidity and credit risks. Lenders could face higher default risk should borrowers struggle to service their loans. Financial institutions lacking capital buffers to absorb unexpected losses may experience a reduction in their solvency.

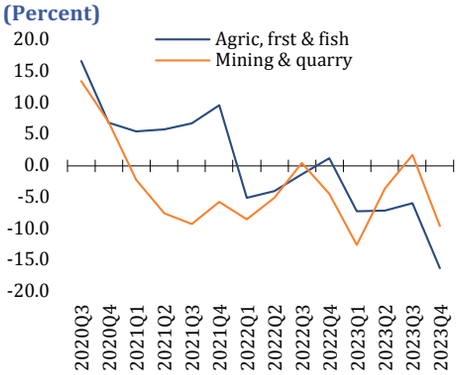
Nonetheless, the expected turnaround and improvement in the mining sector may moderate the adverse impact of the drought and macro-related risks to financial stability. The expected resumption in production at the key mines of Mopani Copper Mines Plc (MCM) and Konkola Copper Mines Plc (KCM) after shareholder restructuring would help offset the expected losses in other key sectors like agriculture. Additionally, near-term tailwinds could arise from the anticipated strengthening of fiscal resilience after the full completion of public external debt restructuring.

Chart 10: Real GDP Growth



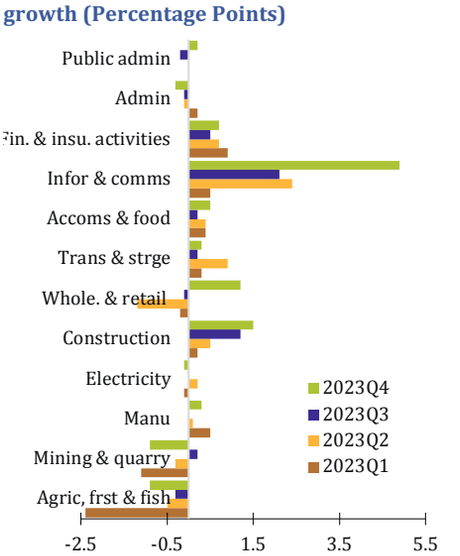
Source: ZSA, Ministry of Finance and National Planning, BoZ Staff Calculations

Chart 11 : Selected sectors growth rates (Percent)



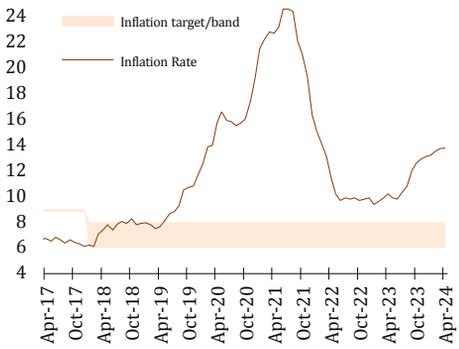
Source: ZSA, BoZ Staff Calculations

Chart 12: Selected sectors contributions to growth (Percentage Points)



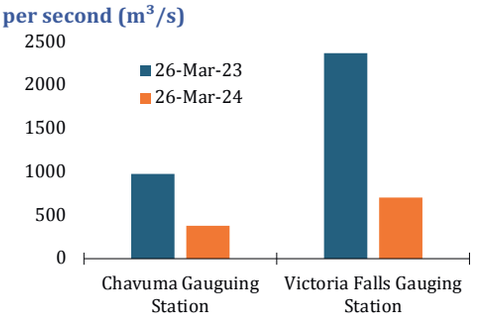
Source: ZSA, BoZ Staff Calculations

Chart 13: Annual Inflation (Percent)



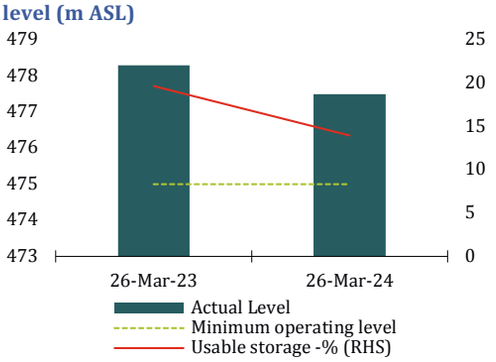
Source: ZSA,BoZ Staff Calculations

Chart 14: Zambezi River Flow - cubic meters per second (m^3/s)



Source: Zambezi River Authority,BoZ Staff Calculations

Chart 15: Lake Level -meters above sea level (m ASL)



Source: Zambezi River Authority,BoZ Staff Calculations

Table 5: Fiscal Resilience Heatmap

	2023				24
	Q1	Q2	Q3	Q4	Q1
Fiscal resilience					
Public debt-to-GDP					
Fiscal deficit					

Fiscal Sector Outlook Brightens as Public Debt Restructuring Nears Conclusion, but Risks Remain

The fiscal sector outlook has brightened as public external debt restructuring draws to a close. Prospects for fiscal resilience have brightened on expectations that the country's debt sustainability would improve after assurances that it would get debt relief and a stretched repayment horizon. While the share of public debt has remained elevated, the fiscal deficit is assessed to have narrowed (Table 5).

By implication, the longstanding fiscal-related vulnerability would decrease and financial stability risks wane. The full conclusion of the external debt restructuring deal would unlock resources for discretionary spending, and reinforce the ongoing fiscal consolidation efforts ,which are expected to translate into a progressive narrowing of fiscal deficits. This would result in increased fiscal space in terms of increased expenditure on programmes that would help spur growth, and shore up the financial system's resilience to shocks. Additionally, threats to financial stability would recede as the expected improvement in the sovereign risk profile would weigh on interest rates.

However, there are downside risks to fiscal resilience. Actions expected to be taken to mitigate the impact of the drought like humanitarian relief efforts, importation of maize and electricity, and increased social cash transfers would expand unplanned fiscal spending and widen the fiscal deficit, particularly in 2024. This can be mitigated, however, by the planned revisions to the national budget.

Credit Grows Moderately as Financial Intermediation Remains Low

Growth in private sector credit rose in the six months to March 2024 due to revaluation effects following the depreciation of the exchange rate (Chart 16). Conversely, the private credit to GDP gap narrowed to 0.3 percentage points in March 2024, from 1.4 percentage points in September 2023, well below the Basel III threshold of 2.0 percentage points (Chart 17). Technically, this renders the observed growth in credit moderate (see Box B).

Relatedly, financial intermediation, measured by banks' loan-to-deposit ratio (LDR), remained low at 39.8 percent (Chart 18). A low LDR uncovers limitations in the delivery of one of the financial system's core functions – maturity transformation[4]. While the underlying cause of this

[4]Maturity transformation refers to the action of banks accepting traditionally short-term deposits and using these deposits to create loans with longer maturities.

Box B: Excessive credit, Credit to GDP Gap and Countercyclical Capital Buffer

Studies have shown that financial crises are usually preceded by private sector credit booms, providing insight into how early warning indicators for crises can be constructed. According to the Basel Committee on Banking Supervision (BCBS, 2010), this approach is important for the activation and calibration of macroprudential tools such as the countercyclical capital buffer (CCyB).

Excessive Credit

Excessive credit growth can be a source of risk in advanced economies as well as low-income countries (LICs). It could be indicative of potential risks in the financial sector. It refers to an excessive expansion of credit compared to the growth rate of the economy. This can lead to over-indebtedness of households and businesses, reduced credit quality, increased risk of default and potential banking crises.

Credit to GDP Gap

The credit-to-gross domestic Product (GDP) gap is the difference between the credit-to-GDP ratio and its long-term trend. The credit-to-GDP ratio is the relative size of the outstanding debt of the non-financial private sector with respect to yearly GDP. The trend is calculated using a one-sided Hodrick-Prescott (HP) filter with a high smoothing parameter, taking account of data up to each point in time.

The credit-to-GDP gap is an early warning indicator for potential banking crises or severe distress and serves as a guide for setting CCyB. A positive gap indicates that credit is growing faster than GDP, which may indicate excessive credit expansion, potentially leading to financial instability. A negative gap indicates that credit is growing more slowly than GDP which may indicate a safe amount of additional borrowing.

The gap indicator was adopted as a common reference point under Basel III to guide the build-up of countercyclical capital buffers. BoZ monitors the credit-to-GDP gap to identify potential risks and takes preventive measures, such as setting countercyclical capital buffers to ensure financial stability.

Countercyclical Capital Buffer

The CCyB aims to ensure that banking sector capital requirements take account of the macro-financial environment in which banks operate. The basic idea of the CCyB is to compel banks to accumulate capital in good times to help them remain resilient during downturns. Its primary objective is to use a buffer of capital to achieve the broader macroprudential goal of protecting the banking sector from periods of excess aggregate credit growth that have often been associated with the build-up of system-wide risk. A countercyclical capital buffer regime helps to lean against the build-up phase of the credit cycle in the first place. Then, during a slowdown in credit growth or an economic downtown, CCyB must be released to help banks sustain lending to the private sector.

Bank of Zambia uses thresholds to indicate when a positive gap might prompt it to consider macro-prudential intervention. It uses a range of 2 to 10 percentage points for the gap (Borio and Drehman, 2009) as per Bank for International Settlements (BIS) recommendation. The CCyB is set to zero for values of the credit-to-GDP gap below 2 percentage points and capped at 2.5 percent for values of the gap above 10. It is noteworthy, however, that the Bank also uses expert judgement and considers other factors like real GDP growth and credit conditions (intermediation, credit growth and NPLs) when determining appropriate macroprudential intervention.

Chart 16: Private Credit (K'billion)

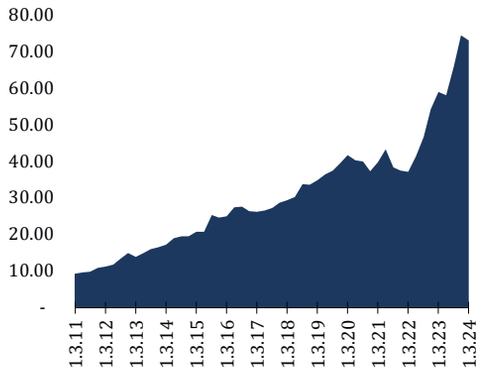


Chart 17: Private Credit to GDP/Gap (percent/PPts)

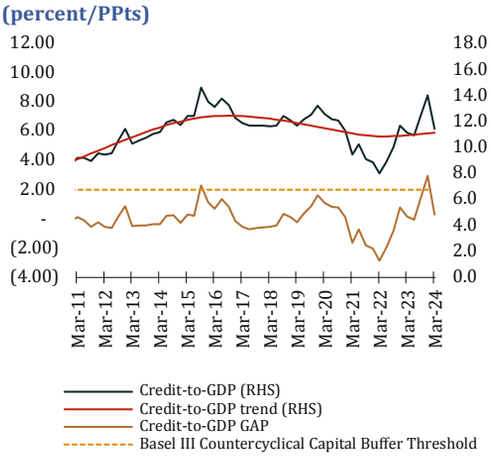


Chart 18: Financial Intermediation

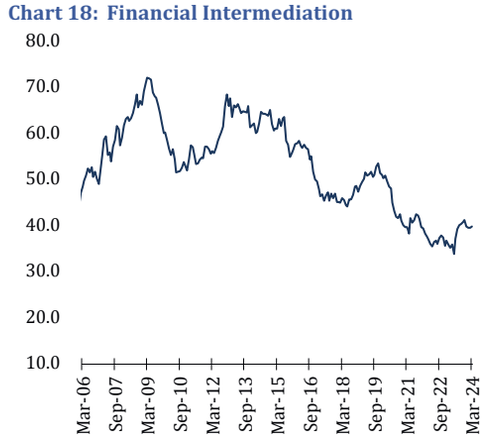


Table 6 : Financial Markets Heatmap

could be fiscal dominance and elevated interest rates over the years, a low LDR is suggestive of the financial system's inherent bottlenecks in transferring liquidity from economic agents with surplus funds to those in deficit. So, given their increased appetite for government securities, lenders - primarily commercial banks – are not channeling sufficient credit to businesses and households that is needed for investment and consumption, and more generally to boost growth.

Financial Markets

Risks associated with markets are assessed to have broadly increased following tighter money market liquidity conditions and a surge in exchange rate volatility (Table 6 and Chart 19). Conditions in interest rate markets broadly tightened after BoZ raised its Policy Rate and statutory reserve ratio (SRR) to rein in mounting inflationary pressures. Exchange rate volatility surged above its 14-year historical average as the kwacha experienced both appreciation and depreciation against the US dollar.

Conditions in Interest Rate Markets Broadly Tighten

Interest rates conditions have broadly tightened (Table 7) after BoZ raised its Policy Rate and SRR to rein in mounting inflationary pressures. The average overnight interbank rate spread drastically widened to an 8-year high and breached the historical average (Chart 20). Similarly, average volatility in the overnight interbank rate, which measures short-term interest rate risk, surged to an 8-year high (Chart 21) as the overnight interbank rose sharply (Chart 22). Spreads on hard currency sovereign bonds widened further (Chart 23) due to the uncertainty surrounding the 2024 Eurobond payment that was due to mature in April. Conversely, yields on local currency denominated government securities fell (Chart 24).

Looking ahead, market liquidity is expected to remain tight and interest rates elevated. Money market liquidity, measured by banks' current account balance, could be squeezed further if government succeeds in withdrawing all its idle deposits from commercial banks. Borrowing costs could remain high and may trigger an increase in loan delinquencies, which would possibly weigh on financial institutions' appetite to extend lending to the private sector. Further, considering the somewhat strong exchange rate pass-through to inflation, the persistent weakening of the kwacha against the US dollar would exert an upward pressure on consumer prices, and interest rates may

rise higher should the central bank continue tightening monetary policy.

Kwacha Exchange Rate Volatility Surges Amid low supply

Exchange rate volatility surged above its 14-year historical average (Chart 25) as the kwacha experienced both an appreciation and depreciation against the US dollar. The local unit weakened to a historical low of ZMW27.2175/USD in early February as the stock of unfilled foreign exchange demand orders (pipeline demand) swelled in the absence of substantial inflows from mining firms before recovering following liquidity tightening measures pursued by the Bank. After weakening on the accumulation of pipeline demand, it appreciated later as news of the debt restructuring deal filtered through to the market in March (*May 2024 Monetary Policy Report*).

High exchange rate volatility is a threat to financial stability as it could lead to asset price distortions, credit losses from unhedged foreign currency denominated exposures, and trading losses from foreign currency net open positions on balance sheets of financial institutions.

Equity Price Volatility Recedes Slightly

Equity price volatility for the Lusaka Securities Exchange All-Share Index (LASI) decreased slightly following a moderation in stock valuations in the six months to March. Although volatility receded, it has remained above the historical average (Chart 26).

The LASI has been on an upward trajectory post-Covid. However, there remains a few businesses with access to market-based finance. With high borrowing costs limiting their access to credit markets, this potentially further constrains many firms' efforts to raise capital for investment and expansion.

Chart 19: Financial Markets Index

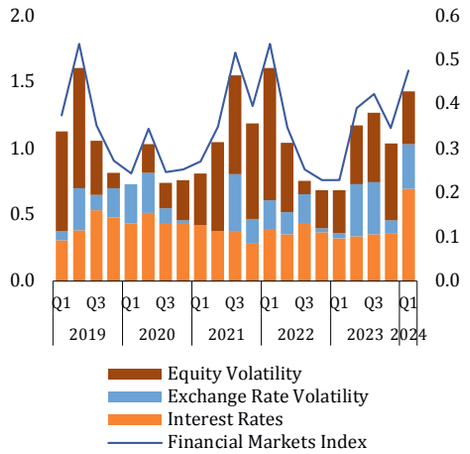


Table 7: Interest rates Heatmap

	2023				24
	Q1	Q2	Q3	Q4	Q1
Interest Rates					
T-bill composite yield					
G-bonds composite yield					
Av. spread on E/bonds yields					
IB Interest rates spreads					
IB interest rate volatility					

Chart 20: Interbank Interest Rate Spread

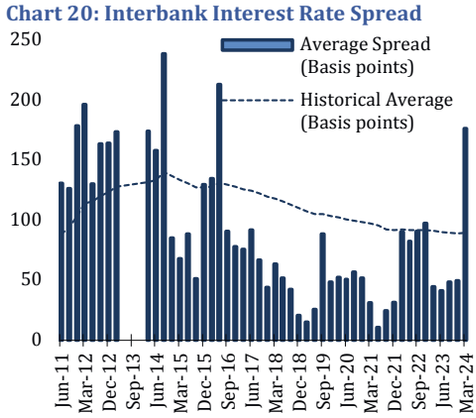


Chart 21: Interbank rate 21-Day volatility (Percent) Spreads

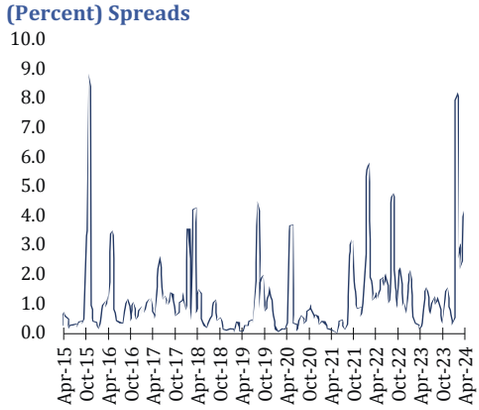


Chart 22: Overnight Interbank Rate (Percent)

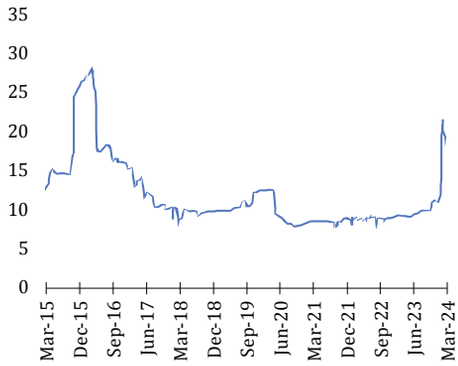
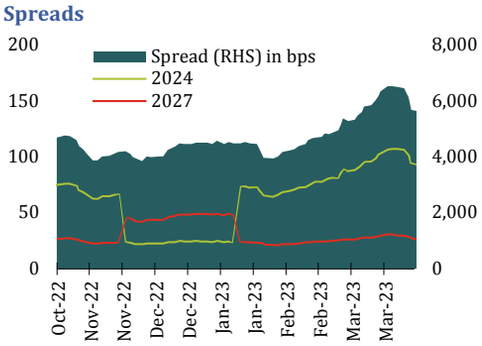


Chart 23: Eurobond Yields (Percent) & Spreads



Source: Reuters and Bank of Zambia

Chart 24: Composite Government Securities yields (Percent)

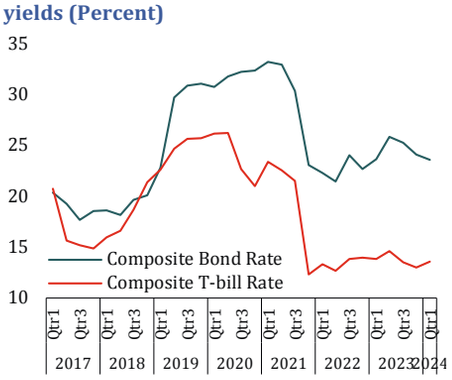
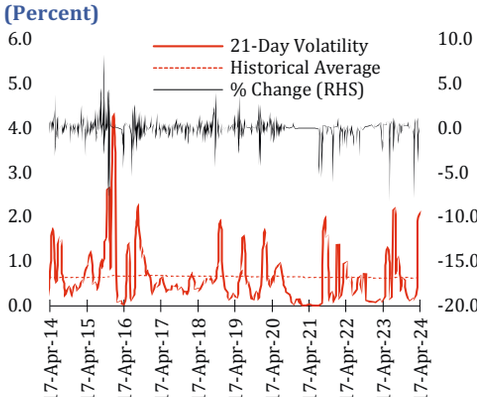


Chart 25: Daily 21-Day Forex volatility (Percent)



Financial Institutions – Commercial Banks

Notwithstanding the recent failure of a local bank, commercial banks' robust capital and liquidity positions continue to underpin their resilience to unexpected losses. However, their balance sheets are beset with persistent imbalances, including exposure to government, concentration of credit, dollarization of loans and deposits as well as maturity mismatches. Although these imbalances are more than offset by adequate capital and liquidity buffers, they need to be managed to limit the systemic risk they may pose.

Capital Remains Well Above Regulatory Thresholds, Underpinning Their Resilience

Notwithstanding the recent failure of a local bank (see Box C), commercial banks have remained resilient. Capital adequacy, measured by total capital to risk-weighted assets, has persistently been robust, demonstrating banks' ability to absorb losses and offer relief to the financial system during episodes of stress.

Commercial banks have broadly maintained adequate buffers with capital accounting for more than 20 percent of the risk-weighted assets, about 10 percentage points more than the regulatory requirement (Chart 28). Their aggregate leverage ratio, a capital standard introduced after the global financial crisis of 2007-2008 to reinforce banks' resilience to shocks, has also been higher than the Basel III benchmark of 3 percent. Reassuringly, their balance sheets comprise high quality capital, including common shares, retained earnings and share premium, which are key components of Basel III common equity tier 1 (CET 1) capital (Chart 29). The CET 1 is currently at 20 percent.

Asset Quality Remains Satisfactory, but Imbalances Persist

Asset quality has broadly been satisfactory with a low share of non-performing loans indicative of subdued credit risk on commercial banks' balance sheets. The non-performing loans (NPL) to total gross loans ratio inched down to 3.7 percent in March 2024, well below the prudential benchmark of 10 percent (Chart 30). Relatedly, their aggregate loan provision coverage ratio has been satisfactory as it has remained above the regulatory threshold of 80 percent at 104 percent (Chart 31). The loan

Box C: Failure of Investrust: Any Systemic Risk Issues?

Bank of Zambia took possession of Investrust Bank Plc after it failed due to insolvency. Investrust was a local bank established and incorporated in 1996 under the name Investrust Merchant Bank Zambia Limited. It later changed the name to Investrust Bank in 2002. Its business model was centered around providing financial services to retail and corporate clients, specifically low-end consumers, and government agencies. It expanded operations, introducing new products and digitalizing the delivery of services through internet and mobile banking. In a bid to support its expansion, the commercial bank sought to raise more capital and went public through listing on the Lusaka Securities Exchange(LuSE) in 2007. It had a footprint of 20 branches and a staff complement of 320. Its shareholders included ZCCM Investment Holdings (71.4 percent) and Bank of Nevis International (BONI) Limited (24.1 percent).

Possession and Resolution

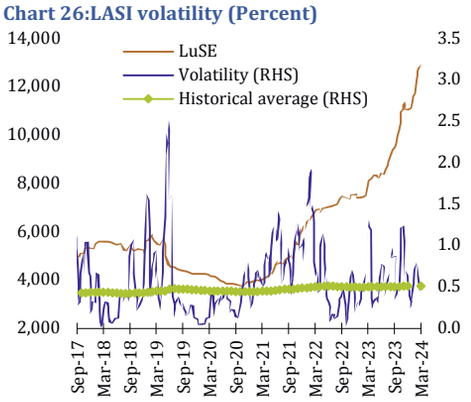
Due to poor risk management over the years, the bank contended with acute liquidity shortages – which compelled it to resort to expensive short-term funding – and suffered material losses leading to a drastic erosion of capital. Considering the bank's weak resilience, the Bank of Zambia had several engagements with the major shareholder and constantly emphasised the need to fully recapitalise the bank. In 2019, the major shareholder responded by injecting K286.0 million worth of capital. However, this was not enough to put the bank on a sustainable capital path. After recent engagements with the major shareholder, "it was made clear that their medium-term strategy was to focus on mining and mining related activities with no prospects for immediate recapitalisation of the institution." Therefore, BoZ decided to take possession of Investrust on 2 April to rein in further deterioration of the value of the assets, protect depositors and ultimately safeguard financial stability. On the same day, trading of the Investrust stock on LuSE was halted and later suspended on 24 April. These actions were taken in the spirit of curtailing contagion and disruption to the delivery of financial products and services. At the time of possession, Investrust had a preliminary capital deficiency of K850 million.

At the time this report was finalized, the Bank was still working out modalities to decide on the best resolution regime that would minimise both the disruption to the delivery of financial system's functions and the cost of resolving the failed lender.

Any Systemic Risk Issues?

BoZ stymied the potential contagion associated with the failure of Investrust and it had no ripple effects on the financial system. In other words, the shock of its failure was not systemic. Investrust was a small local bank which was loosely interconnected with other financial intermediaries. Second, there was no run reported at any commercial bank after BoZ took possession of Investrust. To reinforce consumers' trust in deposit-taking financial institutions, BoZ assured depositors that "their deposits are safe as Government provided support (up to K1 billion) to bridge the gap between the assets and liabilities of Investrust (In Possession)" in a statement announced on 11 April. The Bank facilitated the first payments, covering 90 percent of depositors with balances below K500,000, between 26 April and 17 May.

Chart 26:LASI volatility (Percent)

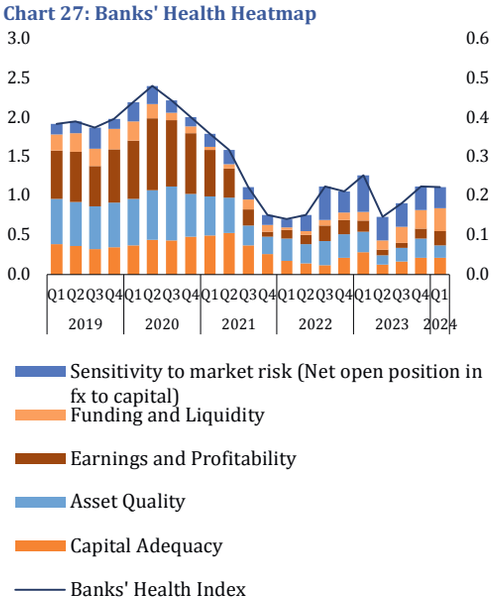


Source: Reuters and Bank of Zambia

Table 8: Banks Health Heatmap

	2023				24
	Q1	Q2	Q3	Q4	Q1
Banks' Health					
Capital Adequacy					
Asset Quality					
Earnings and Profitability					
Funding and Liquidity					
Sensitivity to mkt risk					

Chart 27: Banks' Health Heatmap



provision coverage ratio measures the share of funds that a bank sets aside for losses due to bad debts. A high ratio is indicative of lenders' ability to buffer themselves against losses if loan delinquencies escalate.

However, there remains imbalances on commercial banks' balance sheets that are somewhat affecting their asset quality and raising financial stability concerns. These relate to the concentration of credit portfolio in terms of the elevated share of foreign currency denominated loans and the lopsidedness in the sectoral distribution of loans.

The proportion of foreign currency denominated exposures rose by 1.5 percentage points to 40.2 percent in the six months to March 2024 (Chart 32). The partial dollarization of credit can be explained by several factors, one being higher local currency interest rates[5]. An elevated share of foreign-currency-denominated exposures presents itself as a vulnerability on lenders' balance sheets, which could indirectly raise credit risk through the exchange rate channel. Although a sizeable proportion of banks' foreign currency exposures is hedged – mostly through borrowers' foreign currency receivables – there is a concern about the unhedged portion that has been rising over the last few months (Chart 33). A weaker kwacha could make it difficult for unhedged borrowers to service their debt, and if sustained, could lead to a rebound in defaults and impairments of banks' loan book. Besides raising credit and liquidity risks, dollarization of credit undermines monetary policy transmission as market dynamics of dollar denominated credit barely respond to the central Banks' policy rate adjustments[6].

Secondly, the balance of credit is tilted to a few sectors – manufacturing, households, wholesale and retail trade, transport and communication, and agriculture. As a collective, the top three sectors now account for about 40 percent of credit on banks' balance sheets (Chart 34). Three of these sectors also account for the highest share of loan delinquencies. The manufacturing sector accounts for the highest share of bad loans at 25.6 percent, followed by wholesale and retail trade at 18.2 percent, and agriculture at 13.9 percent (Chart 35). Considering that these sectors are facing a number of headwinds, including deficiency in the supply of water and electricity, and rising costs of inputs amid a weaker exchange rate, banks may be required to raise more provisions on expected credit

[5]A study by Kapako, Funyina, & Sikaona (2020) indicates that during periods of restrictive monetary policy, the flow of credit denominated in foreign currency expands at the expense of local currency denominated credit.

[6]Zgambo (2018) shows that a tight monetary policy reduces consumer prices by less than would be the case in an economy with no dollarization.

losses in line with the IFRS 9 standard. Should business and economic challenges linger, and risks faced by these sectors materialise, lenders could incur material losses and an erosion of capital.

The Sovereign-Bank Nexus Remains a Key Vulnerability in the Financial System

Notwithstanding the expected conclusion of the external debt restructuring and improvement in the country's debt sustainability and sovereign risk profile thereof, the sovereign-bank nexus remains a key vulnerability in the financial system. The sovereign-bank nexus, which refers to the interconnectedness that exists between government and commercial banks in terms of the latter's exposure to the former (loans and securities) and government's deposits in banks, raises the risk of contagion. Commercial banks' sovereign exposure accounted for a quarter of their total assets in March 2024, compared with 14 percent in September 2016 (Chart 36) whereas the share of government's deposits in banks was at 4.8 percent.

While banks' sovereign exposure has been declining from its peak of 35.7 percent in September 2022 and may continue on the downward trajectory given the anticipated fiscal consolidation, this nexus deepened over the last seven years as government's domestic funding needs and interest rates mounted. As interest rates increased, so did banks' appetite to invest in government securities, and dependence on their yields thereof.

While it's been on a downtrend, the sovereign-bank nexus raises the risk of contagion as the sovereign's failure to meet its obligations to banks could lead to liquidity shortages, material losses and insolvency.

Liquidity and Funding Remain Robust

Commercial banks' liquidity and funding position has remained robust and continues to support resilience to external shocks. The liquidity position, measured by their holdings of liquid assets in relation to deposits and short-term liabilities, has remained strong, demonstrating that they are able to adequately cover short-term obligations as they fall due (Chart 37). Liquid assets include cash, excess reserves at BoZ, placements in other financial institutions as well as Treasury bills and bonds with less than 182 days to maturity. Similarly, their low loan-to-deposit ratio (Chart 38) indicates that funding of credit is not stretched, albeit at the expense of intermediation (see *Credit Grows Moderately as Financial Intermediation Remains Low* section).

Chart 28: Banks Capital Adequacy Ratio, Leverage Ratio (Percent)

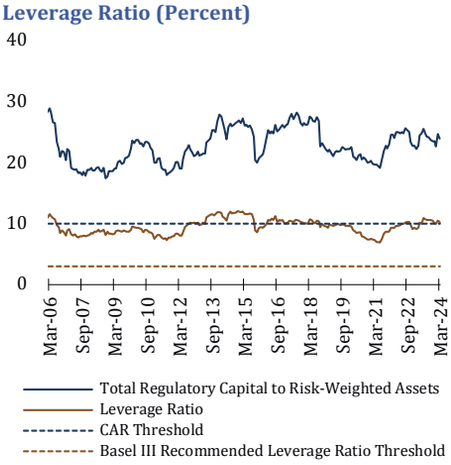


Chart 29: Decomposition of Banks CET 1 (K'Billion)

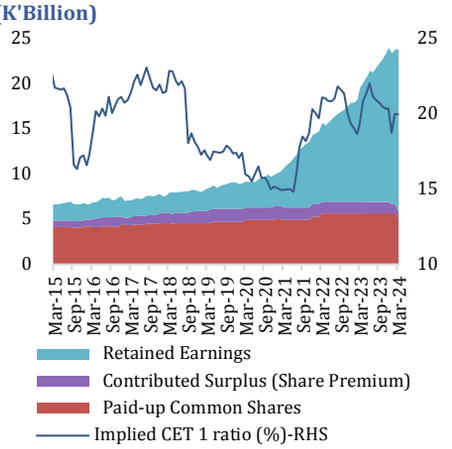


Chart 30: Loan Classification (K'billion), NPL ratio(percent)-RHS

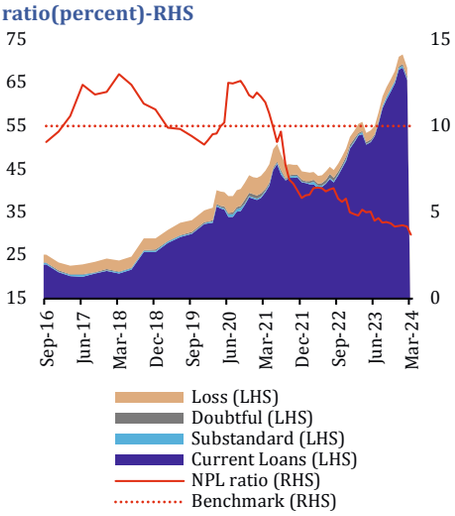


Chart 31: Loans Provisions Coverage Ratio (percent)

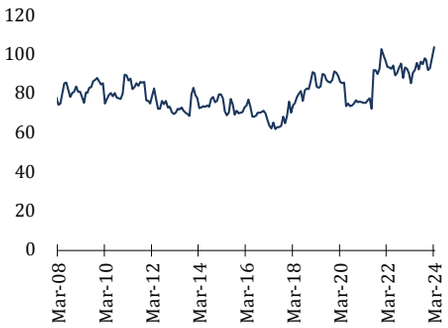


Chart 32: Share of Foreign Currency Denominated Loans (Percent)

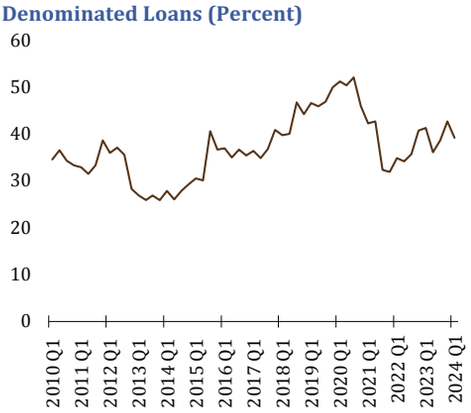


Chart 33: Decomposition of Foreign Currency Denominated Loans

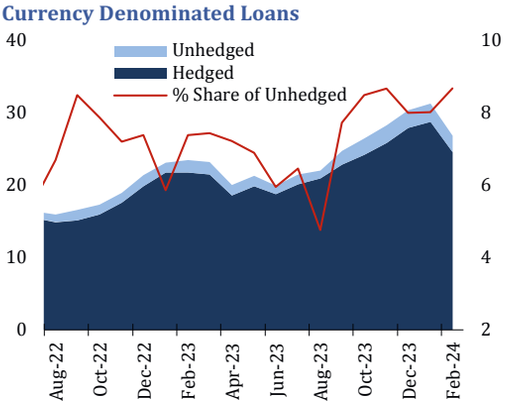


Chart 34: Sector Distribution of Loans (percent)

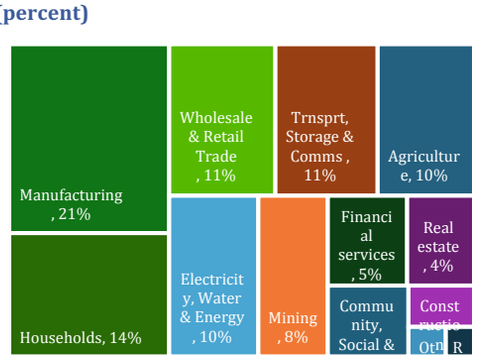


Chart 35: NPLs By Sector (percent Share)

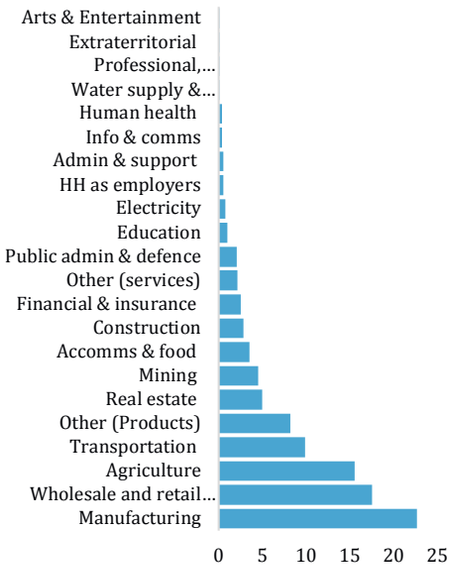


Chart 36: Sovereign-Bank Interlinkages, by Banks Exposure to Govt (K'Billion)

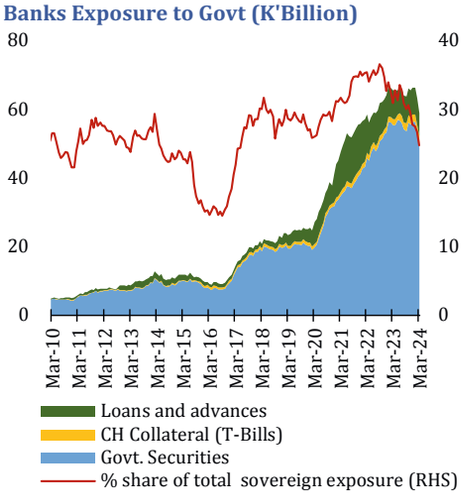
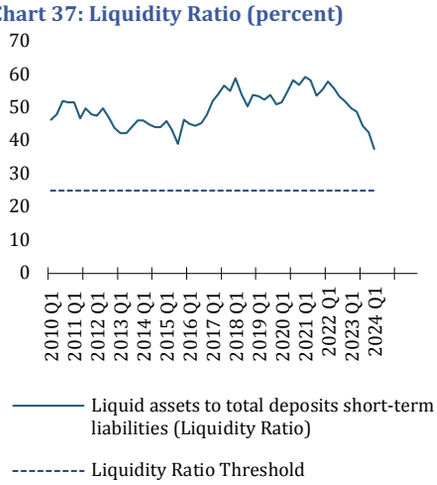


Chart 37: Liquidity Ratio (percent)



Positive (Maturity) Gap Lingers

Lenders have continued experiencing a positive gap, albeit maturity mismatches have been declining steadily. A positive gap occurs when banks' interest-sensitive assets exceed their interest-sensitive liabilities. Considering the notable re-allocation of securities towards bonds, commercial banks' have continued to hold much of their net assets in the longer tenure bracket (Chart 39).

The balance of their government securities portfolio is now tilted towards longer-dated instruments, with the share of bonds now higher than T-bills. Banks' holdings of government securities are composed of 54 percent in bonds compared with early 2020 when it was about 80 percent in Treasury bills (Chart 40), an instrument they have traditionally preferred for maturities matching on their balance sheets. This shift has perhaps been motivated by their search for higher returns and lower appetite to lend to the private sector. This also explains the current banks increased share of interest income from securities – which doubled to 46 percent from September 2016 (Chart 41) – and tapered intermediation (see *Credit Grows Moderately as Financial Intermediation Remains Low* section). The concentration of longer-dated securities on banks' balance sheets renders them vulnerable to shocks and material losses should they liquidate bonds at prices substantially lower than the market value.

Currently, banks' exposure to the underlying liquidity and interest rate risks is limited and does not raise apparent financial stability fears. Lenders stand to benefit from high interest rates considering that they have a surplus of interest-sensitive assets over liabilities. In the medium-term, however, they are vulnerable to interest rate risk. They could face mounting downward pressure on interest income should the tide in interest rates reverse and trend downwards. This would raise the risk of losses and capital shortfalls.

Dollarization of Deposits Posing Threats to Financial Stability

Aside from maturity mismatches, banks are faced with the growth of foreign-currency denominated deposits on their balance sheets. These liabilities, mostly denominated in US dollars, have risen to US$3.2 billion (about 46 percent of total deposits) from US$1.6 billion (37 percent) in January 2010 as shown in Chart 42 and Chart 43. The growth in foreign currency denominated deposits has somewhat facilitated growth in foreign currency loans as banks persistently seek to match assets and liabilities to manage liquidity risk.

Chart 38: Loans to deposit Ratio (percent)

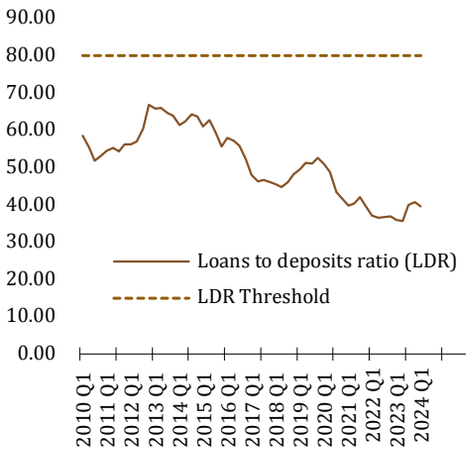
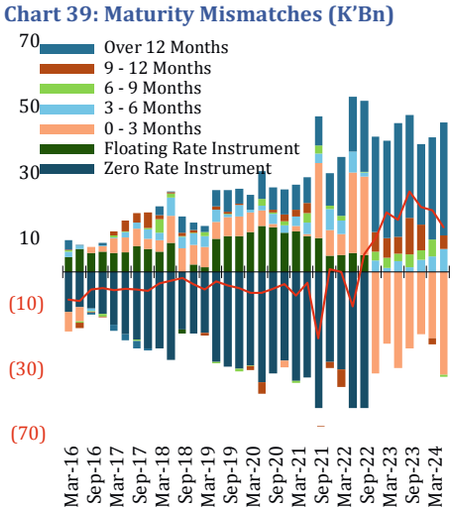


Chart 39: Maturity Mismatches (K'Bn)



Note: Pre-July 2022, commercial ban banks were required to report floating and zero rate instruments.

Chart 40: Banks' Governmnet Securities Placements (K'Billion)

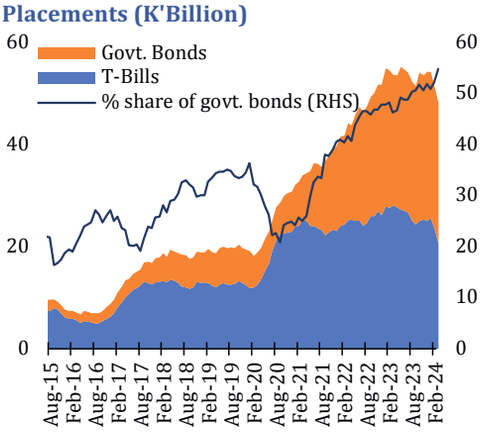


Chart 41: Selected Interest Incomes

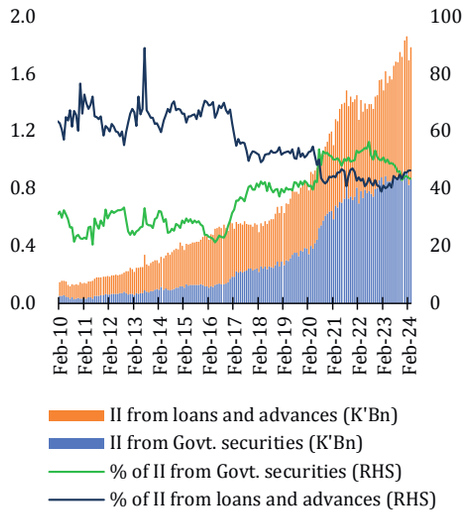


Chart 42: Foreign Currency Deposits(K'Billion)

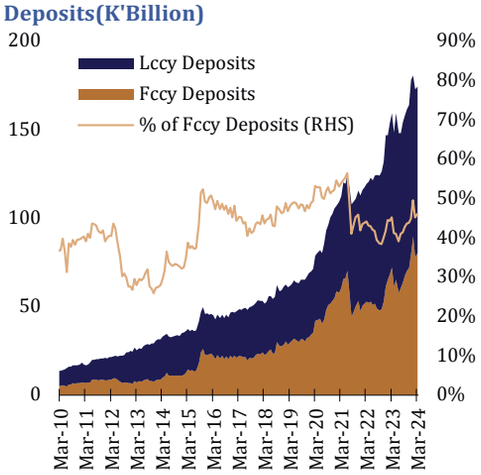
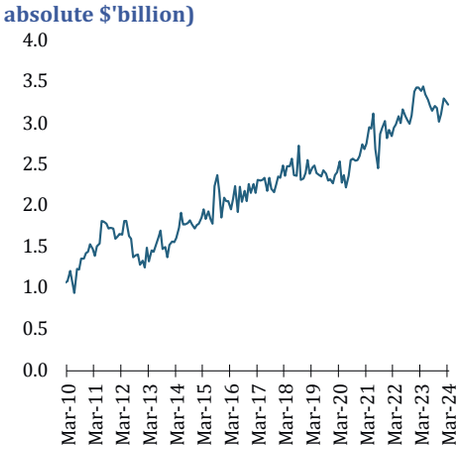


Chart 43: Foreign Currency Deposits (in absolute $'billion)



The growth in the dollarization of deposits and loans has been driven by a number of factors, including the depreciation of the exchange rate and expansion in economic activity over the years. Some businesses and households naturally hold foreign currency deposits as they have regular foreign currency inflows from export and salaries while others arguably dollarize their deposits to preserve the value of their assets.

While deposit dollarization can be viewed as a risk management tool for some businesses and households, it raises financial stability concerns to some extent. Its growth raises banks' vulnerability to financial risks through currency mismatches on their balance sheets. A currency mismatch occurs when there is an excess of either liabilities or assets, usually measured by their net open position (NOP). Notwithstanding regulatory limits placed on NOP in relation to their capital (15 percent), banks remain vulnerable to market risk, which may lead to material losses and depletion of capital buffers. Therefore, dollarization of funding and credit could be the conduit through which exchange rate and interest rate shocks are propagated to the financial system and the economy.

Financial Market Infrastructure

The financial market infrastructure is assessed to have remained resilient and continued to efficiently facilitate the transfer and settlement of funds between counterparties without disruptions. However, there remains a growing risk of cyber-attacks, especially as the digitalization of financial services and dependence on technology in finance accelerates. Since the Global Financial Crisis (GFC) of 2007-2008, BoZ has made legislative reforms, with the new Bank of Zambia Act, 2022 and amendments to the Banking and Financial Services Act (BFSA) expected to enhance the Bank's capacity to effectively respond to the build-up in systemic risk and preserve financial stability.

Payment Systems Remain Resilient Amid Growing Cyber Threats

The financial markets infrastructure, measured by the relative use and concentration of banks' utilization of systemically important payment systems, is assessed to be resilient (Table 9) and continues to efficiently facilitate the transfer and settlement of funds between counterparties without disruptions. The daily average volume of transactions processed by the Zambian Interbank Payment and Settlement System (ZIPSS) stood at 5,000 relative to the daily capacity of 60,000 (Chart 44). The concentration of banks' transactions through ZIPSS is also low (Table 9).

However, market infrastructure remains prone to the growing risk of cyber-attacks, especially as the digitalization of financial services and dependence on technology in finance accelerates. Cyber-attacks can cause a systemic disruption to the flow of payments (see Box D).

Legislative Reforms to Enhance the Banks' Capacity to Preserve Financial Stability

Since the Global Financial Crisis (GFC) of 2007-2008, BoZ has made legislative reforms to reinforce its management of vulnerabilities and risks. The new Bank of Zambia Act, 2022, and amendments to the Banking and Financial Services Act (BFSA) are expected to enhance the Bank's capacity to effectively respond to the build-up of systemic risk and preserve financial stability. The new legislation does not only give BoZ the mandate to formulate and implement macroprudential policy, but also the establishment of an inter-agency Financial Stability Committee[7] (FSC), comprising membership from all the financial system regulatory authorities (Chart 45). The establishment of the FSC is critical as it enables the BoZ to mitigate systemic risk within the financial system whilst focusing on interlinkages with the broader economy. Considering the potential contagion that comes with a financial crisis, the set-up of the FSC is expected to enhance coordination between regulatory authorities and the finance ministry to prevent stress from cascading to other segments of the financial sector and broader economy. Amendments to the BFSA are expected to provide for enhanced macroprudential policy instruments, a special resolution regime and enhanced financial safety net through the establishment of a deposit insurance scheme.

Notwithstanding the available macroprudential policy tools needed to preserve financial stability, financial institutions must strive to maintain robust risk management frameworks at all times to avoid costly disruptions and resolutions.

Table 9: Financial Markets Infrastructure Heatmap

	2023				24
	Q1	Q2	Q3	Q4	Q1
FMI Index					
Relative Use					
Concentration					

Chart 44: ZIPSS Relative Use/Scalability

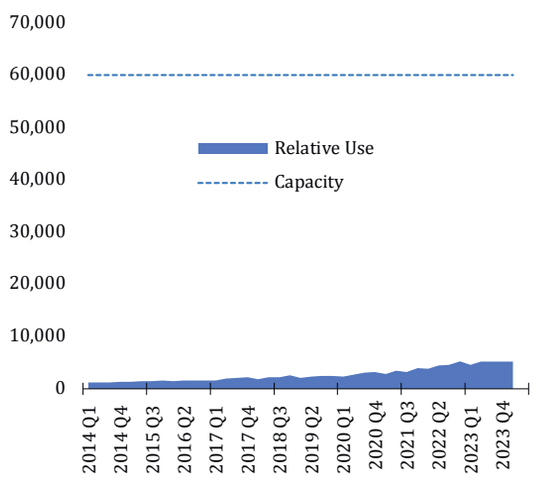
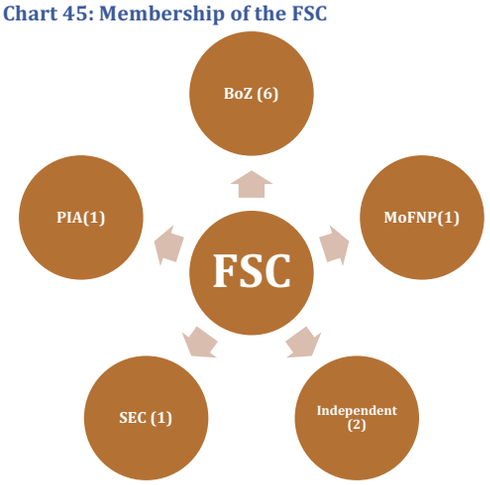


Chart 45: Membership of the FSC



[8]Membership of the Financial Stability Committee is drawn from BoZ, the Ministry of Finance, Securities and Exchange Commission (SEC) and Pensions and Insurance Authority (PIA).

Box D: Cyber Risk, Resilience and Management[8]

As the financial sector in Zambia becomes increasingly reliant on digital technologies, it faces a growing number of cyber threats due to the increased cyber-attack surface resulting from the system integrations in financial sector and rapid adoption of digital technologies. While the cyber landscape in the financial sector is constantly evolving, an overview of the common vectors are:

Data Breaches: This involves unauthorized access or disclosure of sensitive information, such as customer data, employee records, or financial data. Attackers may exploit vulnerabilities in networks, systems, humans, or applications to gain access to valuable data.

Ransomware Attacks: Ransomware attacks involve malicious software that encrypts files on a victim's system, rendering them inaccessible until a ransom is paid. Financial institutions may be targeted due to the high value of data they possess. Ransomware attacks can disrupt operations and cause financial losses.

Insider Threats: In the financial sector, insiders may intentionally leak sensitive information, engage in fraudulent activities, or sabotage systems.

Distributed Denial of Service (DDoS) Attacks: DDoS attacks aim to disrupt the availability of online services by overwhelming targeted systems with a flood of traffic.

Social Engineering: Social engineering involves manipulating individuals through psychological tactics to deceive them into revealing sensitive information, performing certain actions, or bypassing security measures. In the financial sector, social engineering can take various forms such as phishing, pretexting, impersonation, and baiting.

Initiatives taken by the Bank of Zambia to enhance the overall cybersecurity posture.

The impact of cyber threat vectors on the financial sector can be significant, instant, and systemic in nature ranging from financial losses, reputational damage to operational disruption. Therefore, the following measures have been put in place:

Issuance of Guidelines: The Bank of Zambia issued the Cyber and Information Risk Management Guidelines for use by all regulated entities, to promote robust cybersecurity practices. These guidelines outline the minimum cyber and information security standards that institutions should implement to protect their systems, networks, and customer data.

Incident Response and Reporting: The Bank of Zambia requires financial institutions to have robust incident response plans to effectively respond to and recover from cyber incidents. Institutions are also required to report significant cyber incidents to the Bank to facilitate oversight and coordination.

Financial Sector Cyber Incidence Response Team: The Bank, in collaboration with regulated entities, industry associations, and other stakeholders are in the process of setting up a financial Sector Cyber Incidence response Team (CIRT). This is to foster information sharing on emerging cyber threats in the market. This collaboration will help create a collective defense approach, allowing institutions to learn from each other's experiences and enhance their cybersecurity capabilities.

[7] Chibesakunda & Luwabelwa, 2023.

Stress Test

The May 2024 round of the stress test examines the potential severe impact of the drought on the health of the banking system. Simulation results indicate that commercial banks' intermediation function would weaken as deposit mobilization and the flow of credit gets constrained. Further, banks would face higher credit risk and experience reduced profitability. Although there would be a reduction in solvency levels, the banking sector would remain adequately capitalized and resilient.

The May 2024 cycle of stress testing has been modelled to examine the potential severe impact of the climate shock on the health of financial institutions, particularly commercial banks.

The stress scenario is premised on the severe impact of the drought resulting from the El Nino weather pattern which has affected mostly the Eastern and Southern African regions. It is noteworthy that the scenario described below is **hypothetical** and **not a prediction** of future developments.

Stress Scenario: Severe Impact of the Drought

It is assumed that prolonged dry spells in low-lying parts of Central, Copperbelt, Eastern, Lusaka, Southern and Western Provinces lead to lower food production. The impact of the drought on agriculture is primarily assumed to adversely affect maize output, the country's staple food. The ensuing food shortages push food prices up and raise inflationary pressures. The drought also drastically dampens hydroelectric power generation and supply as water levels in the reservoirs drastically recede.

The drought is assumed to indirectly impact other sectors, including manufacturing, mining, restaurant, and hotels. Declining business activity across sectors, lower industrial output, and higher cost of production lead to subdued GDP growth. The fall in demand for labour, coupled with increased job losses, results in subdued consumption and aggregate demand. As exports decline, the supply of foreign currency falls and consequently the exchange rate depreciates, further adding to inflationary pressures.

To avert the ramifications of food and electricity shortages, government spending rises as the treasury embarks on relief and remedial programmes against a backdrop of falling revenues. Government resorts to import significant amounts of food and electricity at the expense of widening fiscal deficit and increased demand for foreign exchange. Consequently, public debt rises as the government increases domestic borrowing to bridge the broadening fiscal gap and the kwacha weakens further.

To tame inflationary pressures, BoZ is compelled to tighten monetary policy further, raising interest rates and dampening aggregate demand.

These negative developments in the macroeconomic environment naturally cascade to financial institutions in the form of lower deposits, higher interest rates, rising default risk, lower profitability, and declining capitalization.

Given the scenario described above, the baseline assumptions were obtained from the Zambia Quarterly Model (ZQM), one of the core models used to forecast inflation for the May 2024 MPC projections (*see the May 2024 Monetary Policy Report*).

Simulation Results

Deposits would drastically decline: Funding, proxied by bank deposits, would decline substantially at an average of 4.3 percent quarter on quarter (q/q), compared to a 0.8 percent, q/q, increase in the baseline [K185.9 billion]. The drought-induced stress would see the deposit base plummet by 30 percent to K122.7 billion by 2026 Q1 (Chart 46). The retardation in deposit growth under the stress scenario could be reflective of lower incomes due to subdued economic activity, and depositors' preference to place funds in higher-yielding government securities given the assumed higher government domestic borrowings, contributing to higher interest rates.

Gross loans would contract: Credit supply would contract materially under the stress scenario. Particularly, credit would shrink by 11 percent to close at K62.0 billion in 2026 Q1 compared to a 1.8 percent increase to K80.6 billion under the baseline scenario, respectively (Chart 47).

The decline in loan growth could be a direct consequence of rising cost of borrowing, higher credit risk and increased government domestic financing needs.

Credit risk would rise: Under the stress scenario, the NPL ratio would rise steadily just below the prudential threshold of 10 percent. The ratio would average 4.1 percent in 2024 and 6.9 percent in 2025 under the stress scenario(Chart 48). This is higher than the baseline estimate of 3.8 percent in 2024 and 5.2 percent in 2025. The increase in bad loans is explained by the rise in the cost of borrowing and reduced incomes to service debts.

Banking sector profitability would decline: Following increases in provisions and impairments, coupled with reduced net interest income, the banking sector would experience reduced profitability under the stress scenario. The outturn also reflects the decline in the interest margin as loan volumes decline. Net income and the return on assets (ROA) would drastically decline by 2026 Q1, indicative of the severity of the assumed stress scenario (Chart 49).

Bank capital buffers would fall, but the sector would remain resilient: While the banking sector solvency would reduce, it would remain well above the prudential threshold of 10 percent. Given reduced profitability in the assumed stress scenario, aggregate capital adequacy ratio would fall by 4.6 percentage points to 19.6 percent under the stress scenario (Chart 50).

Chart 46: Response of deposits (K'Billion)

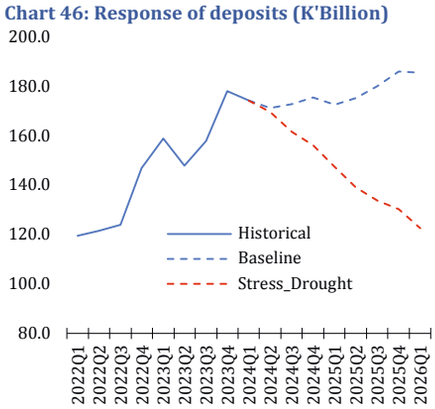


Chart 47: Response of loans (K'Billion)

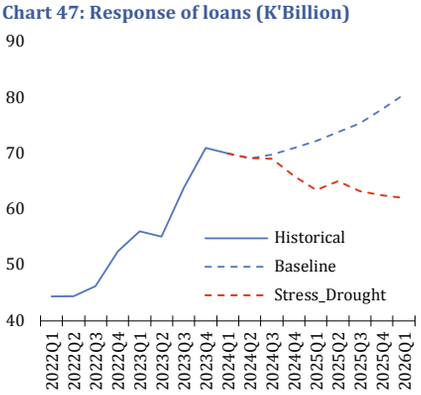


Chart 48: Response of NPLs ratio (Percent)

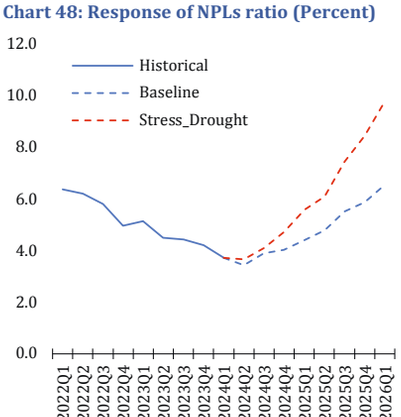


Chart 49: Response of ROA (Percent)

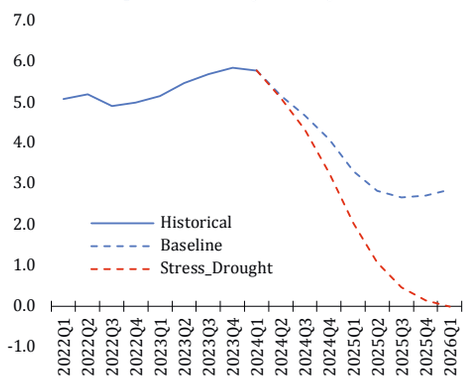
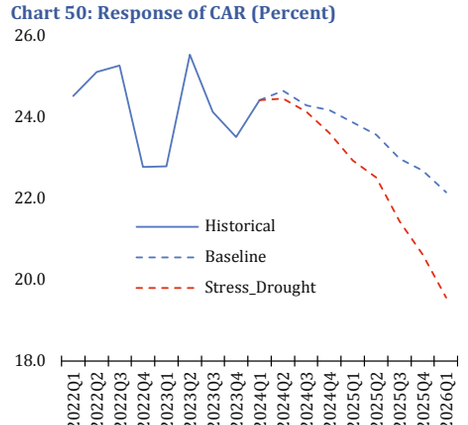


Chart 50: Response of CAR (Percent)



3. Policy Decision

Commercial banks' capital remains well above the regulatory requirement, underpinning their resilience to unexpected losses. Prospects for growth have been dented by the emergent drought, and credit-to-GDP gap is below the Basel III threshold. In view of this, the FSC set the countercyclical capital buffer at 0.0 percent. The Committee remains cognizant of elevated dollarization of deposits and loans and noted the regulatory reforms being implemented by the BoZ to mitigate risks associated with dollarization. The FSC also remains concerned about the elevated sovereign-bank nexus and the maturity mismatches. Nonetheless, it was judged that no macroprudential capital and liquidity measures should be activated as banks' exposure to government and the maturity mismatches have been declining.

Systemic risk to the financial system and its vulnerabilities are assessed to have been moderate in the six months to March 2024. This was despite tighter money market liquidity conditions and a surge in exchange rate volatility. Notwithstanding the recent failure of a local bank, the banking sector remains well capitalized with a robust liquidity standing. However, banks' balance sheets are beset with persistent imbalances, including exposure to government, a high concentration of credit, dollarization of loans and deposits, as well as maturity mismatches. Although these imbalances are more than offset by banks' capital and liquidity buffers in the short-term, the Committee noted that there was need to manage them to limit systemic risk that may arise in the medium-term.

The FSC, therefore, decided to set the **Countercyclical Capital Buffer (CCyB)**[9] at **0.00 percent**. In arriving at this decision, the Committee noted that the banking system is well capitalized with sufficient buffers to absorb losses and prospects for growth have been dented by the emergent drought. It was also observed that although private sector credit grew, the credit-to-GDP gap stood at 0.3 percentage points, well below the Basel III Countercyclical Buffer (CCyB) of 2 percentage points.

The FSC remains concerned about the elevated dollarization of deposits and loans, especially in an environment where exchange rate risk is high. The FSC also remains concerned about the elevated sovereign-bank nexus and maturity mismatches.

Nonetheless, it was judged that no macroprudential capital and liquidity measures should be activated to rein in these imbalances. Banks' sovereign exposure has been declining from its peak in September 2022, and may continue on the downward trajectory given the anticipated fiscal consolidation. Should this unfold, the associated contagion risk may dissipate. Not only would the expected fiscal consolidation facilitate the shrinkage of the sovereign-bank nexus, but the reduction in risk premiums and essentially the cost of borrowing, and the expansion in financial intermediation. With lower interest rates and reduced domestic borrowing, banks would expand credit extension to businesses and households. Similarly, the positive maturity gap has been steadily declining. Currently, banks' exposure to the underlying liquidity and interest rate risks is limited and does not raise apparent financial stability fears.

[9]The use of the CCyB is pursuant to section 54 of the Banking and Financial Services Act (BFSA) of 2017

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Appendix

Heatmap at a Glance

A heatmap is a two-dimensional representation of data in which values are represented by colours. It shows a visual summary of various vulnerabilities and risk indicators whilst providing an easy interpretation of the historical evolution and movement of systemic risk metrics. Ideally, a Heatmap displays the evolution of distress in the financial system based on prescribed risk categories. It is not designed to predict the timing or severity of a financial crisis but to identify underlying vulnerabilities that could potentially lead to a crisis. It helps signal the potential threats to financial stability. In terms of interpretation, the 'blue' colour indicates low risk or vulnerability, 'red' is representative of high risk or vulnerability and 'white' represents medium risk or vulnerability.

While the colours are assigned to fixed scales in the case of those indicators with pre-determined trigger points, they are assigned to relative values where the percentile system is used. This means that the evolution of colours is dynamic, and can therefore, change with the addition of more observations to the distribution.

Table 10: Full Heatmap