COMESA REGION
FINANCIAL STABILITY REPORT 2023

COMESA MONETARY INSTITUTE

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ABREVIATION

AfCFTA	African Continental Free Trade Area.
BIS	Bank of International Settlement
CAR	Capital Adequacy Ratio
CCyB	Countercyclical Capital Buffer
CMI	COMESA Monetary Institute
COMESA	Common Market for Eastern and Southern Africa
COVID-19	Corona Virus Disease of 2019
DSIBs	Domestic Systemically Important Banks
ECB	European Central Bank
ECL	Expected Credit Loss
EMDEs	Emerging Markets and Developing Economies
ESG	Environmental, Social and Governance
ESRB	European Systematic Risk Board
FSAF	Financial Stability Assessment Framework
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSC	Financial Stability Committee
FSD	Financial Stability Department
FSFI	Financial Stability Framework Index
FSI	Financial Stability Index
FSIs	Financial Soundness Indicators
FSR	Financial Stability Report

FTSE	Financial Times Stock Exchange
GFSR	Global Financial Stability Report
GHC	Green House Gas
HQLA	High-Quality Liquid Assets
IFRS 9	International Financial Reporting Standard 9
IMF	International Monetary Fund
LCR	Liquidity Coverage Ratio
MDFSC	Multidisciplinary Financial Stability Committee
MOU	Memorandum of Understanding
NBFIs	Non-Bank Financial Institutions
NDCs	Nationally Determined Contributions
NGFS	Network for Greening the Financial System
NSFR	Net Stable Funding Ratio
PPF	Private Pension Fund
RFI	Regional Financial Integration
ROA	Return on Assets
S&P	Standard and Poor's
UNFCCC	United Nations Framework Convention on Climate Change

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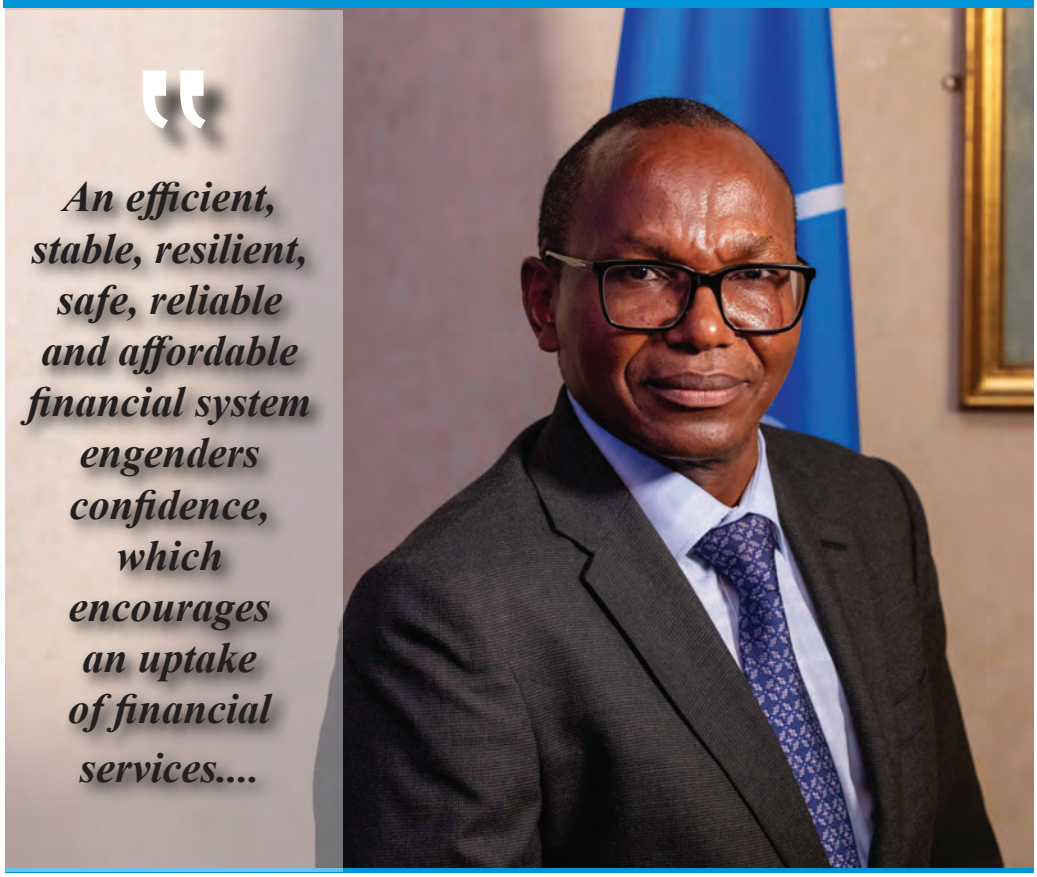
FOREWORD



The objective of the Common Market for Eastern and Southern Africa (COMESA) is to achieve sustainable economic and social progress in its member states through increased cooperation and integration, mainly focusing on promotion of free trade in goods, services and human resources across the region. Over time, the region has witnessed increased interconnectedness with increasing flow of transactions, necessitating the need for financial systems including banks, non-banks, and payment systems, to be fostered to facilitate safe and reliable transactions and efficient intermediation of risks and funds in the region. An efficient, stable, resilient, safe, reliable and affordable financial system engenders confidence, which encourages an uptake of financial services, supports trade and contributes to the growth and development of the COMESA region. A robust financial system that defines and addresses stability issues in an harmonized way is therefore becoming critical in the COMESA region. Hence article 4 of the COMESA Treaty endeavors to harmonize macroeconomic policies across the region, enhance economic growth in member countries and improve living conditions of people in the region.

The COMESA Financial Stability Report (FSR) 2023, is the third edition and is one of the tools used by the COMESA Monetary Institute (CMI) to assess

financial stability risks and to inform decisions on mitigation measures required to enhance financial stability and growth in the COMESA region. The FSR entails an analysis and reports developments in the legislative and institutional arrangements in the member countries, the main macro-financial risks facing the region, and the performance of the banks and non-banks amidst global and regional macro-financial and geopolitical shocks. The report also analyses the impact of emerging risks to financial stability, such as climate change and Fintech, faced by the member countries. Hence, the cooperation of the COMESA member countries in developing this report, which provides a holistic view of the financial stability in the region's systems, pointing out its strength, and providing recommendations for detected deficiencies, to inform interventions to mitigate risks to financial stability.

The report is structured in six interlinked chapters. Chapter 1 provides an in-depth analysis of the legislative and institutional assessment framework for financial stability in COMESA member countries. Chapter 2 reviews the global and regional macro-financial developments, covering interlinkages in the COMESA financial system and risks to the regions' financial system stability. Chapter 3 provides an assessment of the performance of the COMESA banking sector based on financial soundness indicators (FSIs) and it also provides a Financial Stability Index (FSI) for some of the COMESA member countries. An analysis of the non-banking sector and payment systems, and their main sources of risks is provided in chapter 4 while chapter 5 provides stress test results of the banking sector. Chapter 6 focuses on a selected topic by the member countries, which in this case is the impact of climate change on the stability of the financial system.

Director of CMI

Lucas Njoroge (PhD)

EXECUTIVE SUMMARY

This FSR report provides an analysis of legislative and institutional developments in the member countries, the main global and regional macro-financial developments and risks facing the region, and their impact on the performance of the banks and non-banks as well as a report on stress tests of selected COMESA member countries. The report also covers emerging risks to financial stability from climate change.

Recognizing the need for stronger policy to foster financial stability and development, the COMESA Monetary Institute (CMI), through its Financial System Development and Stability (FSDS) sub-committee revised the Financial Stability Assessment Framework (FSAF), in comformity to international best practices. The revised COMESA FSAF is structured on five pillars: (i) institutional arrangements, (ii) definitions, objectives, and scope, (iii) financial stability assessment, (iv) macroprudential policy toolkit, and (v) communication and accountability.

The assessment of the implementation of the five pillars of the FSAF across the region shows that: (i) institutionally, the majority of the member countries have established institutional arrangements for financial stability with the assignment of the mandate to a department within the central bank, in addition to a committee on the internal or multidisciplinary level in some countries. However, departments in some countries lack independence from micro-prudential supervision. (ii) Majority of the COMESA member countries have adopted similar definitions for the main concepts related to financial stability which highlights the harmony across the region regarding financial stability issues. However, some member countries need to set intermediate objectives for macroprudential policy to ensure its operability. (iii) Regarding the operationalization of the policy, most of the member countries identify potential systemic risks, monitor analytical tools, and implement stress tests mostly on the banking sector. (iv) The COMESA member countries have established the frame for the deployment of macroprudential policy tools, however, the macroprudential designated authority in some countries lack the power to implement these tools for macroprudential objectives. Finally, (v) most COMESA member countries publish Financial Stability Reports whether annually or semi-annually on central banks' websites. However, they are still gravitating towards achieving a full implementation of communication and accountability strategy.

Assessment of the member countries' progress in implementing the five pillars based on the Financial Stability Framework Index (FSFI) shows an average COMESA FSFI score of 0.65, which means that 65 percent of the financial stability framework was achieved by member countries. The analysis also showed that eight countries recorded an index level higher than the regional average, reflecting progress in implementation of a harmonized financial stability framework.

Analysis of the global and regional macro-financial developments shows that global economic activity was steady and resilient in 2023 as price pressures

receded against a backdrop of supply chain constraints caused by worsening geopolitical tensions. COMESA region's output growth was somewhat sluggish amid increasing price pressures fueled by higher food and energy costs as well as weaker local currencies. Yields on COMESA local currency government securities rose due to elevated funding pressures. With access to international capital markets restricted due to the broadly high sovereign risk ratings across the region, many governments are increasing their reliance on domestic borrowing, which has led to declines in private sector lending. Since the 2022 COMESA FSR, the balance of risks to the growth outlook is tilted to the downside. While upside risks are likely to emanate from further easing in global financial conditions, some key downside risks, including worsening geopolitics, climate shock (food insecurity and erratic supply of electricity) and sovereign risk, remain.

Turning to the banking sector developments, the sector in the COMESA region remained stable despite global economic uncertainties emanating mainly from geopolitical tensions. The banking sector continued to be adequately capitalized, liquid and profitable, mainly due to the resilience of domestic economies to global shocks and high capital buffers supported by banks' profitable operations. Generally, banks in the region continued to hold capital buffers above the Basel regulatory requirement and enough liquid assets to withstand plausible liquidity shocks within the period assessed. Furthermore, the credit risk in some COMESA Member States remained moderate.

In addition, an FSI was developed for five of the COMESA member countries, to give an overview of the level of financial stability in selected COMESA member countries. The COMESA region's FSI averaged 0.51 during the period 2016-2023, which reflects a moderate level of financial stability. The index declined slightly in 2023 compared to the previous year, at an average of 0.52 for the year, which remains above its historical average. This was mainly attributed to the decrease in both the banking sector's performance and the financial markets development sub-indices, reflecting the decline in loan coverage and liquidity ratios on the aggregate level of the region's banking sector. Nevertheless, there was a notable increase in the return on equity ratio and a decrease in non-interest expenses relative to gross income. The decrease in the financial markets development sub-index can be attributed to global uncertainty and heightened investor risk aversion during the year exacerbated by geopolitical tensions.

On the other hand, the domestic macroeconomy sub-index witnessed relative stability during 2023, with a modest decline, primarily due to rising inflation across member countries but this was partly offset by an improvement in the ratios of current account and fiscal balances to GDP. Furthermore, the global economic climate sub-index witnessed an improvement, driven by a decline in global inflation.

To gauge the extent of potential systemic risks from excessive credit growth, developments in the private credit to GDP ratio and its gap were analyzed. The ratio was diverse among 13 COMESA countries in 2023. The private sector credit to GDP gap was below the regional average ratios for emerging market economies (58%),

frontier markets (49%) and least developed countries (34%) during the decade of 2010-2020, except for Tunisia and Mauritius.

The historical analysis of the private credit to GDP ratio and its gap conducted for four COMESA countries (Zambia, Mauritius, Egypt and Uganda) indicated that both Mauritius and Egypt are currently in a downturn phase for their credit-to-GDP ratios. Uganda entered an upturn at the end of 2023, while Zambia has been in an upturn since the second quarter of 2022. Private credit growth has either remained steady or declined in 2023 for these four economies, suggesting that the fluctuations in the credit cycle have primarily been influenced by changes in economic growth and inflation rates, rather than excessive credit growth.[1] In general, the analysis concludes that for the four COMESA countries, there is no evidence for systemic risk buildup as a result of excessive credit growth.

As for financial deepening post the pandemic, some countries experienced a retreat in financial depth with a decreasing private credit to GDP ratio from 2020 to 2023, after an increase from 2015 to 2020. On the contrary, Burundi, Rwanda, Zambia, Malawi and Zimbabwe experienced improved financial depth in 2023 compared to 2020, driven by private credit growth either coupled with economic recovery as in Rwanda, or inflationary pressures and relatively weak economic growth as in the rest of the countries.

Non-bank financial institutions (NBFIs) constitute one of the financial intermediaries similar to the banking sector. Thus, NBFIs facilitate alternative financial services, such as investment (both collective and individual), risk pooling, financial consulting, brokering, money transmission, retirement financial planning and check cashing. NBFIs also provide services that are not provided by banks, thereby complementing banks rather than competing with them. The growth and development of NBFIs in COMESA member countries, has enabled them to provide financial services to population that are unserved or underserved by the banking sector, especially in remotes areas. The NBFIs in the COMESA region generally remained stable in 2023, with a predominance of the insurance and pension industries. In COMESA member countries, the insurance activity was well capitalized with a satisfying level of solvency differently distributed across countries in 2023. The profitability was also positive for both life and non-life insurance companies with non-life being more profitable in many countries. As for pension funds, the private pensions funds sector was well managed in terms of investing the subscriber's funds in most of the countries and profitable, particularly in Zimbabwe during the review period. The non-banking sector in the COMESA member countries also include other smaller segments, such as mutual funds and microfinance entities, which registered mixed performance across countries in the region during the review period.

Analysis of the indicators on financial markets show that the performance of COMESA's major stock exchanges, including the Nairobi Securities Exchange (Kenya), the Egyptian Exchange (Egypt), and the Stock Exchange of Mauritius, was mixed in 2023, while smaller exchanges remained highly illiquid. All-Share Index (ASI) recorded a significant increase, driven by various factors including speculative trading, inflationary pressures,

[1] Nevertheless, Zambia continues to experience high growth rates of private credit, despite disproportionate economic growth.

reliance on commodity exports, in addition to external and structural factors.

Persistent inflation, currency volatility, and fiscal deficits have posed significant risks across COMESA countries. Global commodity price fluctuations and policy missteps accentuated volatility. Political uncertainty in some countries undermined investor confidence, contributing to capital flight and reduced market participation. Moreover, weak regulatory frameworks across many COMESA markets have hindered the development of deep and liquid capital markets, limiting their ability to attract long-term investments.

There are opportunities for growth in the COMESA capital markets, particularly in fintech, climate finance and trade. FinTech, digital transformation and mobile-based trading platforms are attracting retail investors, boosting market liquidity, creating opportunities to expand access to capital markets and promoting financial inclusion. Green bonds are also gaining interest as COMESA countries seek to finance renewable energy projects and climate-resilient infrastructure. The African Continental Free Trade Area (AfCFTA) presents a significant opportunity for cross-border capital flows, market integration, and increased liquidity. Cross-listing of securities among exchanges could enhance diversification and investment opportunities.

The banking sector was subjected to stress tests based on the latest published FSRs of some COMESA member countries. The stress test results show that the banking sectors are resilient to disruptive shocks under various scenarios. In addition, the results were generally favorable based on severe, yet plausible assumptions of key economic and financial variables.

A unified macroeconomic scenario was applied at the aggregate level of the largest banks in some COMESA member countries – representing about 80% of the banking sector assets - for assessing their resilience in terms of the adequacy of their capital to cover unexpected losses. Stress testing incorporates several risks: sovereign credit risk of the government sector credit portfolio and the financial investment portfolio in government securities in domestic currency, concentration risk, and market risk emanating from interest rate and foreign exchange rate movements.

Stress test results showed that the capital is adequate to absorb the losses resulting from shocks, where post-shock Capital Adequecy Ratio (CAR) for most countries' banking sectors recorded levels higher than what is required by Basel, based on actual financial data as of December 2022 and 2023.

Analysis of implications of climate change on financial stability showed that climate change and its underlying risks are one of the most critical challenges facing the economy and financial sector globally. The physical risk as well as the risk of a disorderly transition to a low-carbon economy could impact the safety and soundness of financial institutions, fuel vulnerabilities and financial fragilities. The analysis shows that, overall, climate risk could have destabilizing effects on the financial system, such as a rise in credit risk and falling asset prices. The recommendations point to the need to effectively assess climate related risks, embed effective risk management practices and strengthen financial system resilience to risks posed by climate change.

CHAPTER 1:

FINANCIAL STABILITY LEGISLATIVE AND INSTITUTIONAL FRAMEWORK OF COMESA MEMBER COUNTRIES

1. Introduction

The COMESA region has been facing many shocks recently, ranging from the COVID-19 pandemic, the Russian Ukrainian war, to the geopolitical risks around the continent, which threaten financial systems stability. Enhancing the resilience of the COMESA financial system is thus critical to ensure its ability to withstand shocks. Furthermore, there is a need to establish harmonized frameworks for financial stability assessment across the region, especially with the increasing economic and financial interconnectedness between countries in general, and within the region in particular. Harmonized financial stability frameworks enable the set-up of institutional and legislative arrangements that ensure the operationalization of macroprudential policy to limit the build-up of systemic risks, which ultimately would contribute to financial stability.

The taskforce of the FSDS Sub-Committee developed and revised the FSAF in 2023. [2] The revised framework includes five pillars, covering the institutional and operational arrangements needed for financial stability. Although it was reviewed by the European Union, in April 2023, and deemed to be well structured as per international best practices and detailed enough to capture countries' development in terms of financial stability framework implementation, the framework is revised every year based on countries' assessments. This enables the framework to be applicable at a country level in assessing financial stability.[3]

Based on the last review of the FSAF, some elements have been added under the pillars. Therefore, the financial stability framework index has been modified to capture these

[2] The FSDS sub-committee, established under the CMI, has developed the COMESA FSAF to determine the elements recommended to be established in the systems of the member countries to maintain financial stability, as per international best practices. The developed assessment framework aims, not only to harmonize the financial stability across the region, but more importantly, to provide member countries with a guidance for the implementation of the needed arrangements and operationalization of the relevant policy and analytical tools, that contribute to the maintenance of financial stability in each country. On the other hand, the CMI is using this framework as a reference for assessing countries implementation progress on FSAF, which would generate recommendations motivating countries to develop their frameworks.

[3] The FSDS Sub-Committee of the CMI has revisited the framework that was established for the assessment of financial stability frameworks in all member countries, and a new framework was developed and approved by the FSDS sub-committee, and the Governors Committee. It is noteworthy that the new framework was accredited by the European Union, in April 2023. It is deemed to be well structured as per international best practices and is detailed enough to capture countries' development in terms of financial stability framework implementation.

updates. The country's assessment of the implementation of recommendations by Governor's Committee using the revised FSAF, is reported in Figure 1.

Figure 1: Pillars of the COMESA Financial Stability Assessment Framework

Financial Stability Assessment Framework (FSAF)

Pillar 1: Institutional Arrangements	Pillar 2: Definitions, Objectives and Scope	Pillar 3: Financial Stability Assessment	Pillar 4: Macroprudential Policy Toolkit	Pillar 5: Communication and Accountability
Committee (internal or multidisciplinary) - Membership and Chairpersonship - Crisis Management mandate. - Legal basis. - Powers. - Decision-making process. - Meeting's frequency. - Coordination with other policies. - Autonomy.	**Definitions** - Financial stability. - Macroprudential policy. - Systemic risk.	**Systemic risks** - Structural risk. - Cyclical risk.	**Policy Tools** - Capital-based Instruments. - Asset-side Instruments. - Liquidity -based Instruments. - Market-based Instruments.	**Communication** - Publishing the institutional and legislative framework for financial stability. - Publishing the macroprudential policy strategy. - Publishing the financial stability report. - Publishing the macroprudential policy decisions. - Follow up on the implementation and impact of the applied policy decisions.
Department - Custodian Authority - Legal Basis - Autonomy of Objective - Location of the entity in the organizational structure of the Central Bank. - Managerial Reporting Level - Coordination within and outside the Central Bank.	**Objectives** - Primary objective. - Intermediate objectives.	**Analytical tools** - Tools for monitoring structural risks. - Tools for monitoring cyclical risks. - Stress tests (risks, components of the financial system to which stress tests are applied).	**Level of implementation of tools** - Tools in process of establishment. - Tools established and ready for deployment in case of risk. - Tools already deployed in the financial system.	
Coordination - Coordination between internal and multidisciplinary committees (if applicable). - Coordination between financial stability department and committee.	**Scope of macroprudential policy** - Banking sector. - Non-banking sector. - Financial markets. - Financial infrastructure.	**Decisions taken based on the results of analytical tools**	**Activation of tools** - Decision-making process to establish/ activate/amend macroprudential policy tools. - Authority responsible for the implementation. - Purpose of deploying policy tools.	**Accountability** Appear before Parliament.

2. Assessment of the Financial Stability Framework in Selected Member Countries

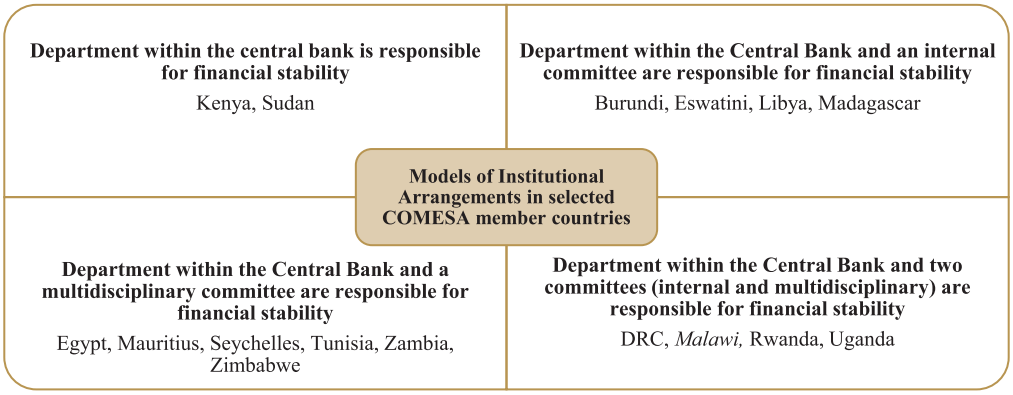
Based on the five pillars in Figure 1, a questionnaire was developed, by the taskforce, and sent to the COMESA member countries to monitor their progress in the implementation of the financial stability framework. 16 COMESA member countries[4] responded to the questionnaire and are included in the analysis of the framework in this chapter. The analysis reflects the status of implementation across the COMESA member countries, and the extent to which financial stability frameworks are harmonized across countries.

Member countries' responses showed that six out of 16 countries have developed and adopted a formal macroprudential policy framework, including the institutional and legislative framework for the analytical and policy tools, in addition to the communication and accountability strategies. These are DRC, Egypt, Mauritius, Rwanda, Uganda and Zambia. A formal framework is in progress in Kenya, Madagascar, and Malawi, where it is planned to be established by 2025-2026. Similarly, in Tunisia, in the next three years, the Central Bank will continue its efforts to support its macroprudential policy as part of its strategic project regarding "the establishment of a formal framework for identifying risks to economic and financial stability, strengthening of the crisis management and communication system". Furthermore, in Seychelles, the Central Bank is seeking assistance from the IMF to develop the macroprudential framework and toolkit.

2.1. Institutional Arrangements

In the COMESA region, four models of institutional arrangements for financial stability can be identified according to the presence of committees and/or departments responsible for financial stability in respective countries. These models can be summarized in Figure 2.

Figure 2: Models of Institutional Arrangements in Selected COMESA Countries.



[4] Burundi, Democratic Republic of Congo (DRC), Egypt, Eswatini, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Tunisia, Uganda, Zambia, and Zimbabwe.

2.1.1. Financial Stability Committees

Internal Committee

Eight-member countries have established autonomous internal committees responsible for financial stability and crisis management. [5] However, in DRC the crisis management mandate is assigned to the multidisciplinary committee. The committees in Burundi, DRC, Eswatini, Libya, Madagascar, and Malawi are authorized by terms of reference or decisions issued by the governor and internal governances, while in Rwanda and Uganda, the Central Bank law stipulates for the establishment of these committees.

As for the structure, all committees are chaired by the Governor of the central bank, except in Malawi where the committee is chaired by the Head of the Financial Stability Unit. These internal committees comprise of heads of central bank departments deemed relevant to financial stability. In this regard, committees are split into two groups: the first group comprises only the departments related to the stability of financial institutions, while the second group includes committees with the membership of departments responsible for macroeconomic policies, especially monetary policy and market related policies. It is noteworthy that the membership of the second group of committees, in contrast with the first group, ensures coordination and cooperation with macroeconomic policies, even if not clearly stipulated in its legal framework.

Figure 3: Membership of Internal Committees

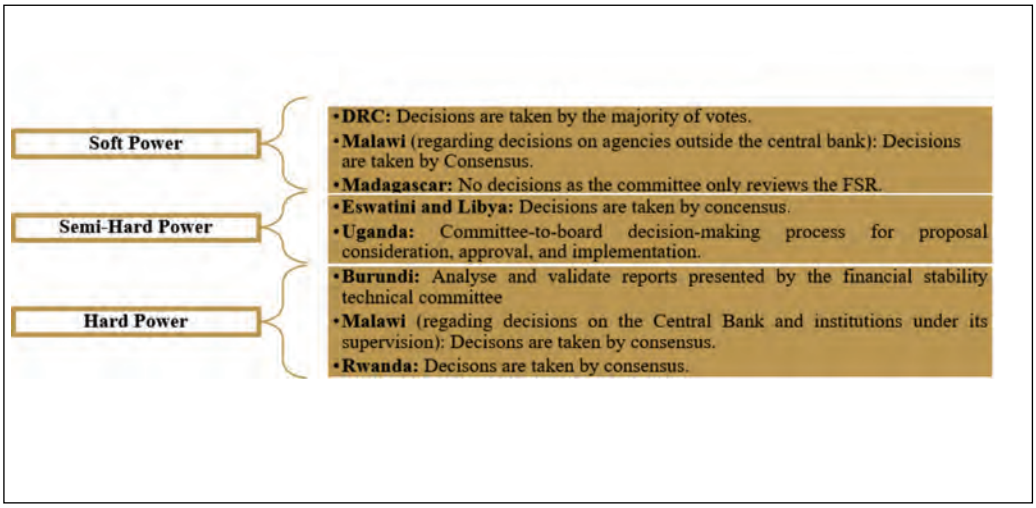
Group 1: No interaction with macroeconomic policies Burundi, DRC, and Eswatini	**Group 2: Interaction with macroeconomic policies** Libya, Madagascar, Malawi, Rwanda and Uganda
Members of the Committee ▪ Financial/Banking Supervision ▪ Financial Regulation ▪ Financial Markets ▪ Economic Research and Statistics ▪ Risk management and Operations ▪ Payment System	**Members of the Committee** ▪ Financial Supervision (including banks and non-banks) ▪ Economic Research and Statistics ▪ Payment System ▪ Foreign Reserves and Flows ▪ Financial Markets ▪ Risk management and Operations

The committees in Burundi, DRC, Libya, Malawi, Rwanda and Uganda meet quarterly, while in Eswatini the committee meets semi-annually, and annually in Madagascar. During these meetings, committees assess financial system risks and macroeconomic vulnerabilities in order to define macroprudential policies. In addition, the committee in Madagascar meets to review and approve the FSR.

[5] Establishing an internal committee, with members representing different central bank's departments, ensures the coordination and consistency of central bank's functions, especially between macroprudential, monetary and micro-prudential policies. The Central Bank of Kenya is planning to establish an internal committee for financial stability.

As for powers, decision-making processes and type of decisions, the eight committees can be categorized as shown in Figure 4.

Figure 4: Power of Internal Committees



Multidisciplinary Committee

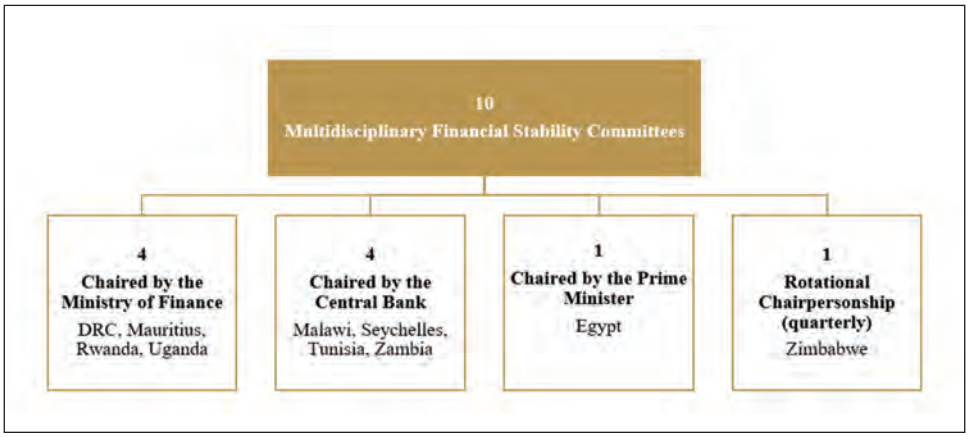
On the national level of the financial systems, ten-member countries have established multidisciplinary committees responsible for financial stability and crisis management (except in Mauritius where the mandate does not include crisis management). The committees in DRC, Egypt, Mauritius, Tunisia, and Zambia are authorized by the law of the Central Bank. In Seychelles, the Financial Stability Act, 2023, provides the mandate for financial stability. Whereas committees in Malawi Uganda, and Zimbabwe are authorized by terms of reference issued by the governor, and in Rwanda, the multidisciplinary committee was authorized by Prime Minister Instructions following the Cabinet approval. [6]

It is noteworthy that three other member countries are in process of establishing their multidisciplinary committees. In Burundi, the memorandum of understanding is in progress, and in Eswatini, it is planned to be established after the promulgation of the Financial Stability Law. In Madagascar, a draft law on financial stability provides for the setting up of two Multidisciplinary Committees in charge of financial stability by 2025/2026. The adoption of the law is underway at the Government Council.

Regarding the chairpersonship, COMESA member countries' multidisciplinary committees are mostly chaired by the Ministry of Finance or the Central Bank, as indicated in Figure 5.

[6] Terms of Reference of the committee have been issued by the Governor with no clear statutory mandate. The Reserve Bank of Malawi Act is in process of being amended to provide the legal infrastructure for financial stability, including the establishment of the Financial System and Stability Development Committee (FSSDC), its mandate, and its membership.

Figure 5: Chairmanship of Multidisciplinary Committees

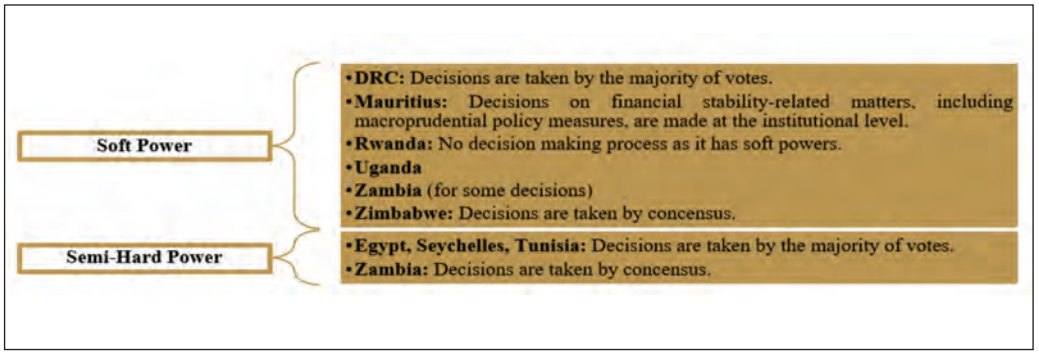


As for the membership, the multidisciplinary committees in the ten COMESA member countries are inclusive of all financial systems' regulators and stakeholders. Central Banks and Ministry of Finance are members in all the committees. In addition, other financial regulators, where applicable, are also included in the committees in DRC, Egypt, Malawi, Rwanda, Seychelles, Tunisia, Uganda, Zambia and Zimbabwe. This inclusive aspect of the committees ensures the coordination between macroprudential policy and other macroeconomic policies, especially monetary and fiscal policies.

The committees in DRC, Egypt, Seychelles and Zimbabwe meet quarterly while the committees in Tunisia, Rwanda, Uganda and Zambia meet twice a year, and in Mauritius, the Financial Stability Committee meets as often as necessary and regulates its meetings and proceedings as it sees fit. [7]

As for powers decision-making processes and types of decisions, the committees can be categorized as depicted in Figure 6.

Figure 6: Power of Multidisciplinary Committees



With the presence of internal and multidisciplinary committees, the COMESA member countries ensure the interaction and complementarity between both committees. In Malawi, the committees are complementary; the Financial Systems Stability and

[7] The Financial System and Stability Development Committee (FSSDC) in Malawi is in process of establishment waiting for the amendment of the Reserve Bank of Malawi Act.

Development Committee (FSSDC), the multidisciplinary one, is a policy committee, while the Financial Stability Technical Committee (FSTC), the internal one, serves an advisory role to the FSSDC. In Rwanda, the internal committee proposes the agenda aligned to the responsibilities of the multidisciplinary committee. Subsequently, the committee adopts coordinated measures to maintain financial stability, increase the resilience and stability in the domestic financial system. In Uganda, decisions are made collaboratively, and each committee member agency is responsible for implementing agreed-upon actions and recommendations within their respective areas, ensuring alignment across the financial sector, and regular follow-ups are made to monitor progress.

2.1.2. Financial Stability Department

In light of the pivotal role played by the central banks in most of the COMESA member countries in maintaining financial stability, the central bank spearheads the coordination and implementation of financial stability initiatives in the fourteen countries. In this regard, the central banks laws in eleven countries stipulate the maintenance of the stability of the financial system as one of the mandates of the bank (Appendix 1).

Figure 7: Objective of Entities Responsible for Financial Stability in Selected COMESA Countries

To enforce the law, and/or following international best practices, all COMESA member countries have assigned the mandate of maintaining financial stability to one of the entities within its organizational structure. Nine of these entities have the sole objective of maintaining financial stability while others adopt it as the primary objective along with another secondary objective. On the other hand, in two central banks, financial stability is not the primary objective of the assigned entity.

Two groups can be distinguished based on the level of the entity in the organizational structure of the central bank: the first level is the highest level in the central bank, which reports directly to a Board member or Deputy Governor, while the second level are entities housed under other larger structure of the central bank, which adds a layer between the entity and the Board member in the reporting scheme.

Figure 8: Reporting Levels of Entities Responsible for Financial Stability in COMESA Countries.

First Level Entities Reporting Directly to a Board Member/Deputy Governor		Second Level Entities Reporting Indirectly to a Board Member/Deputy Governor	
Egypt	Macroprudential Sector	**Burundi**	Department of Financial Stability under Directorate in charge of Supervision and Financial Stability
Eswatini	Financial Stability Unit	**DRC** [8]	Macroprudential Survey Unit under Supervision of Financial Intermediaries Department
Mauritius	Financial Stability Division	**Kenya**	Financial Sector Analysis Division under Research Department
Tunisia	Financial Stability Pole	**Libya**	Financial Stability Division under Research and Statistics Department
Zambia	Financial Stability Department	**Madagascar** [9]	Financial Stability Unit under General Secretariat of the Banking and Financial Supervision Commission
		Malawi	Financial Stability Unit under Regulation Department
		Rwanda	Financial Stability Monitoring Department under Financial Stability Directorate
		Seychelles	Financial Stability Section under Financial Surveillance Division
		Sudan	Financial Stability Unit under Banking Regulation and Development Department
		Uganda	Financial Stability Department under the Supervision Directorate
		Zimbabwe	Financial Stability, Resolution and Policy Unit under Bank Supervision Division
			Financial Stability Division under Research and Statistics Department
			Financial Stability Unit under General Secretariat of the Banking and Financial Supervision Commission
			Financial Stability Unit under Regulation Department
			Financial Stability Monitoring Department under Financial Stability Directorate
			Financial Stability Section under Financial Surveillance Division
			Financial Stability Unit under Banking Regulation and Development Department
			Financial Stability Department under the Supervision Directorate
			Financial Stability, Resolution and Policy Unit under Bank Supervision Division

[8] The process of creating an autonomous department of financial stability has already begun, this department will be operational before the end of 2024.

[9] In line with its objective of contributing to maintaining financial stability, Central Bank of Madagascar created the Financial Stability Unit in January 2013, which became the Permanent Secretariat of the internal Financial Stability Committee. In 2018, the Secretariat was attached to the General Secretariat of the Banking and Financial Supervision Commission (CSBF), responsible for micro-prudential supervision.

2.1.3. Coordination of Financial Stability Stakeholders

At the operational level, and in light of the multiplicity of financial stability stakeholders, coordination is carried out between the department responsible for financial stability and other related departments within and outside central banks. Internally, departments responsible for monetary policy, micro-prudential policy, economic research, markets, financial inclusion and payment systems liase for different reasons as shown in Figure 9. The channels of coordination and communication between financial stability departments and other departments within central banks is shown in Figure 10.

Figure 9: Internal Coordination of Financial Stability Stakeholders in COMESA Countries

Figure 10: Channels of Internal Coordination

Channels of coordination within Central Bank in selected COMESA member countries

Mails and letters
Burundi, DRC, Egypt, Eswatini, Libya, Madagascar, Malawi, Rwanda, Seychelles, Sudan, Uganda, Zambia, Zimbabwe

Inter-departmental Meetings
Burudi, DRC, Egypt, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Uganda, Zambia Zimbabwe

Working Groups

Kenya: Department of bank supervision (onsite and offsite)

and of payment system are part of macro prudential assessment team.

Tunisia: Officials of the Financial Stability Pole participate in various discussion related to the formulation and implementation of monetary policy.

Uganda: Working groups as created between financial stability, economic research, and stress testing and supervision departments.

Committees membership

Burundi,DRC,Uganda

Kenya: The Financial Sector Analysis Division attends monetary policy analytical and main meetings, and Monetary policy Implementation Committee meeting. As for the markets department, the division attends debt strategy meeting.

Tunisia: The head of Financial Stability Pole is member of the Financial Inclusion Observatory Council.

Egypt: The membership of the deputy governor responsible for the stability of the banking sector in the Monetary Policy Committee.

Malawi: The membership of the Financial Stability Unit in Monetary Policy Technical Committee (MPTC),and attends as observer in Monetary Policy Committee (MPC). Also, the departments responsible for micro-prudential supervision, markets, economic research, financial inclusion and payment system are members in Financial Stability Technical Committee(FSTC),which is chaired by the Head of the Financial Stability Unit.

Rwanda: Departments responsible for policy and research, micro-prudential supervision, market inclusion, and payment system are members in the Financial Stability Committee.

Zambia: Departments responsible for monetary policy, markets and macro prudential policy are members in the MPC and the FSC. Also, departments responsible for micro and macro-prudential policies and payment system are members in the Supervisory Policy Committee.

Deparments under the same deputy Governor

Tunisia: Departments responsible for micro and macro-prudential policies as well as the central information unit are grouped under the Financial Stability Pole.

Egypt: Micro and Macro-prudential sectors, as well as the regulation sector, are reporting to the deputy governor responsible for financial stability.

Kenya: Financial sector analysis division is under the Research department, and the division is in charge of financial inclusion

As for other financial stability stakeholders outside the Central Bank, 13-member countries communicate with the Ministry of Finance, and all departments communicate with other financial regulators, when necessary. Communication with the Ministry of Finance and other regulatory agencies, if any, is carried out as indicated in Figure 11.

Figure 11: External Communication and Coordination of Financial Stability Stakeholders

To conclude, the institutional arrangements in member countries where departments and committees responsible for financial stability coexist, interaction and coordination is ensured in between them in eight countries. Two models of interactions are captured in the COMESA member countries: (i) the financial stability entity at the central bank serves as a technical secretariat for the committee. The entity collects data and information, conducts the analysis, identifies the risks and present it to the committee during the meeting for deliberation and, if applicable, for policy decisions. This is the case in Egypt, Eswatini, Malawi, Mauritius, Uganda and Zambia. On the other hand, the second model of interaction is where (ii) the entity only reports to the committee the FSR for validation before publishing it. This is the case in Burundi and Madagascar.

2.2. Definitions, Objectives and Scope

A framework for financial stability entails defining objectives and scope. Moreover, determining the ultimate and intermediate objectives of the macroprudential policy, as well as its scope, enables authorities to achieve their targets.

A majority of central banks in the COMESA region have provided definition of financial stability. While there is no consensus as to a definition of the phrase "financial stability", it is clear among COMESA countries what it is about. On the other hand, macroprudential policy has over the past years come to the limelight as an important function of central banks and other related regulatory bodies. Macroprudential regulation has stemmed the build-up of leverage thus reducing the costs of systemic risk to financial players.

Most of the central banks – 15 out of 16 – have espoused varying financial stability definitions. The definitions entail various economic aspects and their interlinkages with financial players, who could be subject to market vulnerabilities or externalities, that would motivate policy interventions. Broadly, they refer to a situation in which financial institutions are sustainable in the medium term, and thereby having adequate capacity to absorb shocks and avoiding any potential economic damage to stakeholders who could not reasonably have anticipated exposure.

Almost all of the surveyed central banks – 15 out of 16 – have adopted financial stability objective which is aimed at maintaining resilience of the financial sector (or part of the system) and for a sustainable economic growth. For some central banks, financial stability objective is secondary to the main objective of maintaining

price stability. It also applied to the entire function for some central banks whilst explicitly relating to a particular task or function for others. Additionally, it pertained to the entire financial system for many central banks, whilst a few focused only on the banking system.

Macroprudential policy further mitigated the build-up of systemic risk by ensuring that the financial system had adequate capacity to absorb shocks instead of amplifying them. Nine surveyed central banks have already defined their macroprudential policy and eight institutions have set overall intermediate objectives for their macroprudential policy. The macroprudential policy definition pertained to the early identification and mitigating or limiting systemic risk in order to preserve financial stability. A few institutions also referred to a set of tools aimed at strengthening the resilience of the financial system.

In line with the definition provided by the International Monitery Fund (IMF), Financial Stability Board (FSB), Bank for International Settlements (BIS), eight central banks have put in place a clear definition of systemic risk, which more or less align with this definition. The IMF, FSB, BIS (2016) states that systemic risk is the risk of widespread disruption to the provision of financial services that is caused by an impairment of all or parts of the financial system, and which can cause serious negative consequences for the real economy. This builds a better grasp of identification, monitoring and mitigation of build-up of vulnerabilities.

In the same perspective, the intermediate objective of the macroprudential policies in place targeted the surveillance of systemic risks – such as the mitigation of excessive credit growth, financial leverage risk, volatile funding, liquidity risk, transmission through interconnectedness – and formulation of appropriate macroprudential policies as depicted in Figure 12.

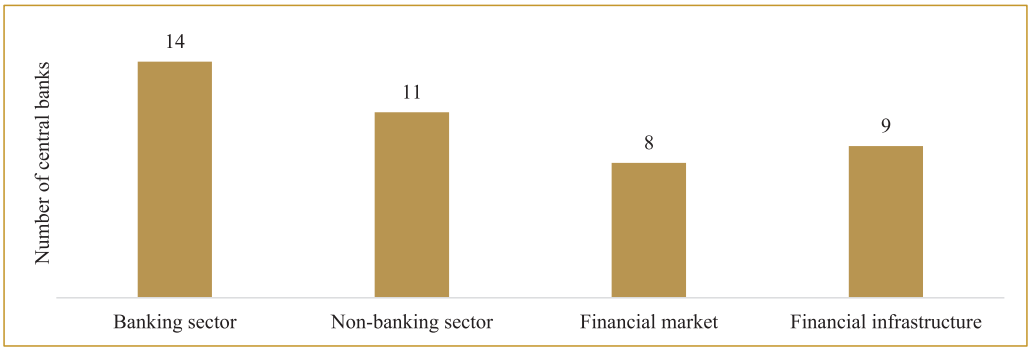
Figure 12: Intermediate Objectives of Macroprudential Policy of COMESA Member Countries

Egypt	1. Mitigate excessive credit growth and financial leverage risk. 2. Mitigate tenor mismatching, liquidity and market risks. 3. Mitigate concentration risk. 4. Mitigate domestic systemically important banks (D-SIBs) risk.
Rwanda	1. Mitigate and prevent excessive credit growth. 2. Mitigate and prevent excessive maturity mismatch and market illiquidity. 3. Limit direct and indirect exposure concentration. 4. Limit excessive risk taking by Systemically Important Institutions. 5. Safeguard the resilience of the financial sector (Financial institutions and payment infrastructure)
Sudan	1. Mitigate and prevent excessive credit growth. 2. Confine systemic risk from interconnectedness. 3. Ensure resilience of the financial infrastructure.
Zimbabwe	1. Minimize the probability or magnitude of a financial crisis through procyclical feedback between asset prices and credit. 2. Mitigate unsustainable increases in leverage and volatile funding.

Note: In DRC, the Central Bank refers to global and intermediate objectives, as defined internationally, while targeting what meets the environment of the country. Mauritius, Uganda and Zambia have set internal intermediate objectives for macroprudential policy that assist in identifying triggers for policy response.

The scope of operation of the macroprudential policy framework focused on the banking sector and non-banking sector for most surveyed banks. However, eight institutions indicated also covering the financial markets while nine of the surveyed institutions also extended to the financial infrastructure (Figure 13)

Figure 13: Scope of macroprudential operations in Selected COMESA Member Countries



To conclude on the second pillar of the framework, the majority of the COMESA member countries have defined the main concepts related to financial stability. Moreover, the similarities in the adopted definitions for financial stability, macroprudential policy, and systemic risks show the harmonisation of financial sector policies in the region. However, some member countries need to set intermediate objectives for macroprudential policy to ensure its operability.

2.3. Financial Stability Assessment

After establishing the needed institutional arrangements and governance, the first pillar towards the operationalization of the macroprudential policy is the identification and assessment of potential systemic risks that may arise in the system, taking into account the countries' macro-financial features. [10] The risks can either be categorised as structural or/and cyclical risks.

The 16 central banks recognised that systemic risk needs to be mitigated to enhance financial stability and identified and monitored a wide range of structural systemic risks, which broadly pertained to vulnerabilities from the macroeconomic, external interlinkages, financial sector and its interconnectedness with non-financial (household and corporates) sector, and financial market arenas. The macroeconomic risk enumerated by five central banks analysed economic growth, inflation and fiscal indicators, amongst others.

The risks to the financial system emanating from domestic and global developments including foreign capital fluctuations were also assessed. A sound and resilient financial system is able to withstand shocks and minimise transmission of risks from one financial institution to the rest of the financial system. Despite, the financial system being

[10] In the ESRB Handbook (2017), three main pillars are developed to operationalize macroprudential policy in countries. These include selecting and monitoring analytical tools, designing and implementing macro-prudential policy tools, and adopting communication tools

sound and resilience, threats in the form of credit risk, market risk (interest rate and exchange rate risks), credit concentration (sectoral and large counterparty exposures), liquidity risk and cross-border banking activities are monitored. All the COMESA central banks assess credit and liquidity risks. However, a few central banks assess structural risks to financial disintermediation, underdeveloped financial system, undiversified economy, financial dollarization, payment system infrastructure risks, weak institutional frameworks, and sovereign-bank nexus. Operational risk from cyber threats was also being monitored by certain member countries.

As for cyclical risks, the participating central banks reviewed macroeconomic cycles to monitor risk of overheating. Excessive credit growth and exchange rate fluctuations were also considered as key systemic threats by a few respondents. Vulnerability from climate change, particularly seasonal events, was also portrayed by two institutions as a systemic cyclical risk that is being closely assessed.

The surveyed central banks have deployed a range of tools to identify and monitor systemic risk. Almost all jurisdictions have listed various single indicators, composite index, early warning systems, and stress testing through which they assess the build-up of vulnerabilities through different lenses. Most central banks compile FSIs using the IMF manual to assess the soundness of the banking sector and the rest of the financial sector.

Macroprudential indicators were also applied in the analyses, which further strengthened the systemic risk reviews. Almost half of the central banks use a composite index and heatmaps. For instance, Burundi (vulnerability index), Egypt and Zimbabwe (financial stability index) and Mauritius (systemic risk indicator). In addition, most central banks have adopted stress testing methodologies for their banking sector, while some countries analyse the overall soundness of their economy via risk reports and dashboards.

Stress testing was recognised by the surveyed central banks as an important tool in assessing the robustness of buffers against a range of plausible shocks. 15 out of 16 central banks conduct stress test to assess the robustness of buffers against credit risk, market risk (interest rate and exchange rate shocks), credit concentration, liquidity risk, and contagion risk. [11] Some banks have also introduced climate change risk (such as droughts) in their stress test. The analysis also shows that nine central banks used stress test results to make macroprudential policy decision to limit the build-up of risks.

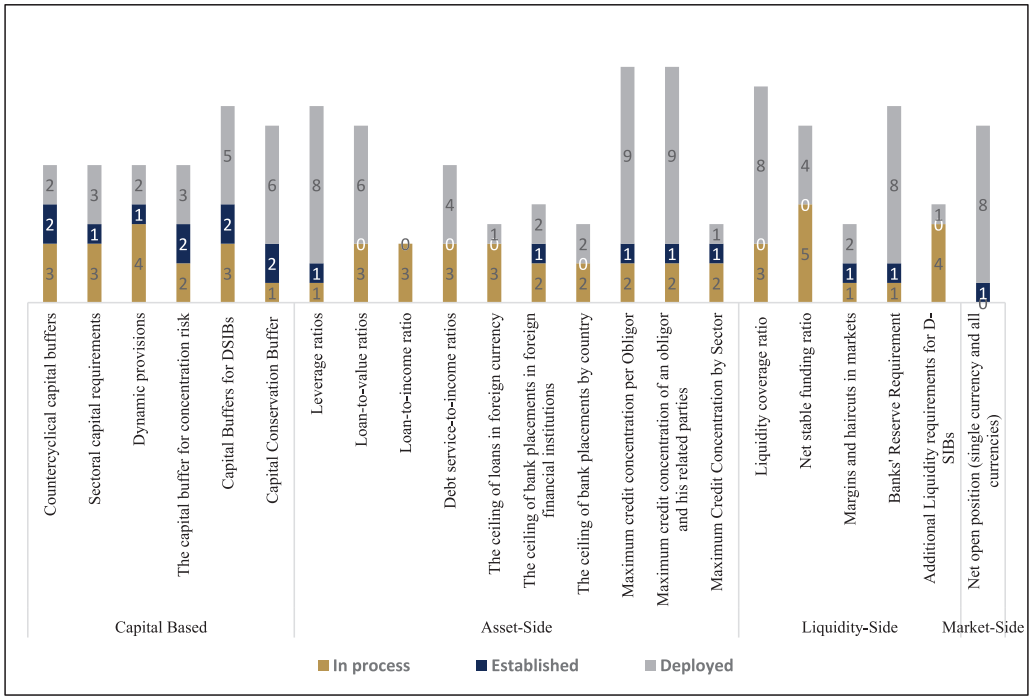
In summary, most of the member countries have started implementing the first pillar of operationalization of macroprudential policy. The member central banks undertake assessment to identify potential systemic risks, and the results are used to make policy decisions to mitigate them. In particular, stress testing is conducted in a majority of the COMESA countries. Therefore, COMESA member countries are prepared for the second pillar of operationalization – with the exception of four countries.

[11] Further details on the stress tests applied by selected central banks is reported in Chapter 5.

2.4. Macroprudential Policy Toolkit

As for the macroprudential toolkit at the disposal of the designated authority, 11 COMESA member countries are in the process or have established and/or deployed one of the macroprudential policy tools (Appendix 2). [12] The most deployed tools are: the capital conservation buffer in the capital-based tools, the maximum credit concentration per obligor, and that of an obligor and related parties in the asset-side tools. As for liquidity-side tools, the most used tools are the liquidity coverage ratio (LCR) and the bank's reserve requirements. Finally, eight countries are deploying the net open position as a market risk tool.

Figure 14: Macroprudential Policy Tools in Selected COMESA Member Countries



In all 15 countries, the Central Bank is the designated authority to deploy these macroprudential tools, consistent with the institutional arrangements in these countries, where the central bank is responsible for the macroprudential supervision on the financial system. However, these tools are not always used from a macroprudential perspective, targeting financial stability. In many cases, these tools are deployed for micro-prudential objectives, to ensure the soundness of financial institutions, and/or for monetary policy objectives, to maintain price stability. This highlights the lack of powers to implement macroprudential policy in some of the COMESA member countries.

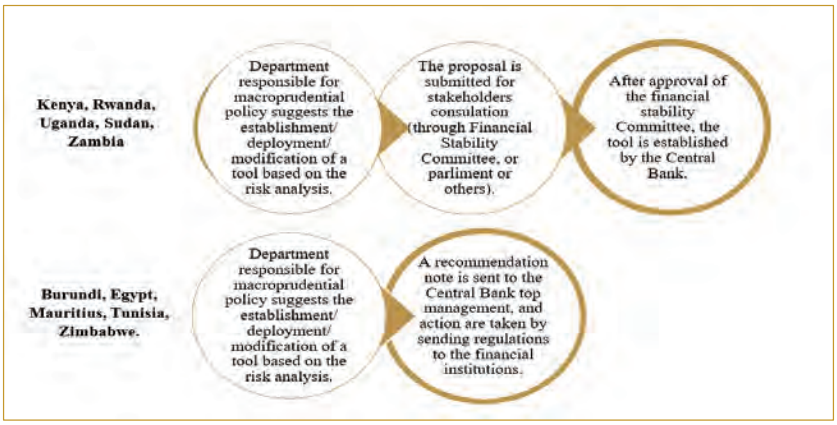
[12] Macroprudential policy is not yet established in Eswatini, Libya, Malawi, Madagascar, and Seychelles. Hence, there are no macroprudential policy toolkit in place. However, some tools are used with other objectives other than macroprudential policy.

Figure 15: Tools for Macro-prudential Policy Objective and other Objectives

Tools used for Macroprudential Policy Objective Only	Tools used for Macroprudential, Micro-prudential and/or Monetary Policies Objectives	Tools used for Micro-prudential or Monetary Objectives Only
Mauritius, Uganda, Zambia.	DRC, Egypt, Kenya, Rwanda, Sudan, Tunisia, Zimbabwe.	**Micro-prudential Objective:** Burundi, Eswatini, Madagascar, Seychelles. **Monetary Objective:** Malawi.

Notably, countries are making decisions regarding these tools on discretion or pre-defined rules. Either way, for the decisions to be taken, different processes are adopted by member countries as follows:

Figure 16: Decision making process on macroprudential policy



To conclude on the fourth pillar of operationalization of the policy, many countries have a framework for employing macroprudential policy tools, but few member countries have deployed the tools. Moreover, authorities designated to implement macroprudential policy have no sufficient powers to implement macroprudential policy decisions to maintain financial stability

2.5. Communication and Accountability

As a newly developed policy, especially in emerging countries, communication is considered as one of the tools of macroprudential policy, that could change agents' predictions and behaviors, in its early stage of establishment. In addition, communication with the public supports policy effectiveness and accountability. In addition to communication as an accountability tool, in some countries, financial stability authority is compelled to appear before parliament on a regular basis.

In normal times, and according to international best practices, macroprudential authorities in member countries should communicate with the public on five topics: (i) institutional and legal arrangements for financial stability on the Central Bank website, (ii) macroprudential policy strategy in a separate policy note, (iii) risk assessment in the

financial stability report, (iv) macroprudential policy decisions through the minutes of committee meetings, if any, or press releases from the Central Bank's Board of Directors, or others, and (v) follow up on the implementation and impact of the policies taken through press releases, or news via the website, social media sites, or others.

In this regard, most COMESA member countries are publishing FSRs whether annually or semi-annually on central banks' websites. However, they are still progressing towards achieving a full implementation of communication and accountability strategy.

Figure 17: Communication and Accountability Structures in the COMESA Countries

	Burundi	DRC	Egypt	Eswatini	Kenya	Libya	Madagascar	Malawi	Mauritius	Rwanda	Seychelles	Sudan	Tunisia	Uganda	Zambia	Zimbabwe
Institutional and legal arrangements	No	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	No
Macro-prudential Policy Strategy	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No
Risk assessment	Yes A	Yes A	Yes A	Yes A	Yes A	No	Yes[13]	Yes Bi-A	Yes Bi-A	Yes Q	Yes A	No	No	Yes A	Yes Bi-A	Yes A
Macro-prudential policy decisions	No	Yes Q	No	No	No	No	No	No	Yes A App.	Yes Q	No	No	Yes Bi-A	Yes Q	Yes Bi-A	No
Policy Follow up	No	Yes Q	Yes A In FSR	No	Yes	No	No	No	No	Yes	No	No	No	Yes Q	No	No

Note: A=Annual. Bi-A=Bi-annual. Q=Quarterly. As App.=As applicable.

In addition to the five main areas of communication, some member Central Banks communicate through the publication of other reports. For instance, the assessments of financial stability are also published as part of press statement and minutes of the Macroprudential Policy Committee meeting of the Bank of Mauritius. Similarly, in Zambia, a Systemic Risk Brief is communicated to the Monetary Policy Committee

[13] The Central Bank of Madagascar publish their risk assessment monthly or quarterly or bimonthly or annually, depending on the context.

(MPC). In Seychelles, issues related to financial stability are communicated via press releases and press conferences on a quarterly basis.

As for accountability, some Central Banks in COMESA member countries appear before the relevant committees of parliament. This is the case in Eswatini, Kenya, Malawi, Sudan, Uganda, and Zambia. Furthermore, the Macroprudential Supervision and Financial Crisis Management Committee in Tunisia submits an annual report on the execution of its mission to the Assembly of the People's Representatives. This report includes the Committee's recommendations, and the progress made in their implementation. The report may be published on the Committee's website.

To conclude on the financial stability framework, the analysis of the five pillars of the framework shows that there are disparities between the member countries regarding the implementation and accomplishment of the items used for assessment under each pillar. For easier visualization, a quantification of these qualitative items would be needed for a comprehensive assessment of the framework. Therefore, the Financial Stability Framework Index (FSFI) is developed, taking into consideration all the five pillars of the framework.

3. Financial Stability Framework Index (FSFI)

The Financial Stability Framework Index (FSFI) was first built and published in the 2021 COMESA FSR, to indicate the progress of the implementation of the framework by country. [14] In line with the progress made in developing the COMESA FSAF, the index is a combination of five sub-indices, for each of the pillars of the framework. The first sub-index, "Institutional Arrangements", reflects countries' progress in establishing a multidisciplinary financial stability committee and department. The second sub-index, "Definitions, objectives and scope", rates the presence of clear definition for main financial stability concepts, and of a formal framework for macroprudential policy, among other items. The third sub-index, "Financial Stability Assessment", reflects the identification of systemic risks and the adoption of analytical tools used by the designated authority in charge of financial stability. The fourth sub-index, "Macroprudential Policy Toolkit", rates the countries in terms of their capacity to establish and employ policy tools to address rising risks. Finally, the fifth sub-index, "Communication and Accountability", reflects the progress made by countries in terms of transparency with the general public and other relevant agencies.

The FSFI includes 29 elements from each of the five sub-indicators (Appendix 3), where the sub-indicator "Institutional and Legislative Framework" contains 8 elements, while the remaining sub-indicators contain 5 or 6 elements each. The largest weight is allocated to institutional and legislative arrangements for financial stability due to the importance of establishing the necessary infrastructure for the efficient operation of the macroprudential policy. Establishing a financial stability committee and department through binding legislation, and providing them with the necessary powers to collect

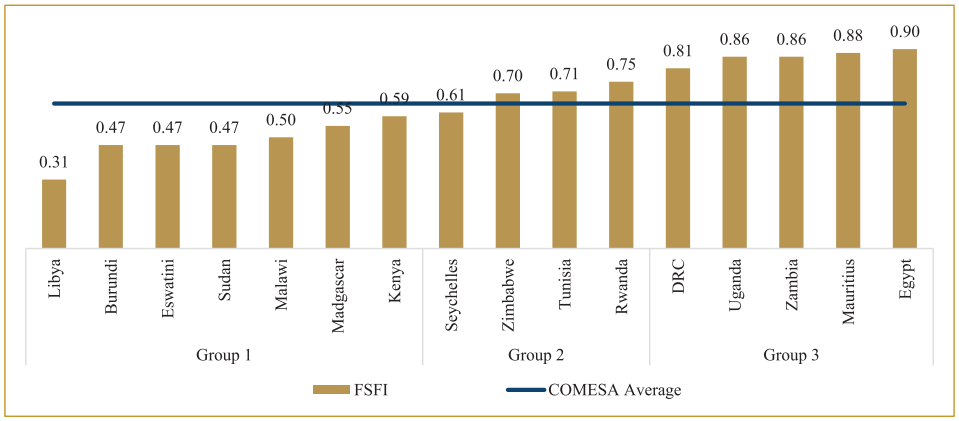
[14] The 2021 score consisted of rating the main milestones of the financial stability framework (nine items), namely, the presence of definition, systemic risk identification, formulation of a macroprudential policy framework, employment of analytical indicators, running of stress tests, implementation of policy tools, establishment of a Financial Stability Department and Committee, and publishing of FSR.

and analyze data, deploy policy tools, and enforce the decisions is the cornerstone for developing and implementing an effective macroprudential policy to mitigate the build-up of risks and maintain financial stability necessary to sustain funds intermediation and contribute to economic growth.

To build the index for each country, each of these elements takes "1" if it is implemented in line with the best FSAF and international practices, "zero" if it is not implemented, and values ranging from zero to one if it is implemented but needs to be modified or improved. Accordingly, the sub-indices are the sum of the points of the elements included in them, and the index reflects the average of those points, where all elements are of equal importance. The higher the index, i.e. the closer it is to 1, the more progress is made in implementing the framework, and vice versa.

According to this methodology, the index in the COMESA region in general recorded 0.65, meaning that COMESA member countries, on average, have achieved 65% of the best international practices in establishing and implementing a financial stability framework.

Figure 18: Financial Stability Framework Index for Selected COMESA Member Countries



It can be observed in Figure 18 that eight countries in the sample of COMESA countries recorded an index level higher than the regional average indicating their willingness to implement strong and effective financial stability frameworks. The levels of the Financial Stability Framework Index in COMESA member countries vary between 0.31 and 0.90, due to the differences in the extent to which the frameworks implemented in member countries match the reference FSAF.

Accordingly, COMESA member countries can be divided into three groups as shown in Figure 19. Analysis of the five pillars of the three country groups shows that the first group of countries stands at the first level of establishing financial stability framework, as these countries record low index levels, below the regional average. Thus, these countries need to work on establishing the institutional and legislative framework for financial stability, in terms of forming internal and/or multidisciplinary committees, or establishing independent department with a single goal, which is to maintain financial stability. Implementing this pillar facilitates the operation of the macroprudential policy.

Figure 19: Status of Implementation of the FSAF based on FSFI in selected COMESA Countries

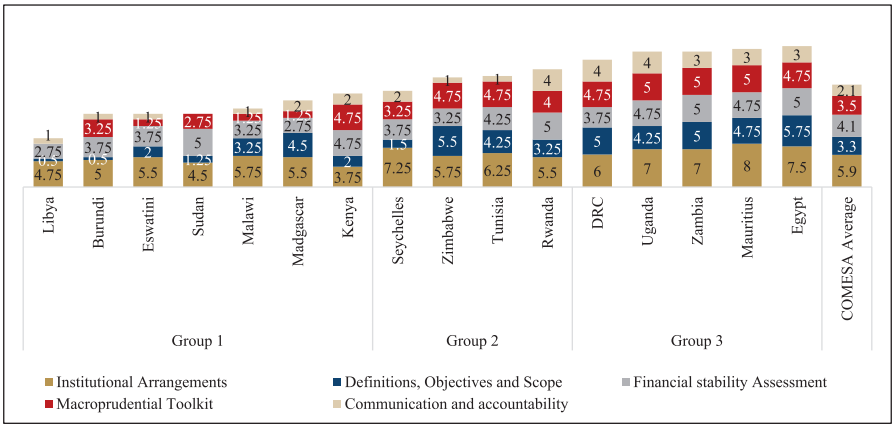
Group 1
- **FSFI:** Below region's average.
- **Countries:** Libya, Burundi, Eswatini, Sudan, Malawi, Madagascar, Kenya.

Group 2
- **FSFI:** Around region's average.
- **Countries:** Seychelles, Rwanda, Zimbabwe, Tunisia.

Group 3
- **FSFI:** Above region's average.
- **Countries:** DRC, Uganda, Zambia, Mauritius, Egypt.

The second group includes countries with average ratios of the index, which are relatively higher than the regional average. This group is characterized by establishing the institutional framework necessary for financial stability, with the need for some adjustments. However, from the operational perspective of the macroprudential policy, some countries in this group need to define their intermediate objectives and expand the scope of their work to include all components of the financial system. This is in addition to enhancing communication and transparency with the public regarding financial stability and macroprudential policy.

Figure 20: FSFI Sub-Indices for Selected COMESA Member Countries



The third group includes countries with the highest index that need to modify a limited number of elements to complete the implementation of a strong and consistent financial stability framework. In these countries, all the elements necessary to develop a financial stability framework have been implemented, but some countries need to empower their financial stability departments and/or committees to activate macroprudential policy tools, and to strengthen their communication strategy. The experience of Zambia is highlighted in Figure 21.

Figure 21: Progress in the Implementation of the Financial Stability Framework: Case of Zambia

Progress in the implementation of the financial stability framework: Case of Zambia

Based on the assessments and evaluations of the financial stability frameworks implemented in the COMESA member countries conducted in the 2022 COMESA FSR, the Financial System Development and Stability (FSDS) Sub-Committee has recommended some countries to ensure the independence and autonomy of the departments responsible for financial stability in the central bank of their jurisdictions and to enhance communication.

In light of these recommendations, the Bank of Zambia has made tremendous progress. The entity within the Bank responsible for financial stability was scaled up from a unit housed in the Bank Supervision Department, to a department for financial stability at the same level of the latter, and directly reporting to the Deputy Governor. This step ensures the independence of the macroprudential policy from the micro-prudential supervision.

Furthermore, in May 2024, the Bank of Zambia published its first Financial Stability Report, pursuant to section 34 (2) of the Bank of Zambia Act, 2022, and after the approval of the Financial Stability Committee. 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.

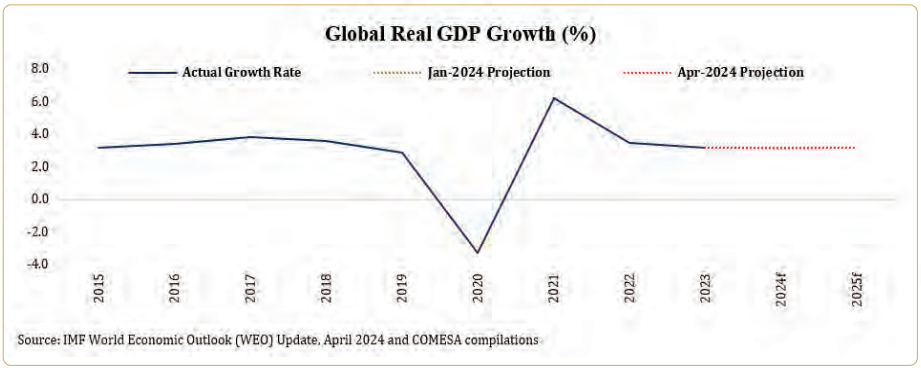
CHAPTER 2

GLOBAL AND COMESA REGION MACRO-FINANCIAL DEVELOPMENTS

1. Global Economic Developments

Global economic activity was steady and resilient in 2023 as prices pressures receded against a backdrop of supply chain constraints caused by worsening tensions in the Middle East including the Israeli-Hamas war, the Red Sea ship attacks by Houthi militants and the lingering Russian-Ukraine war. World economic output grew at 3.3%, compared with 3.5% in 2022. According to the IMF, stronger-than-expected private consumption and larger-than-expected government spending supported resilience and growth in aggregate demand in the United States (US) and several large emerging market and middle-income economies. Growth in the euro area held steady amid low consumer confidence and the overhang of high energy prices.

Figure 22: Global Real GDP Growth

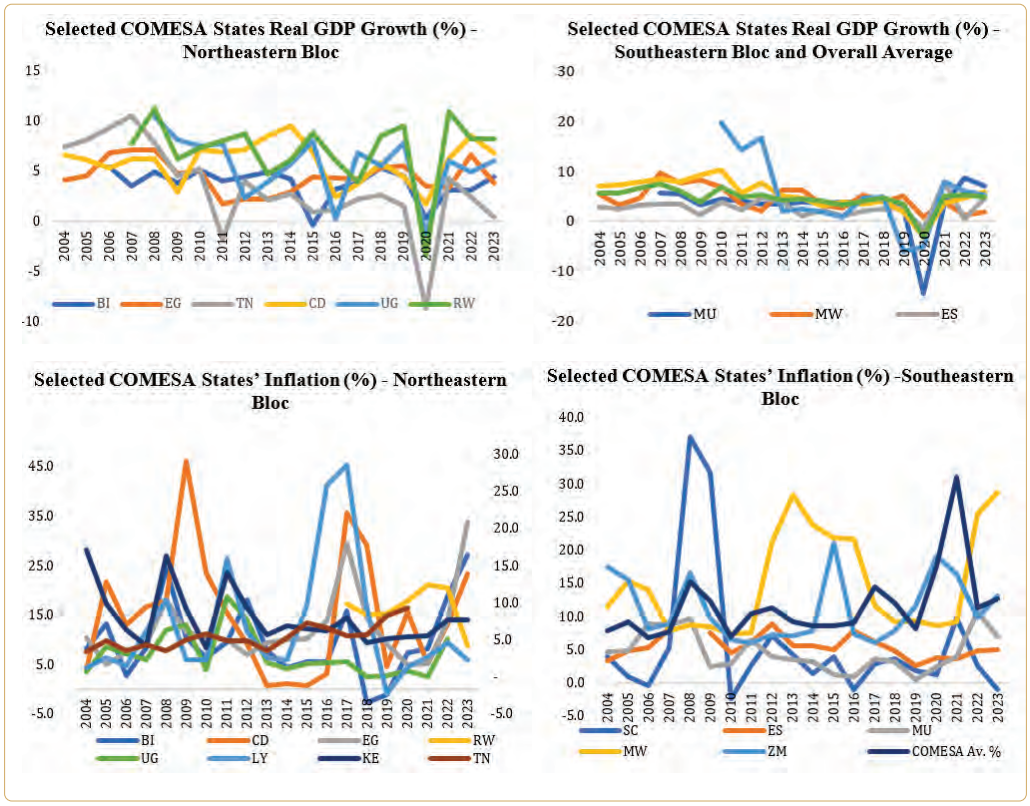


Global growth of consumer price was broadly lower in advanced and emerging market economies in the year to December 2023. Global annual inflation stood at 6.7 percent. This compares to a peak of 9.5 percent posted mid-2022. Lower energy prices, easing supply chain constraints and moderation in consumer demand accounted for the slowdown in inflation. Therefore, there was huge expectation that major central banks would be prompted to commence cutting interest rates in the near term. With this development, there is a potential tailwind for Emerging Markets and Developing Economies (EMDEs) like COMESA member states in terms of the reduced risk of capital outflows and depreciation of the exchange rates.

The COMESA region's output growth was somewhat sluggish amid increasing price pressures fueled by higher food and energy costs as well as weaker local currencies

(see Foreign Exchange section below). While the higher foods and energy prices have been buoyed by supply chain disruptions due to the ongoing conflicts and worsening geopolitics, exchange rate depreciations were mainly explained by domestic factors. The region's average GDP growth was posted at 4.9 %, which is 0.3 percentage points lower than the growth rate observed in 2022. [15] Inflationary pressures in the COMESA region rose higher in 2023. The region's average annual inflation was recorded at 12.5 % in the year to December 2023, compared with 11.4 % in the previous fiscal year.

Figure 23: Economic Growth and Inflation in Selected COMESA Countries (2004-2023)



Source: COMESA Member States, Authors Calculations

Notes: BI: Burundi, CD: Democratic Republic of Congo, EG: Egypt, KE: Kenya, LY: Libya, MG: Madagascar, MU: Mauritius, MW: Malawi, SC: Seychelles, SW: Eswatini, RW: Rwanda, TN: Tunisia, UG: Uganda, ZM: Zambia and ZW: Zimbabwe

2. Foreign Exchange Risk

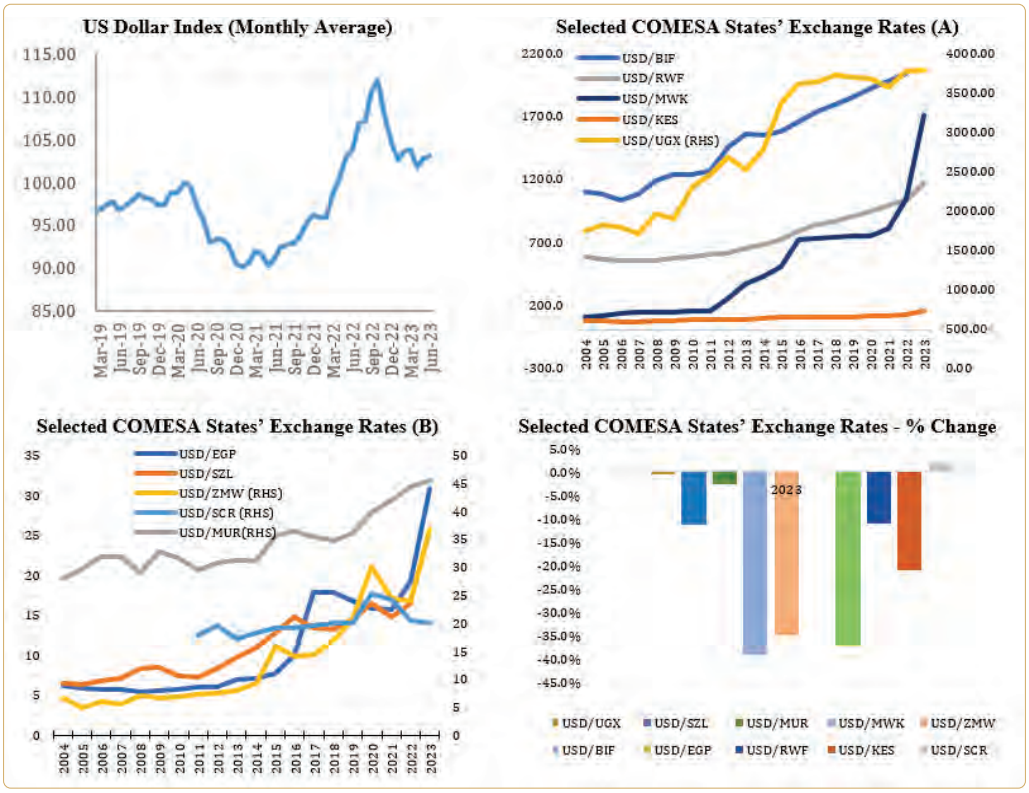
The US Dollar Index weakened by 2.4 percent due to the widely anticipated interest rate reduction by the Federal Reserve. Consequently, the MSCI Emerging Market Currency Index gained by 2.9 percent. Despite gains in the overall emerging market currency index, some currencies weakened against the US dollar with the exception of the Russian ruble and Chinese yuan as domestic factors dominated.

[15] Based on available data from 13 COMESA member countries.

The region's local currencies broadly depreciated against the US dollar, perhaps reflecting a relatively elevated US dollar interest rates as well as high food and energy costs. However, Seychelles experienced an exchange rate appreciation (2%) due to improved activity in tourism (Figure 24)

As highlighted in the 2022 COMESA Financial Stability Report, the broad-based weakness in the region's currencies amid tightening global conditions brings to light the strength of the interlinkages between the global markets and the region. Considering the frailties that reside in the region's economies, including underdeveloped markets beset with hard currency liquidity constraints, the region shall remain vulnerable to adverse developments in global markets, and this is a potential source of systemic risk.

Figure 24: Evolution of the Exchange Rate in Selected COMESA Countries



Note: USD/BIF= US dollar against Burundian Franc; USD/EGP = US dollar against Egyptian Pound; USD/KES = US dollar against Kenyan Shilling; USD/MWK= US dollar against Malawian Kwacha; USD/MUR=US dollar against Mauritian Rupee; USD/SCR= US dollar against Seychellois Rupee; USD/SZL = US dollar against Swazi Lilangeni; USD/UGX= US dollar against Ugandan Shilling; USD/ZMW= US dollar against Zambian Kwacha.

3. Global Share Prices

Share prices in most markets increased during the 12 months to December 2023 on resilient economic performance and expectation of interest rate reduction by central

banks in advanced economies. The S&P 500, Euro Stoxx 50 and FTSE 100 indices gained by 6.3 percent, 2.7 percent and 0.5 percent, respectively. In contrast, the MSCI Emerging Market Equity Index declined by 3.2 percent in the fourth quarter mainly on account of the fall in Chinese equities reflected in the Shanghai Composite Index as investors remained apprehensive about the performance of economy (Figure 25).

Figure 25: Performance of Stock Markets in Selected Advanced Economies

Source: Reuters and COMESA Compilations

Notes

S&P 500: The Standard and Poor's 500, or simply the S&P 500, is a stock market index tracking the stock performance of 500 of the largest companies listed on stock exchanges in the United States.

Euro Stoxx: The Euro Stoxx 50 is a stock index composed of 50 stocks from 11 countries in the Eurozone. Euro Stoxx 50 represents Eurozone blue-chip companies considered as leaders in their respective sectors.

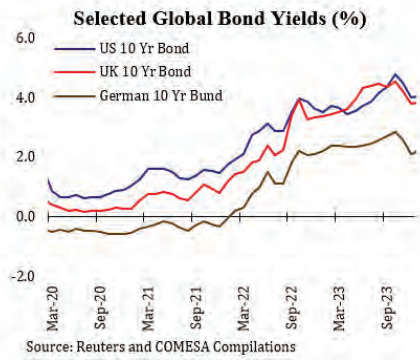
FTSE: The Financial Times Stock Exchange 100 Index, also called the FTSE 100 Index, FTSE 100, FTSE, or, informally, the "Footsie", is a share index of the 100 companies listed on the London Stock Exchange with the highest market capitalization.

SSE: The SSE Composite Index also known as SSE Index is a stock market index of all stocks that are traded at the Shanghai Stock Exchange.

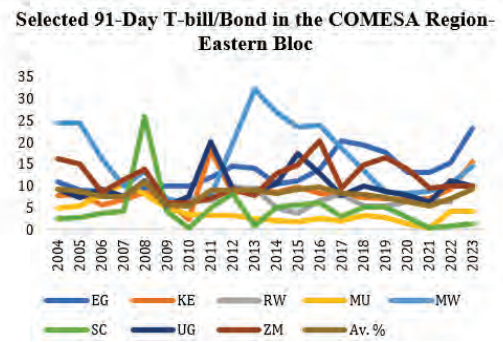
4. Global Bond Yields

Benchmark Government bond yield rates fell in the twelve months to December 2023 in line with expectations that central banks would unwind the tight monetary policy stance in view of declining inflation. In the US, UK and Germany, 10-year bond yield rates reduced by 35 basis points, 59 basis points and 58 basis points to 4.02 percent, 3.79 percent and 2.12 percent, respectively.

Figure 26: Selected Yields in the COMESA Region



Source: Reuters and COMESA Compilations



On the contrary, yields on COMESA local currency government securities rose as their valuations fell due to elevated funding pressures. With the lingering liquidity squeeze, the average yield on the shorter-dated maturity of 91-Day jumped 2.5 percentage points to 10.3 percent. Drawing on available data, the Ugandan 91-day government

security registered the highest jump of 8.0 percentage points to 23.3 percent (Figure 26).

There remains a concern that COMESA government's elevated debt and borrowing costs may have negative implications for the private sector activity and general economic development. With access to international capital markets restricted due to the broadly high sovereign risk ratings across the region, many governments are increasing reliance on the domestic capital markets at the expense of financial intermediation. Not only are the high debt servicing costs exerting upward pressure on lending rates, raising credit risk and capping the flow of credit to the businesses and households but also limiting governments' capacity to spend on programs that will spur economic growth and development. High public debt levels and the growing dependence on domestic financing are also raising funding and liquidity risk, as well as concerns around debt sustainability.

5. Prospects for Macro-Financial Conditions

Since the 2022 COMESA FSR, the balance of risks to the growth outlook is tilted to the downside. The primary upside risk is expected to come from the moderation in global financial conditions as major central banks like the Federal Reserve Bank embark on monetary policy easing. The potential broad-based depreciation of the US dollar and lower US dollar interest rates could increase capital flows to COMESA member states and induce a turnaround in their exchange rates in terms of the strengthening of the local currencies. Given the strong exchange rate passthrough to consumer prices, the potential appreciation of local currencies would lead to reduced inflationary pressures and consequently lower interest rates and credit risk on the region's financial institutions' balance sheets. This would potentially result in an increased flow of credit to the private sector. Increased capital inflows could boost the region's reserves adequacy and capital accounts, thereby reinforcing its resilience and ability to absorb external shocks.

However, some key downside risks abound which would offset the influence of the anticipated easing of global financial conditions. Sources of tailwinds in the near term include worsening geopolitics, climate shock, vis-à-vis food insecurity and erratic supply of electricity.

Since the 2022 COMESA FSR, geopolitical tensions have worsened. Aside from the ongoing Russia-Ukraine conflict, there has been an emergence of the Israeli-Hamas war which has potential to escalate in the near term. More countries have been indirectly drawn into the Israel-Hamas conflict, with the most alarming offshoots being the Israel-Hezbollah war and the Israel-Iran confrontation where the two nations engaged in direct attacks. Additionally, the maritime conflict in Yemen, where the Houthis have been attacking container ships and oil vessels in the Red Sea, is exerting upward pressure on oil prices. COMESA member states high dependence on oil imports makes them vulnerable to variations in commodity prices and disturbances in the flow of global trade. Consequently, the countries 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.

Climate risk, which was identified in the 2022 COMESA FSR as one of the key threats to the region's economic and financial stability, materialized at the tail end of 2023 affecting member states in Southern Africa. The El Nino induced drought has severely affected Malawi, Zambia and Zimbabwe, who declared it a disaster. Therefore, near term growth prospects have been heavily tainted by the El Nino-induced drought and its attendant risks relating to lower agriculture output and deficiencies in power supply considering the countries' heavy dependence on rainfed agriculture and hydroelectricity generation. The government of Zambia estimates that there was a deficit of about 1300 megawatts of electricity as the dry spell constricts the flow of water to the main reservoir, Lake Kariba. The agriculture sector is already grappling with shrinking growth, and the drought has compounded the challenging conditions under which the sector is operating in. Output losses in this key sector is indicative of dwindling incomes for associated businesses and households. The persistent contraction in agriculture output would not only cost these economies a substantial share of jobs, but also potentially translate into increased loan defaults and sluggish deposit growth on lenders' balance sheets.

Deficiencies in the supply of electricity would further weigh on output and push the cost of production higher as businesses have to 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.

Climate change has also ravaged other parts of the region in terms of flash floods in Mauritius, which has had a devasting impact on tourism, fishing and general economic output. The drought is therefore indirectly posing a risk to 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 would face higher default risk should borrowers struggle to service their loan repayments. Financial institutions lacking capital buffers to absorb potential losses would experience solvency deficiencies.

CHAPTER 3

COMESA REGION BANKING SECTOR ANALYSIS

1. Financial Soundness Indicators for the Banking Sector [16]

Financial Soundness Indicators (FSIs) for banks are aggregate measures of the financial health and soundness of the banking sector in a country and of their corporate and household counterparties. FSIs play a prominent role in macroprudential analysis as they fill the gap between macroeconomic statistics and micro-prudential data and are early warning signals of risks and resilience of the banking sector. More importantly, FSIs support the surveillance and assessment of the strengths and vulnerabilities of financial systems and enable prudential authorities to take timely and appropriate action by providing insight into when to trigger macro prudential tools and when to tighten or relax these tools once deployed.

1.1 Capital Adequacy Indicators

The capital adequacy is a measure of financial strength and stability of banks in terms of their ability to meet financial obligations and absorb potential losses. During the period under review, banks in COMESA region generally remained adequately capitalized with sufficient buffers above the Basel regulatory requirements.[17] The average capital adequacy ratio (CAR) in the region marginally improved to 20.5 percent in 2023 from 20.4 percent in 2022, compared to the Basel requirement of 10.5 percent. Banks in region continued to hold high capital during the period under review. The average Tier CAR deemed as high-quality capital for the region stood at 16.3 percent as at end 2023 against 8.5 percent minimum Basel requirement. At country level, all countries had capital adequacy indicators above the Basel requirements except Sudan as shown in Figure 27. The capital adequacy ratios for Sudan indicated that the banking sector is significantly under-capitalized with total CAR and Tier CAR standing at 2.1 percent and 0.1 percent, respectively. This is due to macro-financial challenges that the country is going through since the outbreak of the civil war.

The adequate capital buffers in the COMESA banking sector over and above the Basel minimum regulatory requirements is mainly as a result of capital injections, retained earnings and the moderation in the growth of risk weighted assets. The sufficient capital buffer enable the banking sector to absorb shocks and sustain lending without breaching regulatory minimum requirements. These capital buffers also reduce the likelihood of banks being in distress and requiring capital injection.

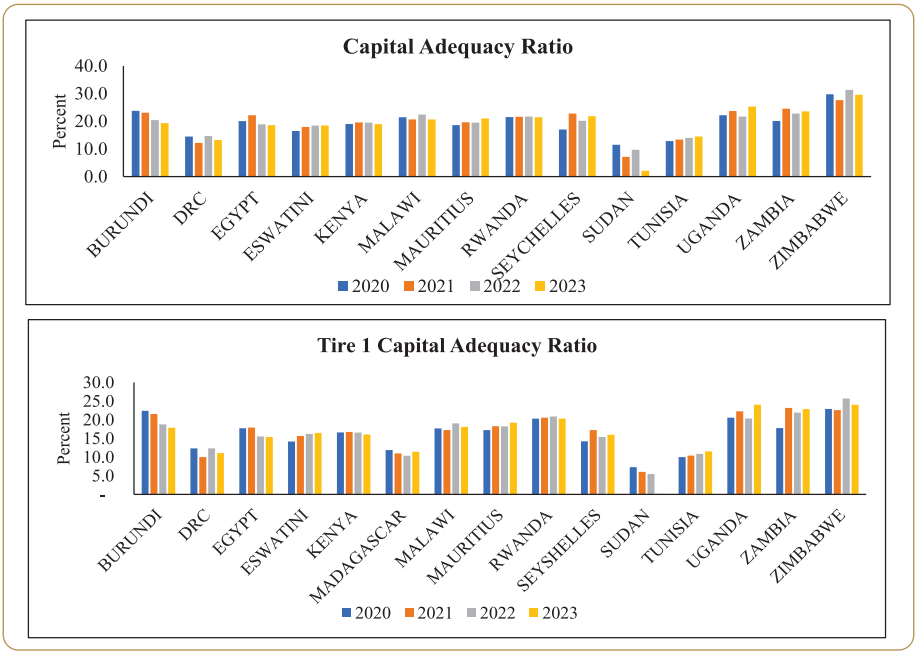
[16] The number of countries included in the analysis of the Financial Soundness Indicators differs as per data availability.

[17] The minimum capital requirements include a conservation buffer of 2.5 percent.

Furthermore, risks that could arise from excessive leverage remain minimal. The leverage ratio is a regulatory indicator for capital sufficiency that is independent of risk-weighted assets. It compliments minimum capital adequacy requirements and imposes limits on banks from taking excessive balance sheet leverage. Despite having capital adequacy ratios above the regulatory requirements, banks can accumulate excess on and off-balance sheet leverage that increase vulnerabilities to market risk and amplify the transmission of risks from the financial sector to the real economy. To mitigate this risk, banks are required to maintain the minimum leverage of 3 percent in their operations. On average the banks did not appear to be highly leveraged. During the year to end December 2023, the average leverage ratio for the region improved to 11.1 percent in 2023 from 10.4 percent in 2020, higher than 3 percent minimum Basel requirement.

The COMESA region banking sector is expected to remain adequately capitalized. This is due to the improvements in profitability of banks along with capital conservation strategies being maintained by most banks. The increase in capital buffers will further reinforce the capacity of banks to support intermediation and absorb unexpected losses. Furthermore, inflationary pressures started to ease towards the end of 2023 in most countries. Strong economic growth will increase profitability and capital, which will enable banks to increase capital buffer and intermediate funds to improve productivity and thus limit the probability of default and lower expected credit losses. The main risk to the capitalization of banks is the potential market risks associated with volatility in global commodity markets and depreciation of local currencies. Nevertheless, the depreciation is anticipated to have a moderate impact on capital adequacy of banks according to stress tests findings consistent with bank's limited exposure to currency risk.

Figure 27: Capital Adequacy Ratios in Selected COMESA Member Countries

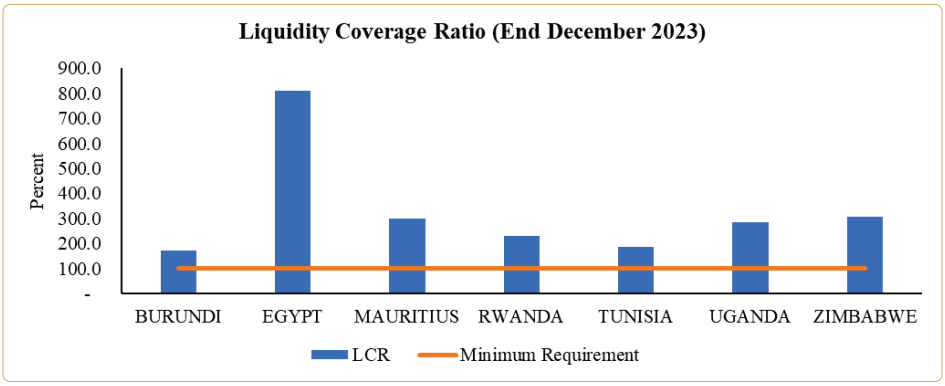


Source: COMESA Member Countries Central Banks

1.2 Liquidity Indicators

The banking sector's liquidity buffers remained strong, indicating its resilience to liquidity risk. Effective liquidity risk management is important to ensure that banks have the capacity to fulfil their cash flow obligations at all times, as any shortage of liquidity could lead to system-wide implications. Financial intermediation is one of the core roles played by banks in the financial systems. Their asses tend to have longer maturities compared to their liabilities. Therefore, banks are required to keep adequate liquid assets to mitigate liquidity risk. Banks are required to always hold a sufficient stock of liquid assets to be able to meet customers' funding needs during a period of stress. The banks' Liquidity Coverage Ratio (LCR) – which measures holding of liquid assets relative to the potential outflows that could occur in a short-lived but severe stress scenario – have remained above regulatory requirements. [18] In December 2023, the average LCR for the region stood at 327.1 percent, well above the minimum requirement of 100 percent (Figure 28). This is an indication that banks hold sufficient High-Quality Liquid Assets (HQLA) to meet their short-term (30-day) liquidity obligation.

Figure 28: Liquidity Coverage Ratio in Selected COMESA Countries



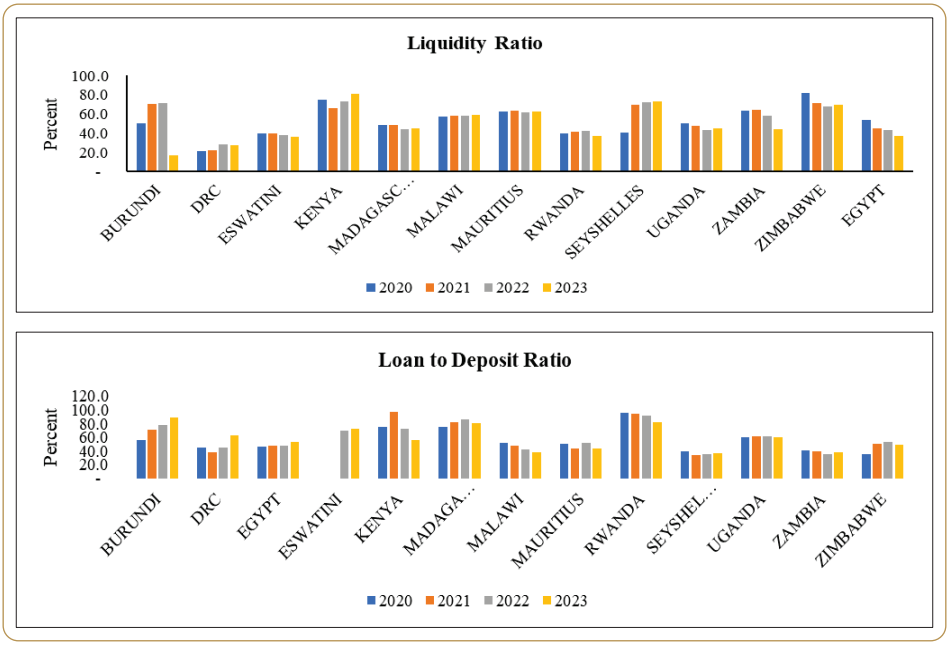
Source: COMESA Member Countries Central Banks.

Similarly, the long-term liquidity buffers of banks in the region also remained strong. Unlike the LCR that promotes short term liquidity resilience, the Net Stable Funding Ratio (NSFR) aims at preventing banks from excessively financing long-term assets with short-term liabilities and thus seeks to mitigate the against the potential for future funding stress. Banks are inherently vulnerable to liquidity risk arising from the maturity transformation role they play, that is, the use of short-term liabilities/inflows such as customer deposits to fund longer term assets such as loans. To mitigate these risks, banks are required to maintain a stable funding structure by complying with NSFR requirements. The NSFR is complementary to the LCR in that it ensures funding resilience over a longer time horizon, requiring banks to fund long-term assets with long-term liabilities and thus limit the degree of maturity mismatch. During the review period, only three countries in region (Egypt, Rwanda and Mauritius) have implemented this measure. In Mauritius, the NSFR was implemented since June 2024 and data will be reported in future FSRs.

[18] The LCR reported is for countries that have already implemented Basel III standards. These include Burundi, Egypt, Mauritius, Rwanda, Tunisia, Uganda and Zimbabwe.

The other indicators used to gauge liquidity conditions in the banking system also remained strong during the period under review. For example, the liquidity ratio measured by the stock of liquid assets to customers' deposits remained strong standing around 48.8 percent in December 2023 (Figure 29). In addition, the loan-to-deposit ratio which is used to assess bank's liquidity by comparing a bank's total loans to its total deposits for the same period dropped to 58.7 percent in 2023 against 59.4 percent in 2022. It ranged between 36.9 percent and 88.4 percent and most countries had a ratio above 50 percent. There were few countries with a ratio below 50 percent and this is largely explained by the moderation of credit demand and banks' perception of credit risk that induced them to increase their investment in government securities at the expense of increasing loan portfolio. Generally, banks have enough liquidity to meet customers' demands and the high liquidity level in the region mainly reflects increasing investment in government securities, the growth of deposits consistent with the rebound of economic activities and expansionary fiscal policy measures.

Figure 29: Liquidity Ratio and Loan to Deposit Ratio in Selected COMESA Countries



Source: COMESA Member Countries Central Banks

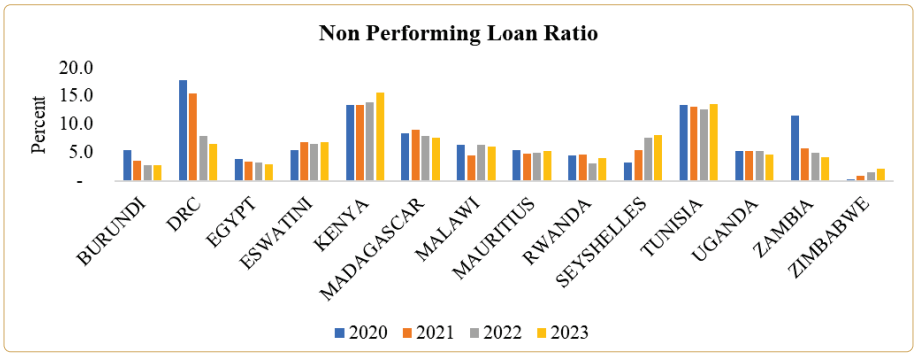
1.3 Assets Quality Indicators

Credit risk continued to be the main risk facing the COMESA banking sector. On average, the quality of loans measured by Non-Performing Loans to gross loans (NPL ratio) in COMESA region remained relatively stable but, however, significant disparities were observed across countries. The average NPL ratio for the region stood at 6.5 percent in 2023 against 6.4 percent recorded in 2022. At the country level, the NPL ratio ranged between 2.1 percent and 15.6 percent (Figure 30). NPL ratio increased in Kenya (at 15.6 percent in 2023 from 13.9 in 2022) and Tunisia (at 13.6 percent in 2023 up from 12.6

percent in 2022). In Kenya the deterioration of assets quality largely mirrors the global supply chain challenges that negatively affected the earnings of borrowers, inflation and exchange rate pressures as well as pending government bills. In Tunisia, the deterioration of assets quality is linked with sluggish economic performance due to low demand, high inflation, rising unemployment and unfavorable weather conditions. Other countries where the NPL increased include Seychelles, NPL ratio increased to 8.1 percent from 7.6 percent while in Rwanda and Zimbabwe, NPL ratio increased to 4.1 percent from 3.1 percent and to 2.1 percent from 1.6 percent, respectively. In Burundi and Eswatini, NPL ratio remained relatively stable at 2.8 percent in Burundi and 6.8 percent in Eswatini.

Elsewhere NPL ratio declined as follows: DRC (to 6.6 percent from 8.0 percent), Egypt (to 2.9 percent from 3.3 percent), Madagascar (to 7.6 percent from 8.0 percent), Malawi (to 6.1 percent from 6.3 percent), Uganda (to 4.6 percent from 5.3 percent) and Zambia (to 4.2 percent from 5.0). In contrast, NPL ratio slightly increased in Zimbabwe, Seychelles and Rwanda. Generally, the dynamics in quality of loans across countries reflected the growth of outstanding loans, write offs and improved loans performance consistent with post COVID-19 recovery. In general, provisions for bad loans are considered adequate in the COMESA Member States. The provisions coverage ratio averaged 67.7 percent in 2023.

Figure 30: Non-Performing Loan Ratio in the COMESA Region.



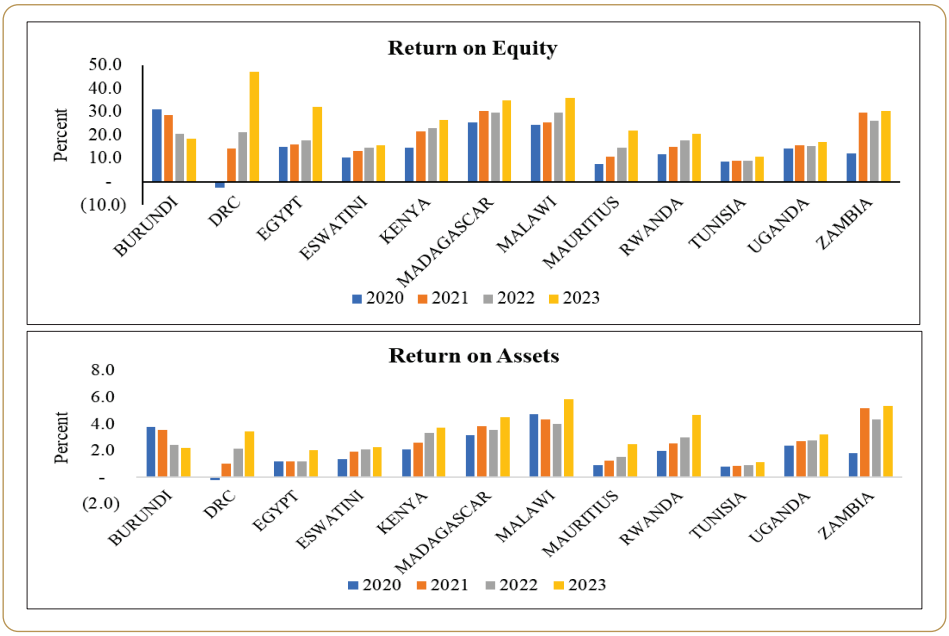
Source: COMESA Member Countries Central Banks

1.4 Indicators of Earnings and Profitability

With regards to profitability, banks in the COMESA region remained profitable amidst the global economic uncertainties (Figure 31). The profitability of banks as measured by the Return on Assets (ROA) and the Return on Equity (ROE) improved in line with increased investment in earning assets (mainly loans and government securities) and the yields. On average the aggregate ROA for the region increased to 4.4 percent in 2023 from 3.6 percent in 2022. During the same period, the consolidated ROE increased to 29.7 percent from 23.6 percent. It is important to note that the Profitability of banks was also supported by improved operational efficiency across the region. During the period under review, the cost to income ratio that compares the operating costs of a bank to its operating income declined to 64.5 percent in 2023 from 67.8 percent in 2022. A lower ratio implies higher operational efficiency, which is an ideal scenario for banks. During

the same period, the overhead cost to income ratio of banks in COMESA declined to 52.5 percent in 2023 from 57.1 percent in 2022. Looking ahead, the profitability of banks is expected to remain stable owing to an increase of earning assets and the economic resilience of member states that will continue to be key in maintaining the quality of assets. However, risks to the profitability of banking sector could emerge from further escalation of the geopolitical tensions and accompanying global market and trade disruptions, cyber and climate change risks.

Figure 31: Profitability Ratios in Selected COMESA Countries.



Source: COMESA Member Countries Central Banks

To conclude, the banking system in COMESA region remains stable. In the face of global economic uncertainties, banks in the region continued to cope relatively well with the challenges posed by the effects of the geopolitical conflicts on the economies and economic agents. Overall, the banks in region remain adequately capitalized, liquid and profitable. The capital and liquidity buffers held by banks indicate their resilience and capacity to withstand shocks and they are well placed to continue supporting intermediation activities without any disruptions.

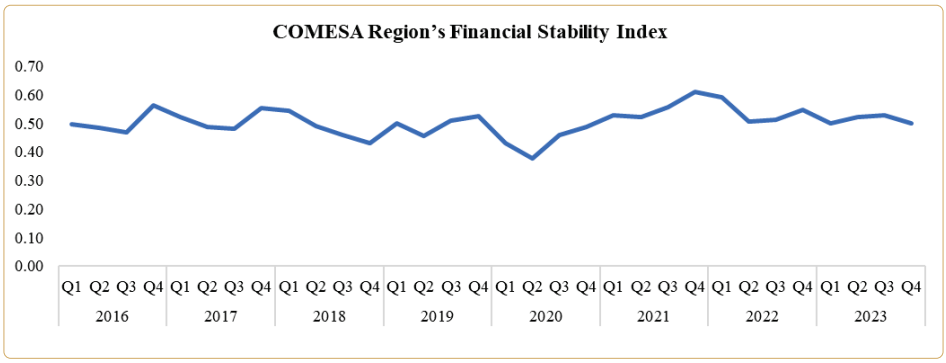
2. Financial stability index

The financial stability index (FSI) for the COMESA region demonstrates a satisfactory performance throughout the analysis period from 2016 to 2023, averaging 0.51, which indicates a moderate level of financial stability **(Figure 32)**. [19] Furthermore, the aggregate index for the COMESA region experienced a slight decline in 2023 compared to the

[19] The sample of countries included in the index are Egypt, Eswatini, Mauritius, Uganda, and Zambia as per data submitted by each member country, which differs from the sample of countries included in the analysis of the financial soundness indicators.

previous year, achieving an average of 0.52, which remains above its historical average. The performance of the index in 2023 exhibited significant variation among member countries, with notable enhancements observed in Eswatini, Mauritius, and Uganda.

Figure 32: COMESA Region's Financial Stability Index



COMESA REGION'S FINANCIAL STABILITY INDEX

The COMESA Region's FSI aims to assess the level of financial stability in the region. A stable and resilient financial system is able to with stand shocks and sustain lending and hence support economic growth and development.

The index comprises of 14 variables in four sub-indices that define the four main aspects of financial stability in the region and that help assess the soundness of the financial system and the developments in the global and domestic macroeconomic environment in which the system operates. The four sub-indices are (i) the banking sector performance, (ii) macroeconomic conditions, (iii) financial market developments, and (iv) world economic climate **(Figure 33 and 34).**[20],[21]

The period of analysis includes a total of 32 quarters, which is between the first quarter of 2016 and the fourth quarter of 2023. After implementing empirical normalization, the constituent sub-indices are calculated as a simple average of the variables. Through empirical normalization, each indicator is compared to its limit values (minimum and maximum) in the analyzed period, and its normalized value represents the deviation from these limits. The FSI is the components' average scaled in the [0,1] interval. A higher level of the index represents higher financial stability.

[20] The banking sector performance sub-index includes Capital Base to Risk weighted assets ratio (CAR), Nonperforming Loans to Total Loans ratio, Loan Provisions to Nonperforming Loans ratio (Coverage Ratio), Return on Average Equity (ROE), Non-interest Expenses to Gross Income ratio, Liquidity in Local Currency. The macroeconomic conditions sub-index includes GDP Growth Rate, Headline CPI (average period), Balance of Current Account to GDP, Overall Fiscal Balance to GDP and Private Credit to GDP ratios. The financial market developments sub-index includes only the ratio of Market Capitalization to GDP and may be enhanced later depending on the data submitted by the member countries. The world economic climate sub-index includes world's GDP and Inflation rates (average consumer prices).

[21] The world economic climate sub-index should include a country's major trading partners GDP and inflation rates weighted by volume of trade with each partner. However, due to data unavailability, world's annual GDP and inflation rates were used instead in this analysis.

The decline in the overall FSI in 2023 is mainly attributed to the decrease in both the banking sector's performance and the financial markets development sub-indices. The decline in the banking sector performance sub-index was mainly due to a decline in loan coverage and liquidity ratios which counterbalanced the notable increase in the return on equity ratio and a decrease in non-interest expenses relative to gross income. A marked improvement was however recorded in the banking sector performance index for Uganda and Mauritius. Furthermore, the decrease in the financial markets development sub-index can be attributed to global uncertainty and heightened investor risk aversion during the year exacerbated by geopolitical tensions facing all countries.

On the other hand, the domestic macroeconomy sub-index witnessed relative stability during 2023, with a modest decline, primarily due to rising inflation across member countries, accompanied by a slight reduction in the ratio of private credit to GDP. These effects were offset by an improvement in the ratios of current account and fiscal balances to GDP. On the individual level, Zambia and Eswatini witnessed a significant increase in domestic macroeconomy sub-index mainly attributed to GDP growth. Furthermore, the global economic climate sub-index shows an improvement, driven by a decline in global inflation.

Figure 33: Financial Stability Sub-Indices of the COMESA Region

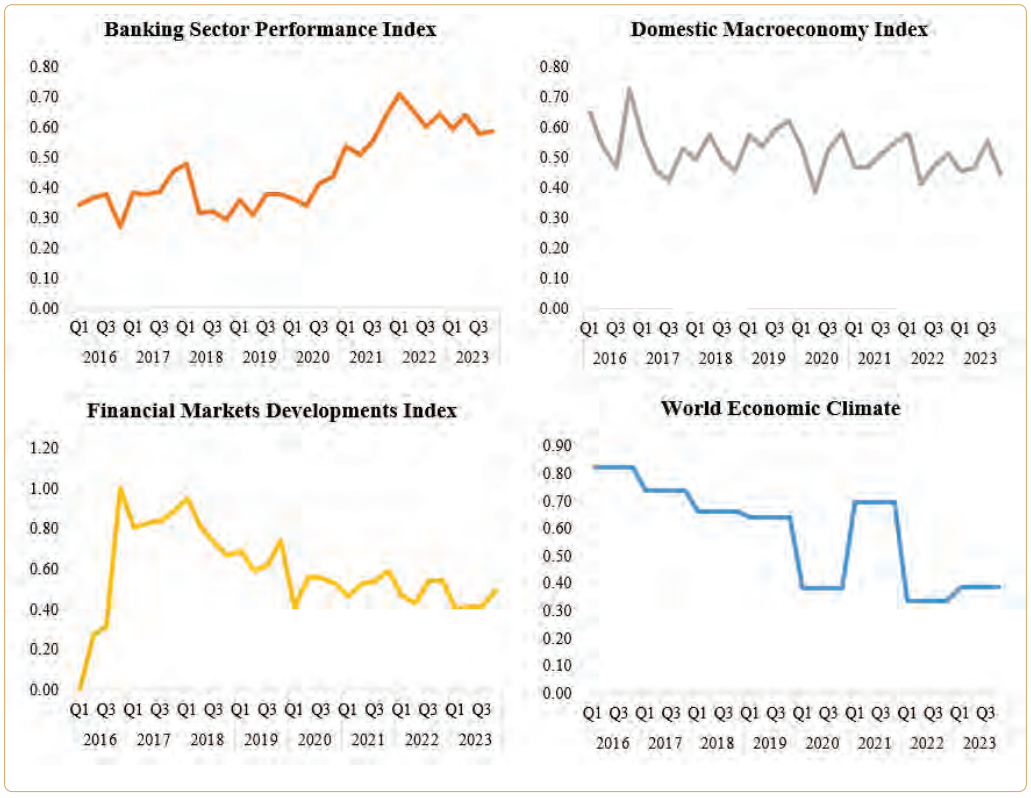
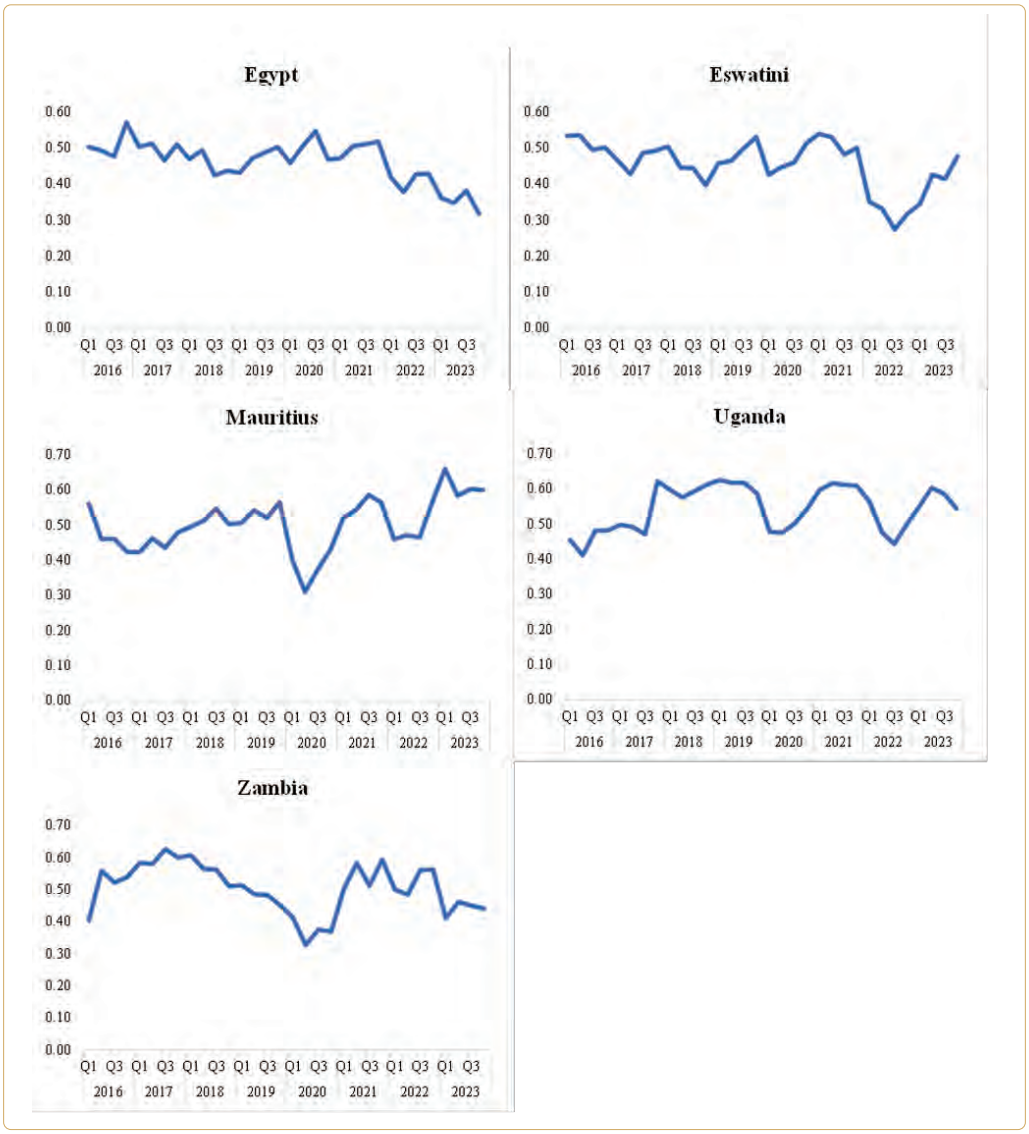


Figure 34: Financial Stability Index of Selected COMESA Member Countries



3. Credit-to-GDP Gap

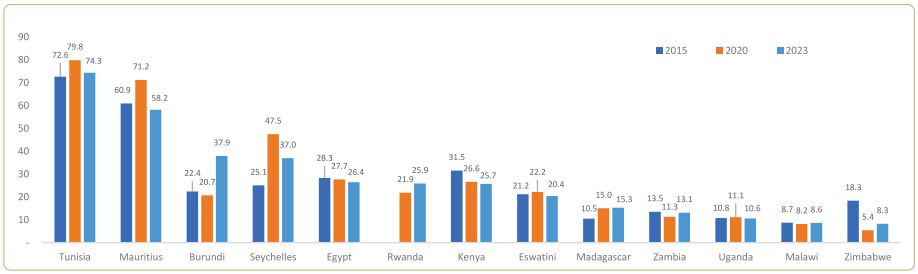
Excessive credit growth was a major systemic risk that played a critical role in the global financial crisis of 2008, prompting the deployment of the Countercyclical Capital Buffer (CCyB) as part of the macroprudential policy framework proposed by the Basel Committee for bank supervision to strengthen the regulatory framework and prevent future financial crises. The Basel Committee for bank supervision advised utilizing the ratio of private credit to nominal GDP as a primary indicator to track excessive credit growth, as one of the most reliable early warning indicators for banking crises. Additionally, it is recommended that individual regulatory bodies observe a further set of qualitative and quantitative indicators that should be tailored to domestic conditions. This

section explores the trends in the private credit to GDP ratio for COMESA countries, the factors influencing this ratio, and whether private credit growth was excessive in 2023.

3.1 Credit-to-GDP Ratio Analysis

The ratio of private credit to GDP was notably varied in 2023 among a group of 13countries in COMESA as indicated in Figure 35. [22] Tunisia achieved the highest ratio at 74%, with Mauritius coming next at 58% while Burundi and Seychelles reported ratios close to 37%. [23] Egypt, Rwanda, and Kenya each had a ratio of 26%, while Eswatini recorded a ratio of 20%. Finally, the ratios of Madagascar, Zambia, Uganda, Malawi, and Zimbabwe ranged between 15% and 8%. While Tunisia and Mauritius surpassed the average private credit to GDP ratio for emerging market economies, which stands at 58%, the other COMESA countries included in the sample remained below the averages for frontier markets at 49% and for least developed countries at 34% during the 2010-2020 period. [24]

Figure 35: Private Sector Credit to GDP Ratio of Selected COMESA Countries



As for the trend of financial deepening in COMESA post the pandemic, many countries experienced a decline in financial depth with decreasing private credit to GDP ratio between 2020 to 2023, after an increase from 2015 to 2020. The downward trend was significant for Tunisia, Mauritius and Seychelles, and marginal for Egypt, Kenya, Eswatini and Uganda. The decrease in the ratio since the pandemic was mainly due to higher rates of inflation during the period 2021-2023 compared to the period 2016-2020, which was accompanied by monetary policy tightening, leading to a decrease in private credit growth – with Seychelles being an exception since it experienced a significant decrease in private credit growth despite loose monetary conditions (Figure 36) [25] .

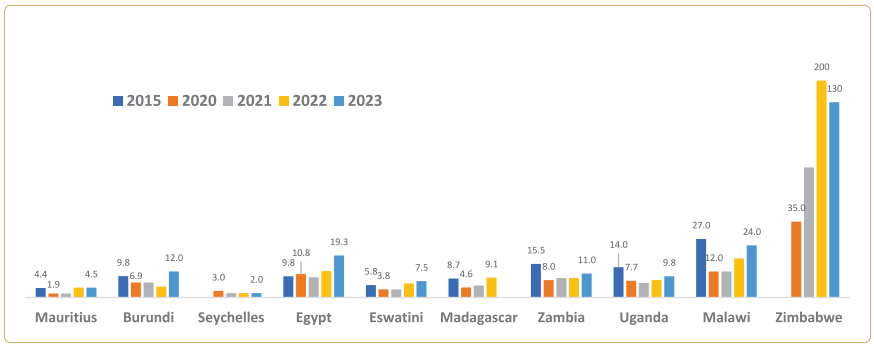
[22] Private credit includes credit provided to the business (private and public) and household sectors. The countries with a public business sector include Egypt, Eswatini, Madagascar, Malawi, and Tunisia. In previous years, Seychelles provided data for the household sector only in addition to the total private credit, so the credit to the business sector was implied as a residual. This year, Seychelles reported data for credit provided to the public and private business sectors as separate elements within total private credit in year 2023. However, we still classify Seychelles among the countries that have a private business sector to maintain consistency.

[23] The group of countries include Tunisia, Mauritius, Burundi, Seychelles, Egypt, Rwanda, Kenya, Eswatini, Madagascar, Zambia, Uganda, Malawi and Zimbabwe. The group was chosen based on data received in the COMESA FSR questionnaire. The group varies in some parts of the analysis depending on variations in the countries' datasets.

[24] Groups' averages were calculated according to commonly used classifications of countries.

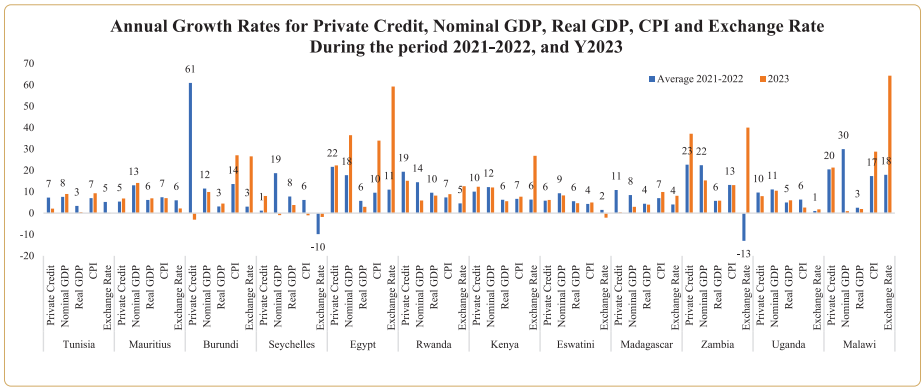
[25] The tourism sector comprises a large share of Seychelles' economy, so unlike other COMESA economies,

Figure 36: Evolution in Policy Interest Rates for Selected COMESA Countries



On the contrary, in Burundi, financial deepening accelerated with the private credit to GDP ratio increasing to 38% in 2023 from 21% in 2020. This was driven by a significant increase in private credit growth during the period 2021-2022, with an average growth rate of 61%, far exceeding the nominal GDP growth, while the real GDP growth rate was around 3%. Rwanda, Zambia, Malawi and Zimbabwe also experienced an increase in the private sector credit to GDP ratios from 2020 to 2023, coupled with economic recovery for Rwanda, while associated with inflationary pressures and weak economic growth in Zambia, Malawi and Zimbabwe.

Figure 37: Evolution of Key Macroeconomic Variables in Selected COMESA Countries



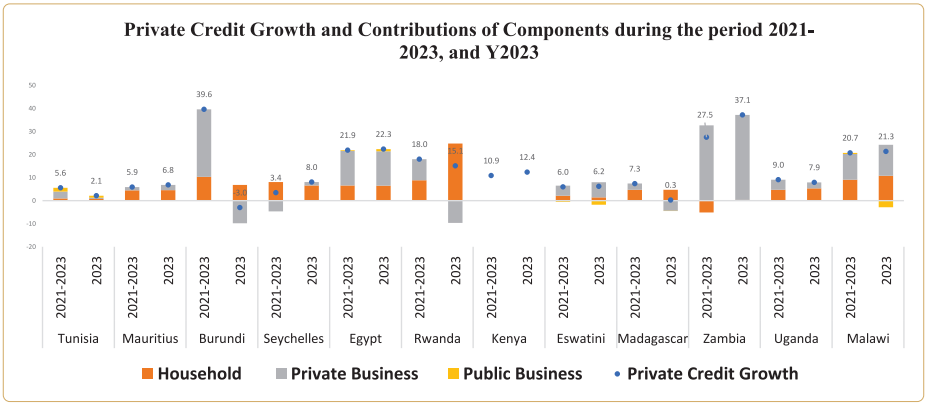
In 2023, however, some countries experienced a variation in their private credit growth, compared to the period 2021-2022. Burundi witnessed negative growth in 2023 - after two years of high growth rate - The decline in growth for Burundi in 2023 was mainly driven by a sharp reduction in private business credit, as a result of a hike in the monetary policy rate by 700 basis points, following a depreciation in the exchange rate by 27%, and a rise in consumer prices (Figure 36 and Figure 37). Similarly, Tunisia, Rwanda and Madagascar witnessed a decline in private credit growth in 2023, driven mainly by a

its real GDP growth was multiplied four times during the period 2021-2023 compared to the period 2016-2020, benefiting from the global recovery in tourism flows after the pandemic. Therefore, during the period 2021-2023, the exchange rate appreciated, inflation pressures were subdued, the monetary policy was expansionary unlike the rest of the countries, and the monetary policy rate was the lowest among selected COMESA countries, at 2% in 2023. In return, the private credit growth decreased from 16% in the period 2016-2020 to 3% in 2021-2023 (falling beyond the average real GDP growth rate), as the economy received tourism revenues that are 23% higher than the pre-pandemic period.

slowdown in lending to the private business sector, while lending to the household sector grew remarkably in Rwanda, partially offsetting the decline in private business credit (Figure 38).

On the other hand, Seychelles witnessed higher private credit growth in 2022 supported by a recovery in the lending to the private business sector in light of continued easy monetary conditions. Also, Zambia's private credit growth increased in 2022 and 2023, to record the highest growth rate among selected COMESA countries in year 2023, due to higher growth in credit to the private business sector, despite negative household credit growth. Also, the monetary policy rate was raised by 200 basis points in 2023, when the exchange rate was depreciated by 40% and consumer prices increased by 13%.

Figure 38: Contributions of Components of Private Sector Credit in Selected COMESA Countries



3.2 Credit-to-GDP Gaps

In this section, highlights of developments of estimated private credit to GDP gap as an indicator of potential systemic risk related to excessive credit growth for four countries is reported.[26] Private credit growth has either remained steady or declined in 2023 for the four economies under study and the fluctuations in the credit cycle have primarily been influenced by changes in economic growth and inflation rates, rather than excessive credit growth. [27]

After increasing to its all-time peak of 74% in the first quarter 2021, Mauritius' private credit to GDP ratio decreased from the second quarter of 2021 reaching 58.2% in the fourth quarter of 2023. The downward trend continued through 2023 driven by persistently elevated inflation despite stabilizing GDP and private credit growth. Consequently, the

[26] The countries were selected based on data submitted from the countries. The sample range is 2006:4 – 2023:4 for Mauritius, 2002:4 -2023:4 for Egypt, 2010:4 -2023:4 for Zambia, and 2012:4-2023:4 for Uganda. The private credit to GDP gap is estimated as the difference between the private credit to GDP ratio and its statistical trend. To estimate the statistical trend, we follow Basel's committee recommendation of using a one-sided HP filter and a smoothing parameter (lambda) 400,000 for quarterly data

[27] Nevertheless, Zambia continues to experience high growth rates of private credit, despite disproportionate economic growth.

private credit gap continued to be negative widening to 6.8% in the fourth quarter of 2023, with the private business sector being the largest contributor.

For Uganda, the private credit to GDP gap turned negative from the fourth quarter of 2020, reaching a trough in the first quarter of 2022. After some fluctuations around zero, the ratio started to increase in the last two quarters of 2023, with declining real GDP growth and domestic inflation while private credit growth was stable. In the fourth quarter of 2023, the private credit gap was at 0.2%, with the private business sector showing a positive gap and the household sector showing a negative gap.

Egypt's private credit to GDP ratio took a downward trend starting from in the second quarter of 2022, after the pandemic-triggered upturn, reducing the gap from a peak of 10.5% in the first quarter of 2022 to 6% in the fourth quarter of 2023. This was primarily influenced by decelerating real GDP growth and rising inflation. In 2023, however, inflation rates were stable albeit at elevated levels, and private credit growth started to decrease. The main driver for the decrease in the positive private credit gap was the gradual decrease in the positive gap of the household sector, which could have been halted by the increase in borrowing costs beginning in the first quarter of 2022.

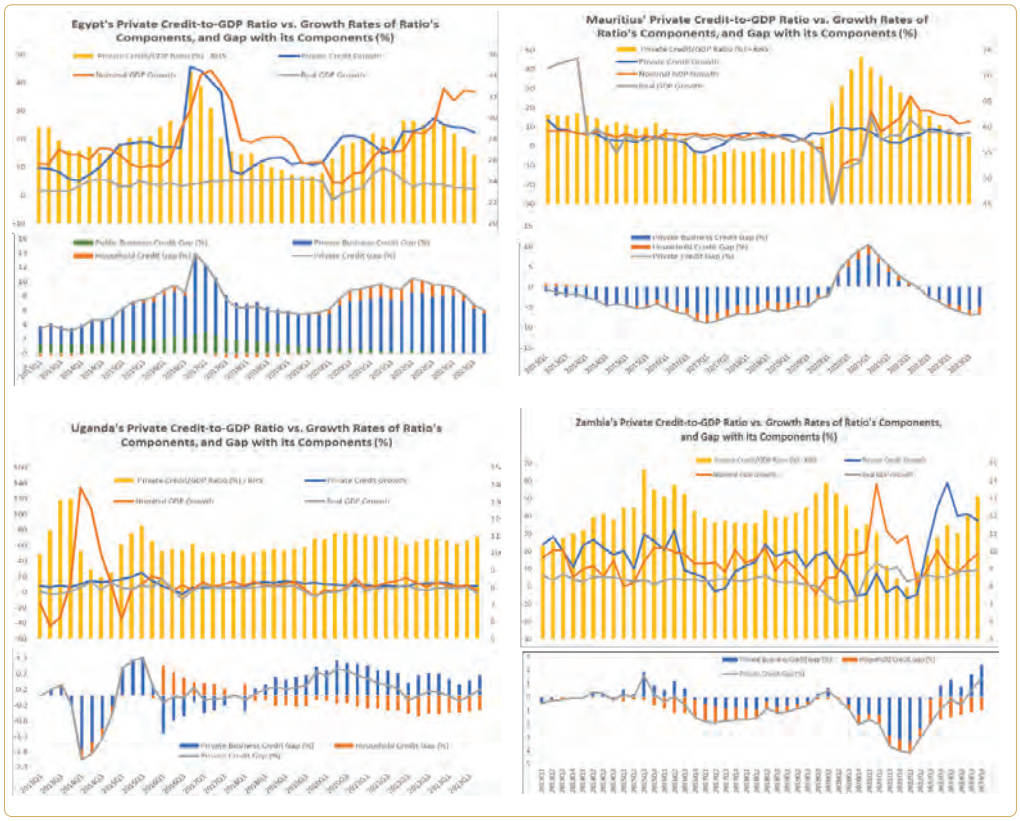
Contrary to Egypt, Zambia witnessed an upward trend in its ratio from the second quarter of 2022, following a downturn that began in the first quarter of 2020 due to the COVID-19 outbreak. The upward trend persisted throughout 2023, fueled by significant growth in private credit. By Q4 2023, there was a positive credit gap of 1.3%, primarily due to the private business sector.

In summary, both Mauritius and Egypt are currently in a downturn phase for their credit-to-GDP ratios. Uganda entered an upturn in the end of 2023, while Zambia has been in an upturn since the second quarter of 2022. Thus, from the analysis it can be concluded that there is no evidence for systemic risk buildup as a result of excessive credit growth for the four COMESA countries (Figure 39).

It is worth mentioning that the gaps of major advanced and emerging market economies were in the negative territory in 2023 due to tight monetary conditions, similar to Mauritius. Exceptions of emerging market economies, including Saudi Arabia and Argentina, recorded positive gaps in the last two quarters of 2023, similar to Uganda. Other countries, notably, Korea, Japan and Thailand were in positive territory, even before the pandemic began. [28] In conclusion, the credit-to-GDP gap serves – in conjunction with other variables – as a powerful indicator for credit conditions globally and domestically, the extent of monetary policy transmission, and potential overheating in credit provision.

[28] The comparison was done with credit-to-GDP gaps computed by the BIS, which covers a sample of 43 countries including advanced and emerging market economies. The BIS describes its credit-to-GDP ratio as capturing total borrowing from all domestic and foreign sources by the private non-financial sector.

Figure 39: Private Sector Credit as a Ratio of GDP



CHAPTER 4

NON-BANK FINANCIAL INSTITUTIONS (NBFIs) AND FINANCIAL MARKETS ANALYSIS AND RISKS

1. Non-Bank Financial Institutions (NBFIs)

Non-Bank Financial Institutions (NBFIs) provide financial services that are similar to those provided by banks but unlike banks, NBFIs except microfinance banks do not accept deposits from the public. NBFIs facilitate alternative financial services, such as investment (both collective and individual), risk pooling, financial consulting, brokering, and check cashing. NBFIs are a source of consumer credit (along with licensed banks). Examples of nonbank financial institutions include insurance firms, venture capitalists, currency exchanges, some microloan organizations, and pawn shops. These non-bank financial institutions provide services that are not necessarily suited to banks, serve as competition to banks, and specialize in sectors or groups.[29]

In COMESA member countries, NBFIs are growing, allowing segments of the population that are financially excluded due to lack of access to the traditional banking services to access credit through microfinance; retirement financial planning and investment and large financing through mortgage and financial leasing. The NBFIs are also facilitating amelioration of liquidity mismatch through factoring and securitization as well as access to financial instruments market intermediation through brokerage as well as enabling money exchange activities.

The growth of NBFIs also elevate risks and vulnerabilities that may arise from the banking sector activities or from other sectors of the economy. In order to address this, the region has developed frameworks which may lead to a comprehensive regulation and risk assessment of the NBFIs. This entails establishing the multidisciplinary committee of financial stability that may allow every member country to monitor the NBFIs activities and address the potential risks and vulnerabilities emanating from their activities or resulting from interconnectedness between NBFIs, banks and non-financial firms. In addition, the Committee will also set a policy tool kit in order to address potential risks identified. In this report, out of 21 COMESA member states, 12 countries provided data on NBFIs.

This report analysed the following NBFIs in the COMESA region: post, insurance (life and non-life) companies, private pension funds, government pension fund, mutual funds, brokerage companies, mortgage companies, microfinance entities financial leasing companies and exchange companies.[30]

[29] Global financial development report 2019/2020, world bank.

[30] In this category, deposits are collected.

1.1 Postal and Microfinance Industry

The postal industry performs both roles of parcel delivery and financial services across the world. In COMESA member countries, this activity has been reported by two countries (Burundi and Egypt). Egypt had 4,414 post offices in 2023 compared to 4,284 post offices in 2022. However, the penetration rate declined from 4.2% in 2022 to 3.2% in 2023. In Burundi, the number of post offices remained unchanged at 146 in 2022 and 2023.

The microfinance industry is growing and complementing traditional banking by providing affordable banking services (deposit collection, loans, and money transfers) at affordable prices to people with low incomes and without valuable fixed assets. The contribution of microfinance industry to GDP for Rwanda, Burundi, Egypt, Madagascar, Tunisia and Uganda is diverse, depending on the level of penetration. Microfinance penetration in Burundi is the highest at 12.5 % and the lowest in Uganda at 0.3% in 2023 (Figure 40).

On the assets side, microfinance loans increased in Egypt (41.7%), Tunisia (8.1%) and Zambia (35.1%) but slowed down in Burundi (-6.2%). Specifically, Egypt reported that the total credit (1 847.9 Million USD) was distributed in 4 main activities namely commercial (59.8%), production (6.6%), services (14.2%) and agriculture (19.3%). Burundi reported that the total credit (293.9 Million USD) was distributed in 5 main activities namely housing (38.3%), trade (16.7%), agriculture (10.4%), social (9.2%), crafting (0.3%) and non-classified activities at 25% of the total loans. These loans were given to both male (57.3%) and female (42.7%) in Egypt **(Figure 41)**.

Figure 40: Microfinance Penetration Rate in Selected COMESA Countries

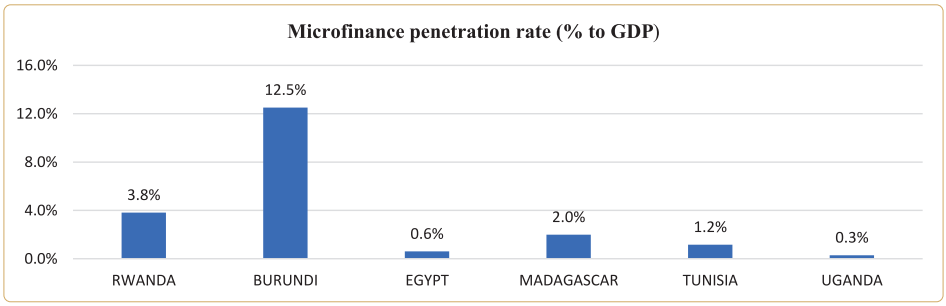
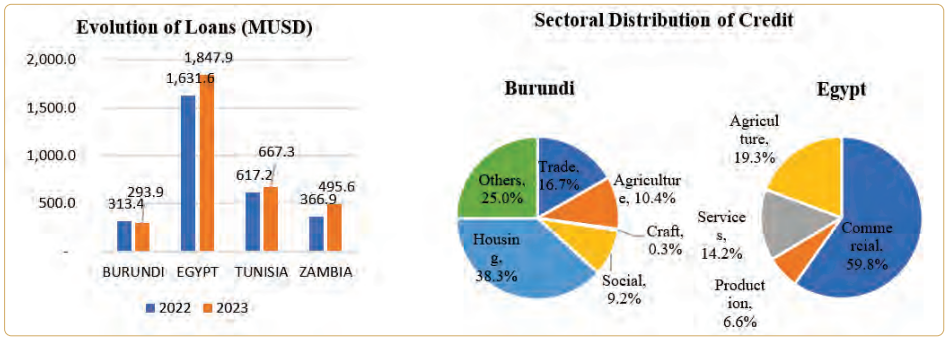
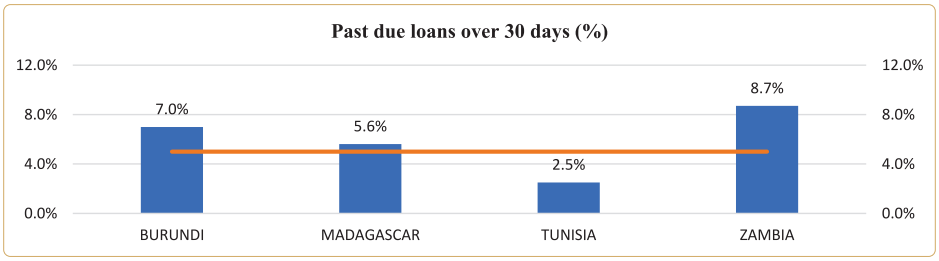


Figure 41: Evolution of Loans in Microfinance Institutions in Selected COMESA Countries



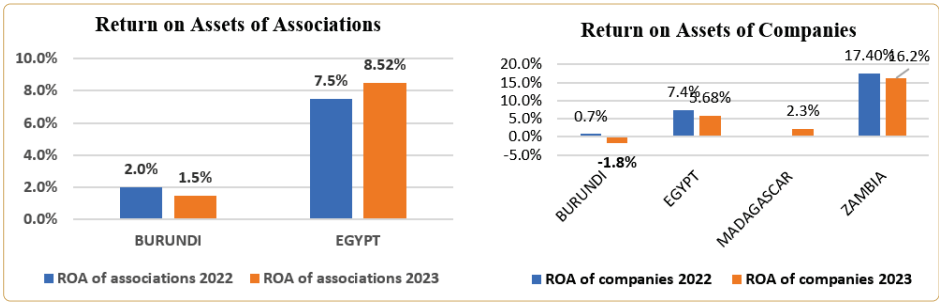
The assets quality in microfinance activity is measured by the ratio of loans due but not paid for over 30 days to total loans. A threshold for overdue loans to total loans for microfinance industry is set at 5%, as internationally accepted good practice. Tunisia is the only country compliant with this criterion **(Figure 42)**.

Figure 42: Asset Quality of Microfinance Institutions in Selected COMESA Countries



The microfinance activity is also profitable in Egypt and Burundi as associations are more profitable than companies. In Zambia and Madagascar, only companies are operating in microfinance area with a Return on assets of 16,2% and 2,3%, respectively ***(Figure 43)***.

Figure 43: Profitability of Microfinance Institutions in Selected COMESA Countries

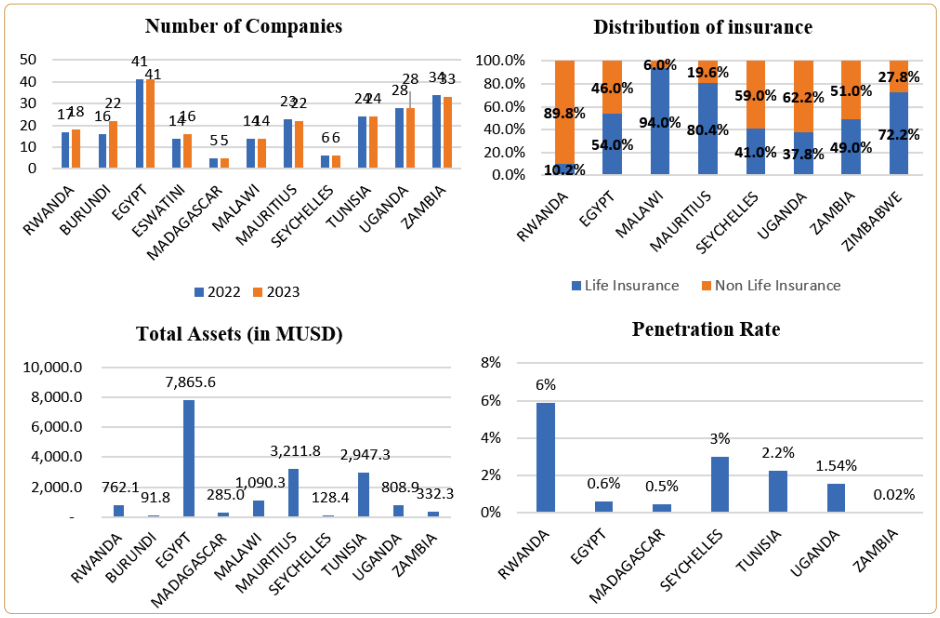


1.2 Insurance Industry [31]

The insurance industry comprises of 229 institutions in the region with assets valued at Million USD 17,523.5 for life and non-life activities. In Burundi, Seychelles and Zambia, the "non-life" activity is the largest whereas in Egypt, Malawi, Mauritius and Zimbabwe, the "life" activity is highest. Rwanda has the highest penetration rate of insurance at 6% of GDP (Figure 44).

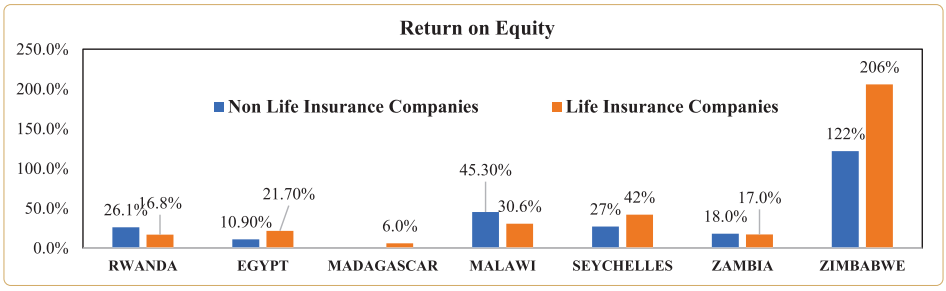
[31] In insurances area, 11 countries have reported namely Rwanda, Burundi, Egypt, Eswatini, Madagascar, Malawi, Mauritius, Seychelles, Tunisia, Uganda and Zambia.

Figure 44: Key Indicators on Coverage and Scope of the Insurance Industry in COMESA Countries



The capital adequacy ratio shows the extent to which the equity can absorb liabilities, especially insurance claims (solvency). In COMESA member countries, the insurance sector is well capitalized with a high level of capital to insurance claims. However, the level of solvency is not evenly distributed among COMESA member countries. In life insurance, for Rwanda, Egypt and Seychelles, the solvency is 296.1%; 10.2% and 11.9%, respectively while in Uganda the solvency is 210%, which implies a higher equity than the need expressed by claims. The profitability is also positive for both life and non-life insurance companies with non-life being more profitable in many countries ***(Figure 45)***.

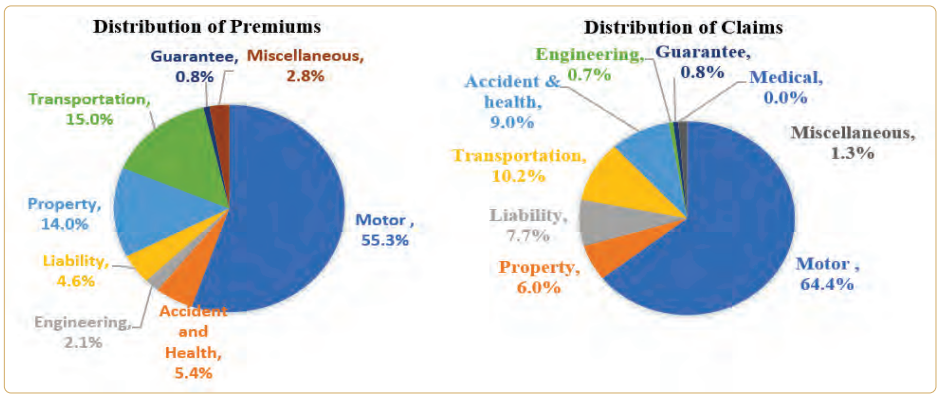
Figure 45: Profitability of the Insurance Industry in Selected COMESA Countries



The premiums collected are distributed in 8 main areas, namely Motor, Accident and Health, Engineering, Liability, Property, Transportation, Guarantee, and Miscellaneous with the highest amount collected from the motor sector. The claims paid are distributed

in 9 main sectors namely Motor, Accident and Health, Engineering, Liability, Property, Transportation, Guarantee, medical and Miscellaneous ***(Figure 46)***.

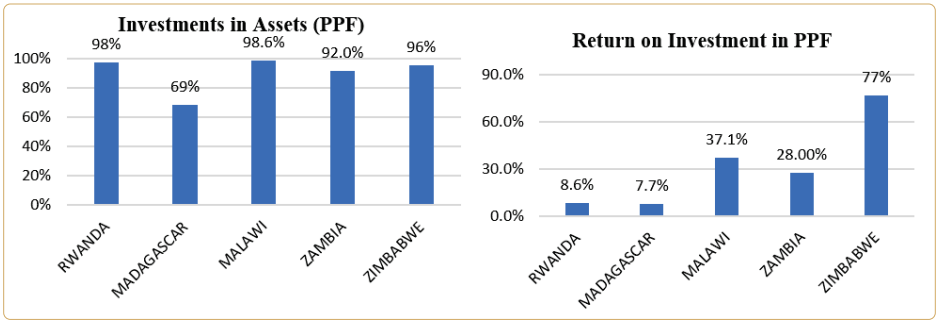
Figure 46: Distribution of Premiums and Claims in the Insurance Sector



1.3 Pension and Mutual Funds Industry

The retirement activities in the COMESA member countries cover private pension funds (1,255), government pension funds (15) and mutual funds (288). In private pension funds (PPF), Zimbabwe is the leading country with 965 institutions while Egypt leads in government pension funds and mutual fund with respectively, 6 and 147 institutions. The private pensions funds sector is well managed in terms of investing the subscriber's funds in most of the countries and most profitable in Zimbabwe (Figure 47).

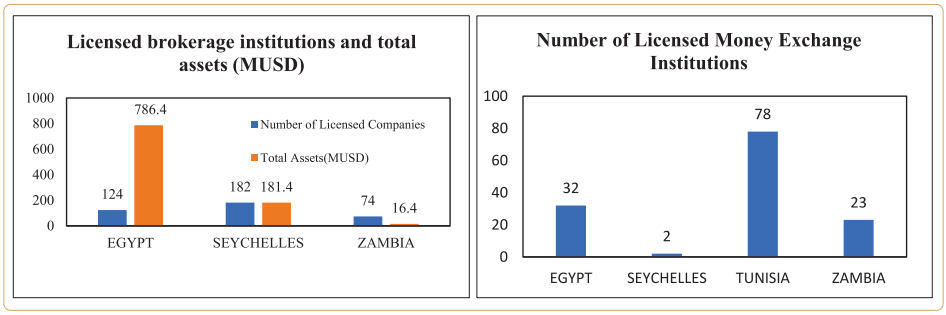
Figure 47: Assets and Return on Investments in the Pension Sector



1.4 Brokerage and Money Exchange Industry

In the brokerage industry, 380 licensed companies were registered in 2023, with asset value of Million USD 954.3, mainly in Egypt while 135 institutions were reported as money exchange companies, mainly in Tunisia (Figure 48).

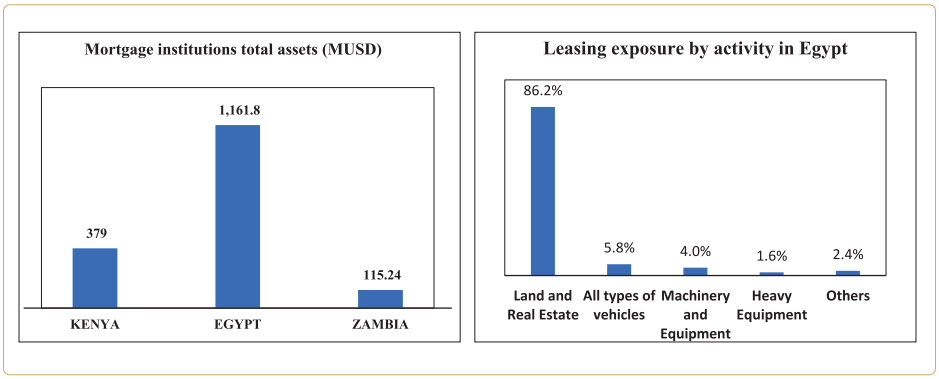
Figure 48: Brokerage and Money Exchange Institutions



1.5 Mortgage and Leasing Industries

In mortgage sector, 23 companies were registered in Kenya, Egypt and Zambia. The majority of them are located in Egypt (20) with a total asset of Million USD 1161.8. In Egypt, 86.2% of credit was allocated to housing while 13.8% was extended to administrative-service-commercial purposes. In the leasing industry, 49 licensed companies are operating in Egypt. In the 3 reported countries, they worth Million USD 3,629.9 with Egypt having 99.5% of assets. In Egypt, loans were extended to 5 sectors including land and real estate, vehicles, machinery and equipment, heavy equipment and others with a concentration of 86.2% in land and real estate. The total amount allocated to the financing was Million USD 3,802.6 (Figure 49).

Figure 49: Mortgage and Leasing Industries in Selected COMESA Countries



1.6 Factoring and Securitization Industry

The factoring sector Egypt constituted 39 institutions, worth Million USD 362.5 while the same country comprised of 16 institutions, worth Million USD 38.8 in securitization.

2. Financial Markets

Major stock exchanges in the COMESA region, including the Nairobi Securities Exchange (Kenya), the Egyptian Exchange (Egypt), and the Stock Exchange of Mauritius (Mauritius), have shown mixed performance. While some markets experienced marginal gains, others witnessed significant declines due to inflationary pressures, currency depreciation, and global economic uncertainties.

The Egyptian Exchange (EGX) saw fluctuations throughout the year due to macroeconomic challenges, including high inflation and interest rate hikes. Nonetheless, some sectors, such as banking and consumer goods, remained resilient. The Nairobi Securities Exchange experienced declines in equity prices due to elevated borrowing costs and subdued economic growth. The banking and manufacturing sectors were hit the hardest. The smaller Exchanges such as the Eswatini, Malawi, and Zambia remained highly illiquid, with low trading volumes exacerbating the volatility of local stock prices.

Several COMESA member states relied on domestic bond markets to finance government deficits. The issuance of treasury bonds increased across the region, reflecting governments' attempts to secure long-term funding. Governments in Kenya, Uganda, and Zambia expanded their borrowing from domestic bond markets, increasing the volume of outstanding debt securities. However, yields remained elevated due to rising inflation and policy interest rates. Further, these showed rising debt-to-GDP ratios, which placed pressure on their fiscal and monetary policies. Debt sustainability is becoming a pressing concern. Meanwhile, corporate bond markets remained underdeveloped in most COMESA countries, limiting the availability of alternative funding sources for private-sector enterprises.

2.1 Market Capitalization and Growth

Capital markets across COMESA countries showed resilience but with mixed performance. Markets like Egypt, Kenya, and Mauritius experienced substantial volatility but managed to recover by 2023. Mauritius, in particular, reached a peak in market capitalization to GDP at 84.91% in 2021, followed by a decline to 58.00% in 2023. The decline suggests a correction or external factors affecting market valuation, which could pose risks to financial stability if not addressed. Malawi's positive trend indicates growing market confidence, which is favorable for financial stability but should be monitored for potential overheating.

Zambia, Tunisia and Uganda have all experienced a consistent decrease in market capitalization to GDP over the last five years. The decline indicates shrinking market activity or unfavorable economic conditions for stock market growth, potentially signaling risks to financial stability and reduced attractiveness for investment. In Zambia, market capitalization as a percentage of GDP has steadily declined from 18.82% in 2019 to 14.45% in 2023, while Tunisia reported a slight downward trend from 19.30% in 2019 to 16.20% in 2023. Uganda realized a consistent decrease in the ratio of market capitalization to GDP from 58.20% in 2019 to 41.01% in 2023.

Figure 50: Stock Market Capitalization in Selected COMESA Countries

Post-pandemic recovery of capital markets has been undermined by inflation, geopolitical tensions, and global economic slowdown. Trading volumes have generally decreased across the COMESA countries, with exceptions in markets like Kenya and Mauritius, where more robust regulatory frameworks and economic diversification have provided some resilience. Otherwise, most of the COMESA countries have seen fluctuations in market capitalization due to economic instability, inflation, and currency devaluations. For instance, Zimbabwe have experienced hyperinflation, severely impacting investor confidence and market stability.

Investor sentiment has been largely negative, particularly in countries where there is less developed capital markets and weaker institutional frameworks. The overall risk perception of Sub-Sahara African markets has remained high, leading to reduced foreign direct investment (FDI) and portfolio inflows.

2.2 All-Share Index

The All-Share Index (ASI) serves as a barometer for the health of the stock market in each COMESA country, reflecting investor sentiment and economic conditions. The ASI tracks the performance of all shares listed on a stock exchange. In the context of COMESA countries, the ASI data for 2022 and 2023 shows fluctuations in the performance of stock markets, reflecting both economic conditions and market sentiment. The percentage changes in the ASI give insights into financial stability, market confidence, and economic resilience. The analysis provides a detailed assessment based on the provided data for 2022 and 2023, focusing on the implications of growth or decline in the index, as well as associated risks, vulnerabilities, and opportunities for each country and the COMESA region as a whole.

Table 1: All-Share Index in Selected Countries in the COMESA Region

Data Overview (All-Share Index)			
Country	2022	2023	Percentage Change (%)
Zimbabwe	19,493.85	210,833.90	981.90%
Zambia	10,828.18	15,903.72	46.85%
Uganda	1,212.60	872.5	-28.04%
Egypt	14,598.53	24,894.26	70.53%
Eswatini	311.3	473.27	52.02%
Malawi	62,036.05	110,951.21	78.84%
Mauritius	1,500.18	2,270.96	51.38%
Tunisia	8,663.92	9,354.66	7.98%

The average percentage change in the All-Share Index for the COMESA region, including Zimbabwe, is 157.64%. However, excluding Zimbabwe, which is an outlier due to its significant increase, the average percentage change is 39.94%. The more moderate average increase reflects a healthier and more sustainable market growth which tends to contribute positively to financial stability as it indicates steady investor confidence and market performance. However, markets with lower growth or declines, such as Uganda, should be monitored for underlying vulnerabilities, such as economic contractions or structural weaknesses in their stock exchanges.

The region overall shows positive trends, the divergence in growth rates among the countries indicates varying degrees of financial risk, with some economies potentially experiencing overheating or volatility, and others showing stagnation or decline

Zimbabwe reported a dramatic increase in the ASI from 19,493 points to 210,833, indicating a surge in investor confidence and market activity. However, this growth may also reflect inflationary pressures and speculative trading, which can lead to instability. The high volatility poses risks, especially in a challenging economic environment.

In Zambia, the All-share index increased by 46.8 percent, from 10,828 to 15,904 in 2023. The increase suggests improved market sentiment and possibly effective economic policies. However, the rapid growth might not be sustainable if driven by external factors rather than strong fundamentals. Over-reliance on commodity exports and external shocks could dampen investor confidence if global prices decline.

Uganda posted a decline in the All-share index from 1,212.60 in 2022 to 872.50 which indicates a possible weakening investor sentiment, possibly due to unfavorable economic challenges. This situation raises concerns about the market's ability to attract investment.

The Egyptian Exchange posted a growth in the ASI (14,598.53 to 24,894.26), reflecting a recovery from previous lows, potentially driven by structural reforms and foreign investments. However, it could also lead to overheating if growth outpaces economic fundamentals.

In Eswatini, there was an ASI increase from 311.30 in 2022 to 473.27. This increase indicates a positive sentiment among investors, but the relatively low index level suggests limited market participation. There is potential for growth, but caution is advised due to external economic conditions. Economic dependence on a small number of sectors may pose challenges.

The Malawi Stock Exchange ASI increased significantly from 2022 index of 62,036.05 to 110,951.21 in 2023. The significant increase suggests strong market performance, potentially driven by favorable government policies. This growth could attract more investors looking for emerging market opportunities. However, such rapid growth can lead to market corrections.

Mauritius, 2022 ASI of 1,500.18 to 2023 index 2,270.96, reflects a stable and diversified economy, positioning Mauritius as a regional investment hub. However, maintaining this growth requires consistent policy support and continual diversification to reduce market dependency on external tourism and global economic conditions which could affect stability.

The Tunisia ASI posted a modest growth from 8,663.92 in 2022 to 9,354.66 in 2023, which indicates a cautious optimism in the market and potential underlying challenges related to political and economic reforms. Continued political instability can hinder investor confidence.

2.3 Equity Turnover Volume

Equity turnover volume measures the total value of shares traded in a market over a specific period. It reflects the liquidity of the stock market, investor confidence, and overall market activity. High equity turnover volume signals a healthy, active market with high liquidity, while a lower turnover suggests lower investor confidence and reduced liquidity.

In 2023, the COMESA region countries realized general growth in equity turnover, which signal positive development in financial markets, though vulnerabilities remain, especially in the smaller and less liquid markets. The region showed an average Equity Turnover Volume growth of approximately 126.65% in 2023, indicating a robust increase in market activity across COMESA countries.

The high growth rates in some markets warrant careful monitoring to avoid overheating or excessive exposure to external risks. Policymakers should focus on strengthening market infrastructure, improving transparency, and encouraging cross-border integration to mitigate risks and promote sustainable growth.

Table 2: Equity Turnover in Selected COMESA Countries

Country	Equity Turnover Volume (2022)	Equity Turnover Volume (2023)	Percentage Change
Zimbabwe	479,207,812	1,533,465,000	219.6%
Zambia	942,660	2,284,299	142. 5%
Uganda	2,121,600	2,203,200	3.8 %
Egypt	10,983,574	21,058,037	91.7 %
Eswatini	12,332	30,292	145.6 %
Malawi	29,842	44,472	49.0 %
Mauritius	14,053,176	27,542,490	95.9 %
Tunisia	12,690,717	32,865,703	158.9 %

Zimbabwe stock market equity turnover volume surged by over 219%, indicating a revitalization of the stock market and heightened investor confidence. This growth may signal recovery from past economic challenges. However, the volatility associated with such rapid increases may also pose risks, including market corrections and speculative trading. If the trend continues, it may attract foreign investment and stimulate economic recovery.

In Zambia, the 142% increase in turnover volume suggests an expanding investor base and increased market liquidity. This could attract foreign investment, but it may also raise concerns about market sustainability and reliance on external capital.

There was a modest 3.84% increase in turnover in Uganda, which indicates market stability but may reflect limited investor activity. This stagnant growth could signify underlying

economic issues or investor caution, potentially hindering market expansion. Economic reliance on agriculture, which is subject to climate risks, can lead to instability in the stock market.

An increase of 91.7% highlights a robust recovery and strong investor engagement in 2023 in Egypt. This could bolster Egypt's position in the region, but high turnover without corresponding economic growth might suggest speculative trading. Continued reform and foreign investment could solidify economic stability.

The Eswatini Stock Exchange reported an increase of 145.61% in equity turnover, suggesting an encouraging upward trend. The growing turnover can foster financial innovation and attract new businesses to the stock exchange.

The Malawi Equity Turnover increased by 48.99%, indicating a positive trend but at a slower pace than other countries. The slower growth may be indicative of structural economic challenges that need addressing to sustain future market growth.

In 2023, there was an increase of 96.15% in the equity turnover volume, which suggest a healthy and dynamic stock market in Mauritius. This could enhance Mauritius's attractiveness as a regional financial hub, but potential overreliance on the stock market for economic growth poses risks.

The Tunisia market realized a 158.25% rise in equity turnover which points to increased investor interest and market activity in 2023. While this growth is promising, it requires careful monitoring to mitigate risks of bubbles or unsustainable price increases.

The overall trends in the ASI across COMESA countries reflect mixed investor confidence, which can affect regional stability. Countries with declining indices may deter investment in the region, while those with rising indices could attract more attention. Some countries like Mauritius and Zambia show potential for diversification and growth, presenting opportunities for intra-regional investment.

Political instability, reliance on commodities, and global economic conditions present risks that could lead to volatility across the region. The divergence in market performance indicates that COMESA countries must pursue tailored economic policies to mitigate risks. Countries demonstrating strong growth in their All-Share Indices have the potential to capitalize on increased foreign investment and economic development initiatives, which could foster stability and growth across the region.

2.4 Emerging Opportunities

Opportunities emerge in the COMESA capital markets. These are:

1. Digital Transformation and Financial Technology

i. **FinTech Growth:** The rise of fintech in COMESA has the potential to expand access to capital markets, particularly in countries with underdeveloped financial systems. Kenya, Egypt, and Rwanda are leading the way in leveraging digital technologies to increase financial inclusion. Regulatory improvements aimed at supporting fintech innovation have created opportunities for deeper market integration and broader participation.

ii. **Mobile-Based Trading Platforms:** The development of mobile-based trading platforms has allowed retail investors in countries like Kenya

and Uganda to participate in stock markets. This trend has attracted a new generation of retail investors and promoted liquidity in markets traditionally dominated by institutional investors.

2. Green and Sustainable Finance

i. **Green Bonds:** COMESA countries are increasingly exploring green finance as a way to attract foreign investments and promote sustainable development. Kenya and Egypt have led in issuing green bonds to finance renewable energy projects and climate-resilient infrastructure.

ii. **Sustainability Reporting:** The demand for ESG (Environmental, Social, and Governance) reporting is growing in the region. Companies in markets like Kenya are gradually adopting global best practices for sustainability, making them more attractive to international investors with a focus on sustainable investments.

3. Regional Integration Initiatives

i. **African Continental Free Trade Area (AfCFTA):** COMESA countries stand to benefit from AfCFTA, which is expected to enhance cross-border capital flows, reduce trade barriers, and deepen regional capital markets. The integration of capital markets within COMESA countries and broader African regions could lead to increased liquidity and investment opportunities.

ii. **Cross-Listing of Securities:** Efforts to promote cross-listing of securities across COMESA exchanges, such as Kenya and Rwanda, could allow companies to raise capital from a broader investor base while providing diversification opportunities for investors.

2.5 Vulnerabilities and Implications

The COMESA financial market is facing many challenges which have some implications on its growth and performance. These are:

- **Economic Instability:** Persistent economic challenges, including inflation, currency instability, and fiscal deficits, pose significant risks to the stability of capital markets in the Region. Some countries with fragile economies are particularly vulnerable to external shocks and policy missteps.
- **Political Risks:** Political instability and governance issues continue to undermine market confidence. Some countries report episodes of political uncertainty which can lead to capital flight and reduced investor participation.
- **Regulatory and Institutional Weaknesses:** Weak regulatory frameworks and institutions in some of the COMESA countries have hindered the development of deep and liquid capital markets. This limits the ability of these markets to attract and retain long-term investments.
- Global Economic Conditions: The capital markets in the region are highly susceptible to global economic trends, including commodity price fluctuations, changes in interest rates in developed markets, and geopolitical tensions. These factors can lead to capital outflows and increased volatility.
- In conclusion, the analysis of the ASI across COMESA countries reveals a complex picture of financial stability. While some countries exhibit promising

growth, others face significant challenges. For the region, enhancing investor confidence and promoting economic diversification are critical for sustaining stability and capitalizing on the opportunities presented by favorable market conditions.

- The analysis of Equity Turnover Volume in COMESA countries demonstrates a generally positive trend, indicating growing investor confidence and market activity. However, the associated risks and vulnerabilities require careful monitoring and strategic management to ensure sustained financial stability. Countries must focus on enhancing their economic fundamentals to support long-term growth in stock market activities while mitigating the risks of volatility and external shocks.

CHAPTER 5

STRESS TESTS: EXPERIENCES FROM SELECTED COMESA COUNTRIES

1. Introduction

Stress testing is a forward-looking risk management tool designed to determine the resilience of either a bank or the whole banking sector in terms of enough capital and liquidity to withstand negative shocks under hypothetical, yet plausible scenarios. Stress tests focus on key areas, such as credit risk, market risk, operational risk, liquidity risk, and contagion. While the micro-prudential stress test assesses the adequacy of individual banks' capital or liquidity based on their portfolio risks, macroprudential stress test focuses on financial vulnerabilities that can trigger systemic risk. IMF uses macroprudential stress tests to assess systemic risk as part of the IMF's mandate to monitor global financial stability, this is provided through the Financial Sector Assessment Program (FSAP). Recommendations and corrective actions based on macroprudential stress test results could include the need to boost capital cushions, or the adoption of other macroprudential measures, such as measures targeting credit demand e.g. debt to income and loan to value ratios, capital surcharges, or liquidity requirements.

New issues have emerged creating new challenges for stress testing such as risk amplification mechanisms, climate change, and fintech. The different stress tests should be integrated to obtain an overall picture of systemic risk, by assessing the interaction among different types of risks such as solvency and liquidity factors, and among real and financial effects, and other forms of risk amplification. As for climate related financial risks, they include both physical and transition risks that could have an adverse impact on banks' solvency and liquidity. Fintech may bring new channels of risk transmission, including interactions with banks in terms of credit provision to the economy, and interconnectedness through similar trading patterns. On the other hand, stress testing methodology could benefit from big data analytics including artificial intelligence, and machine-learning tools and techniques, this includes the use of detailed big data-based analysis that would employ predictive analytics rather than historical one.

On the side of COMESA member countries, they developed their macroprudential analytical toolkit to include stress testing, in order to simulate the effect of plausible potential macro-financial shocks on the stability of the financial system as a whole, in light of the efforts of COMESA Monetary Institute (CMI). In this chapter, stress testing was applied at the level of some banking sectors in the COMESA countries based on a unified scenario that varies in terms of the degree of severity of its impact within the framework of a scenario of macrofinancial risks, in order to assess the resilience of the banking sectors in such countries to withstand the assumed shocks in terms of capital adequacy.

2. Experiences of Selected COMESA member countries in conducting stress tests

COMESA member countries developed their macroprudential analytical toolkit to include stress testing, in order to simulate the effect of potential shocks, that may originate from the macro-financial environment, on the stability of the financial system as a whole. In fact, out of the sixteen-member countries responding to the 2023 questionnaire, thirteen countries [32],[33], [34] are conducting macro-stress tests whether annually or bi-annually, to test credit, liquidity, market, and contagion risks in the banking sector (Additional information on micro-stress tests implemented by COMESA member countries are available in Appendix 4).

Based on countries responses to the questionnaire and the latest published Financial Stability Reports, banking sectors demonstrated resilience to disruptive shocks assumed in the scenarios. With different stress tests' frameworks, results were generally favorable. The vulnerabilities identified had different levels of severity under the respective scenarios. The stress tests were based on severe, yet plausible assumptions of key economic and financial variables. The following table gives a snapshot of the stress tests conducted by these member countries.

Table 3: Implementation Structure of Stress Tests by Selected COMESA Member Countries

Country	Frequency	Type of risks
Burundi	Annually	Credit and Liquidity
DRC	Annually	Credit, Liquidity, and Market
Egypt	Annually	Credit, Market, Liquidity, Contagion, Concentration Operational, and Climate Change
Eswatini	Annually	Credit and Liquidity
Kenya	Annually	Credit, Market, and Climate Change
Madagascar	Annually	Credit, Market, Liquidity and Operational
Mauritius	Bi-annually	Macroeconomic, Credit, Market and Liquidity
Rwanda	Quarterly	Macro risks (Output gap, inflation), Credit, Concentration, Market, Liquidity and climate risks (physical risks)
Seychelles	Annually	Credit and Liquidity
Sudan	Annually	Credit, Liquidity, and Market
Tunisia	Once in 2021 and 2022	Credit
Uganda	Annually	Credit, Liquidity, Market, and Concentration
Zambia	Annually	Market (exchange rate) and Climate Change (drought)

[32] The Central Bank of Libya does not implement any stress tests on the banking sector.

[33] The Central Bank of DRC does not publish the stress test in the FSR. The Central Bank of Sudan and Tunisia conduct the stress tests internally without publishing the FSR. As for Madagascar, the latest FSR published is in 2018

[34] This section focuses only on macro stress-tests, i.e. applied to the banking sector as whole, not on institutional level. Therefore, the stress tests implemented by Malawi and Zimbabwe are not included in this section as these are micro-stress tests. Notably, the Reserve Bank of Malawi and of Zimbabwe are working on developing a macro stress-test.

1) Burundi

From a macroprudential point of view, the stress test was conducted to assess the resilience of the banking sector to systemic risks identified. The systemic risks were either doubled or halved (depending on the direction of the risk) for a period of over 3 years . The impact is measured in terms impairment of credit portfolio of the banking sector and its impact on capital.

The results are such that the solvency of the banking sector is:

◊ Vulnerable to the risk related to the increase in the current external deficit and the reduction in foreign exchange reserves, due to decline in world prices of exports (coffee and gold) and the fall in the production of the latter.

◊ Resilient to the risk related to domestic public debt.

◊ Vulnerable to the risk related to the general rise in the price level at the national level.

2) Egypt

◊ The Central Bank of Egypt (CBE) applied scenario analysis to the largest 10 banks, representing 80% of the banking sector's total assets in December 2023, to measure the extent to which their solvency is affected by certain systemic risks. The liquidity stress tests in local and foreign curren¬cies were also applied on the whole sector. Macro-financial Risks Scenario includes assumptions for changes in macroeconomic and financial conditions related to the external sector, monetary policy, economic sectors' performance, government sector fiscal performance, and credit rating.

2.1. Systemic Risk Resulting from Sovereign Exposures

◊ **Sovereign Credit Risk:** Under the macro-financial risks scenario and the associated possibility of a decline in the government's fiscal performance and a downgrade of the country's credit rating, the total expected credit loss (ECL) was calculated according to IFRS 9.

◊ **Market Risk for Sovereign Exposures:** The impact of the assumed interest rate changes was as¬sessed through the revaluation of government bonds using the present value method. The assumed increase in the interest rate is added to the yields, which leads to the decline in bond prices.

◊ **Liquidity Risk Resulting from Sovereign Exposures:** liquidity risks stress tests were applied on the LCR in local and foreign currencies by applying higher haircuts for some categories of high-quality liquid assets, or higher deposit run-off rates represented as cash outflows over a month. Regarding liquidity cash flow, some cash inflow and run off were assumed. Then the adequacy of liquid assets was assessed in terms of its ability to cover the negative cumulative gaps, after haircuts were applied to government securities and balances with banks.

2.2. Sensitivity Stress Testing for Credit and Con¬centration Risk Resulting from Government Securities' Investment Portfolio in Local Currency

Stress tests for sovereign credit risk and concentration risk of investments in government securities in local currency were applied, followed by the Basel Committee's proposal to review the preferential treatment of claims on sovereign entities, through increasing the

risk weight add-ons applied to government securities in local currency. As for the concentration risk, additional risk weights were applied progres¬sively to tiers exceeding the ratio of claims on sovereign entities to tier 1 capital.

2.3. Macroeconomic Systemic Risk

- ◊ Corporate and Household Credit Risk: For credit risk on loans borrowed by large corporates and small and medium-sized enterprises, it is assumed that the weighted average portfolio risk rating declines. It is also assumed that a proportion of the loan portfolio granted to micro enterprises is defaulted, as well as a percentage of the consumer and mortgage loans for personal housing, is defaulted and transitions from normal and watch to substandard category of non-performing loans.
- ◊ Market Risk Related to Foreign Exchange: The impact of the local currency depreciation on the net open positions in foreign cur¬rencies was assessed. The assumption was based on the depreciation of the local currency.

2.4. Sensitivity Stress Testing for Credit Concentration Risk in the Corporate Loan Portfolio, Corporate Credit Risk in Foreign Currencies, and Market Risk

The effect of credit concentration risk in the corporate loan portfolio was measured by assuming the default of the top 3,5 and 10 obligors at each bank. As for market risk, repricing gaps have been used to estimate the direct impact of a higher interest rate shock by measuring the value of expected losses or profits.

2.5. Cybersecurity Sensitivity Stress Testing

Higher losses from cyber-attacks were assumed due to the increased reliance on electronic financial services. The im¬pact of this assumption on the banking sector's solvency was measured using the standardized approach.

2.6. Contagion Systemic Risk

Stress tests for the direct contagion risk from the NBFIs to the banking sector were applied by assuming the failure of the non-banking financial activities to pay a percentage of their obligations to the banking sector. In addition, direct contagion risk in the banking sector stems from the interconnectedness between banks in the interbank market. The matrix of net interbank bilateral exposures has been used to measure the direct contagion risk, under the assumption that some banks fail to pay their obligations to other banks in the banking sector.

2.7. Climate Change Systemic Risk

Stress tests were applied to measure the potential impact of climate risks on the banking sector, including physical and transition risks. The CBE used two scenarios for mea¬suring climate change risks that may impact the banking sector in the short term, for a period of one year. As for credit risk, the corporate credit portfolio stress tests were conducted assuming a decrease in the weighted credit rating for a per¬centage of the portfolio of loans and credit facilities.

2.8. Reverse Stress Testing

The aim of the reverse stress test is to assess the resilience of banks to solvency and liquidity risks. The reverse stress test is also used to determine haircuts on some liquid assets that result in a decrease in the average li¬quidity ratios in local and foreign currencies with prescribed regulatory limits.

2.9. Stress Test Results

The stress test results showed a low or moderate risk level of resilience to solvency risk and liquidity risk in local and foreign curren¬cies. This indicates the ability to absorb all losses resulting from the assumed shocks of varying degrees of severity. The results also showed that the decline in the average liquidity ratios may result from applying significantly high haircuts to government securities in the numerator of the ratio, which highlights the financial resilience of the banking sector.

3) Eswatini

The stress tests focused on two main potential sources of vulnerability for the Eswatini banking sector, namely credit risk, which are considered the main risk of the banking sector.

Types shocks	Assumption	Results
Credit Risk		
Continued deterioration in asset quality	Uniform shock to the baseline level of performing loans turning into nonperforming loans	24.7 percent of performing loans would have to migrate to non-performing status for the first bank's capital adequacy ratio to fall below the 8.0 percent minimum regulatory requirement. The system's resilience to credit risk improved when compared to the 21.3 percent reported in the previous year.

4) Kenya

The CBK conducted the 2023 Banking sector stress test using the balance sheet approach that focused on credit and interest rate risks. It utilized the aggregate bank data for December 2022 for credit risk stress test and June 2023 data for interest rate risk.

The credit risk stress test was conducted to assess resilience of the banking sector to plausible but realistic shock scenarios based on prevailing macrofinancial conditions. The impact of the risk was estimated under the baseline, moderate and severe scenarios. The scenarios were designed to reflect shocks emanating from domestic and global developments that posed downside risks to economic recovery, and in turn vulnerabilities to the banking sector.

The 2023 stress test also assessed the direct and indirect impact of drought on agriculture to assess the resilience of the banking sector to climate change risk. The results of both the macrofinancial -based stress and drought shock stress tests (collectively known as "event-based stress tests") are assessed against Baseline stress test. Its shocks were estimated at 8.59 percent, 13.08 percent, and 25.78 percent increase in NPLs under the baseline, moderate and severe scenarios respectively. The size of shocks reflects lending standards, sectoral loans exposures, impact of elections on the economy, historical trends in NPLs, and global developments.

This stress test also incorporated interest rates shock that used the June 2023 bank data. This follows monetary policy tightening in advanced economies and in Kenya to

stem inflation but led to negative impact on the stability of some banks. The stress test was therefore conducted to assess the resilience of Kenya's banking sector to interest rate shock transmitted through assets quality impairment reflected in the increase in NPLs, and through valuation losses arising from repricing of bonds held under Available for Sale (AFS) and Held for Trading (HFT).

Overall, the banking sector has sufficient capital to absorb credit and interest rate risks arising from macroeconomic shocks, drought shock and interest rate shock. The drought shock has the least negative impact on the banking sector in 2023.

5) Mauritius

The Bank conducts regular stress tests to assess the capacity of the banking sector to absorb exogenous shocks. The stress test results indicate that banks have adequate capital buffers to absorb shocks and sustain lending . While most banks displayed commendable soundness, a few showed some weaknesses in the severe scenarios. The bank under statutory management was excluded from the exercise to avoid biasing results. The Bank upgraded its stress test framework in 2023. New modules were introduced to better evaluate the resilience of the banking system, including over a forecast horizon. The forward-looking module considers the projection of relevant banking sector variables, such as the CAR, RWA, NPL, sectoral NPL and sectoral domestic credit for the banking sector as well as for each bank. Two sets of macro scenarios are applied to better measure the resilience of the banking sector, namely: (i) the macroeconomic scenario and (ii) the augmented macroeconomic scenario.

The macroeconomic scenario compares the strength of the banking sector and banks over time when economic activity drops. Specifically, the scenario was investigated through adverse macroeconomic shocks to GDP at three severity levels: the baseline shock with 6 percent growth, the moderate shock with zero growth, and the severe shock with 3 percent economic contraction. The banking sector demonstrated continued resilience to the three macroeconomic shocks and its transmission to the credit portfolio of banks, based on both the actual and subsequent quarters.

The augmented macroeconomic scenario introduces interest rate and exchange rate shocks to the baseline and moderate macroeconomic scenarios as applied in the initial macroeconomic scenario. This scenario assesses the impact of two sets of shocks; that is interest rate and exchange rate shocks. The first set assumes a reduction in interest rates along with depreciation of the domestic currency, while in the second set, interest rates are presumed to continue increasing with a lower level of depreciation of the Rupee. All banks were assessed to be resilient for the quarter ended December 2023. They continued to remain sound based in the forecast for June 2024, with the exception of one small bank in the moderate scenario.

The Bank also conducts two sensitivity stress tests to shocks in the sectoral credit and credit concentration. The sectoral credit sensitivity stress tests evaluate the strength of the banking sector to withstand a deterioration in asset quality of the seven largest portfolios. Credit concentration risk was investigated by considering the hypothetical cumulative default of the top ten single borrowers for each bank. The stress test exercise showed that all banks would be resilient to the three shocks based on the December 2023 data as well as in the forecast for June 2024.

6) Rwanda

Stress testing has become integral to NBR financial sector stability assessment. Currently, the NBR uses two frameworks for stress testing notably the static framework (Cihak Model) and the dynamic framework (Macroeconomic Stress Scenario). The Cihak model is based on static assumptions that the balance sheet of banks does not change and banks do not react to monetary policy change. This model implemented in spreadsheet accommodates both bottom up and top-down approaches and covers risks like credit risk, concentration risk, liquidity risk, market risk and contagion risk. In contrast, the Macroeconomic Stress Scenario (MESS) framework is dynamic in nature and is as a tractable, operationalizable, and theoretically sound model-based framework that serves as a workhorse tool for financial stability and macroprudential analysis at the NBR. The framework synthesizes key insights from the literature on the financial sector to provide a model blueprint that captures the most important transmission mechanisms of financial sector shocks.

The MESS is a semi-structural model that exhibits considerably stronger consistency with economic theory. It explicitly describes the aggregated financial sector balance sheet and links it to the NBR monetary policy model (QPM), thus making the balance sheet dynamic. Both the real and financial sectors are modeled at an aggregate level, making MESS suitable for top-down stress testing exercises. However, it needs to be complemented by further tools to produce bank-level stress testing results. The model contains stock-flow accounting formulas for assets and liabilities and simultaneously describes endogenous equilibrium on the credit market and endogenous feedback between the real and financial sectors. Several key equations describe a stylized (often nonlinear and asymmetric) behavior of financial sector variables in response to developments in the real economy, inspired by observations of these interactions in normal versus stressed times. The real economy is, in turn, affected by the balance sheet conditions of the financial system. Therefore, MESS describes the financial system and the real economy, as well as their two-way interactions within one simultaneous system.

For each framework, either Cihak or MESS, sensitivity analysis and or scenario analysis are performed. The sensitivity analysis and or scenario analysis is performed. The sensitivity analysis is conducted to measure potential impact of a single shock on the financial sector stability while scenario analysis is concerned with measuring the impact of multiple shocks in comprehensive scenario of economic and financial risks. Tests are applied assuming different level of severity (baseline, moderate and severe) for the shocks. The outcome of the tests guides the NBR to proactively take the required prudential measures to avert the negative repercussions in case of the hypothetical scenarios materialize.

Scenarios and Outcome of Recent Stress Tests:

- ***Static model:*** The stress test based on June 2024 data indicated that banks can withstand the adverse macro-financial shock. The assumption for the test is geopolitical-induced vulnerabilities that would induce income challenges to corporates, affecting their capacity to service their loans with a negative impact on the asset quality of banks. In this context, the stress test exercise considered the impact of the aggregate credit shock and assumed that 5.9 percent of performing loans are going to be non-performing in the baseline scenario, 11.8 percent in the moderate scenario and 14.4 percent in the severe scenario. The results indicate that banks are generally resilient to credit shocks. Under all three system-wide scenarios where additional performing loans are assumed to become NPLs, bank capital adequacy levels remain strong. The industry capital adequacy ratio would marginally decline to 21.3 percent, 21.1 percent and 21.1 percent under baseline, moderate and severe scenarios, respectively.

- ***Dynamic model:*** The scenario for this stress test assumed a recurrence of the COVID-19 typical pandemic that paralyzes the movement of people and goods and induces the shutdown of businesses. This causes the cut of the production and a rise in employment that causes fall of revenues for both households and businesses. The domestic demand especially for the services sector that is the main driver of the economy becomes severely affected. Besides, the suspension of international travels also significantly contributes to the decline of foreign demand, especially for tourism related services and exports of main commodities. Obviously, the demand for new credit shrinks amid adverse economic conditions. This scenario assumes no government and central bank interventions. As the pandemic intensifies and significantly disrupts supply chains, the economy falls into recession but start to recover in the subsequent year after resumption of businesses. The result showed that the banking sector remain resilient to this severe stress scenario. In response to subdued aggregate demand, the monetary policy eases by 175 basis points for the consecutive three quarters while exchange rate depreciates by 22.6 percent in 12 months. Meanwhile the Gross Domestic Product declines by 1.8 percent while the credit portfolio default rate increases to 12.4 percent from 4.9 percent in 12 months. Further, reflecting the resilience build by banks, results showed that banks would be able withstand severe macroeconomic scenario and have the capacity to support households and businesses. The consolidated capital adequacy remained strong standing at 18.9 percent from 21.3 percent, higher than 15 percent minimum requirement. This leaves banks well placed to support the economy by meeting the demand for lending during the stress period.

7) Seychelles

To appraise the banking sector's resilience to shocks, CBS conducts both periodic and ad hoc stress tests using scenario analysis. The hypothetical but plausible assumptions used to prepare the scenarios consider both past shocks and potential financial stability

risks. The Bank conducts stress tests on solvency and liquidity risks. To assess the adequacy of the capital buffers of the domestic banking sector, three hypothetical scenarios - baseline, adverse and severe - were used. The scenario analysis was developed with a focus on the time horizon of the stressed period and the intensity of the shocks, while taking into account adverse macroeconomic shocks to GDP, including interest and foreign exchange risks.

As for liquidity, a simple liquidity test was performed on the domestic banking sector to gauge the adequacy of banks' liquidity buffers in withstanding possible shocks. The exercise was conducted over fifteen rounds using estimated rates of withdrawal, whereby available liquid assets were reduced after each round. The result of the liquidity test was analyzed in terms of large and small banks. Overall, the liquidity test showed that the domestic banking system has the capability to withstand liquidity shocks for a minimum of eleven weeks.

8) Sudan

The stress testing methodology is based on the use of three basic scenarios that include conducting stress tests on each of (financing risk, liquidity risk, and exchange rate risk) that allow these tests to examine the adequacy of the capital resources of banks to face losses (their assets are sufficient to finance their liabilities and cover their future losses. The importance of these tests is that they help to take proactive measures to protect banks against risks.

Scenarios for credit risks have been developed by subjecting banks to a number of shocks, then measuring the impact of this on the potential losses that banks may be exposed to if exposed to these shocks, and then calculating the impact on banks' net capital adequacy (capital adequacy before the shock - capital adequacy after the shock) to assess whether the capital ratios will remain within the limits determined by the Central Bank of Sudan, and assess the need for banks to inject additional capital to strengthen their bases.

Credit risk stress tests include 4 shock scenarios, each of which will measure the impact on capital adequacy, asset quality, profitability, and liquidity indicators as follows:

1. Shock scenario (1) Deficit in provisions required by the Central Bank: The results of stress tests on individual banks showed that banks have a provision deficit, which affects their ability to withstand the risks they face in the current situation, as the capital ratio required to meet the minimum capital adequacy ratio has increased

2. Shock scenario (2) The relative increase in NPL ratio: The increase in NPL ratios to different degrees led to a decrease in the capital adequacy ratio, thus increasing the banks need to inject additional capital in different proportions to strengthen their capital.

3. Shock scenario (3) NPL by sectors: It should be noted that some sectors are interrelated, for example, in the event of a shock in the agricultural sector, some sectors, such as manufacturing, transport and storage, for example, will be affected. Thes sectors: exports and imports, agriculture, real estate, transport and storage represented high risks in the event of an increase in the percentage of default for these sectors according to the mentioned scenarios.

4. Shock scenario (4) Default for large exposure in banks: The results of pressure tests for large customers (Large Exposures)

showed that if one of the large exposure defaults, the capital adequacy ratio will decrease by 8 percent. Two large exposure default, the percentage will decrease by 12.6. If three large exposure default, the capital adequacy ratio will decrease by 16.6.

9) Uganda

Bank of Uganda (BOU) carried out stress tests to assess banks' resilience to a significant worsening of the economic outlook under several severe scenarios. Two macro scenarios were used covering further rise in inflation and tightening of monetary policy by increasing the central bank rate (CBR) over a forecast period of one year from June 2022 to June 2023. In both scenarios, stress testing shows that the banking sector is in a strong position to weather a severe downturn in economic conditions, even without accounting for mitigating actions.

It is noteworthy that in 2019, the Bank of Uganda embarked on developing an Integrated Stress Testing Framework (ISTF) comprised of micro, macro, and bottom-up stress tests. Thus far, BOU has established micro and macro stress tests conducted at quarterly and annual frequencies, respectively, and the results are reported in the Financial Stability Report.

To complete the ISTF, BOU launched the implementation of bottom-up stress testing (BUST) in October 2021, with technical assistance from the International Monetary Fund (IMF). Several key objectives underpin the exercise. First, is to strengthen monitoring of current and emerging systemic risks and calibrating macroprudential policies for Uganda's banking sector. Second, is to improve the BOU's internal capacity and models for assessing the resilience to plausible adverse scenarios under Basel II. Thirdly, given the ever-changing environment within which banks operate, it is imperative to continuously enhance the robustness of stress testing methodologies to enable banks to proactively implement measures to increase their resilience against sudden adverse market developments.

Initially, only the domestic systemically important banks (DSIBs) were required to participate in the BUST exercise, given their risk implications for the sector and possession of the requisite minimum technical capacity to conduct the required stress tests. The participating banks were required to use their own models to run common baseline and adverse scenarios, developed by BOU, and submit the stress test results to BOU for review and consolidation. These tests were based on data for the year ending in 2021 and covered a two-year forecast horizon to December 31, 2023. BUST will be rolled out to all commercial banks in due course.

The inaugural exercise covered credit and market risks only. The activities of the BUST exercise were carried out in phases that included a review of the DSIBs' stress testing frameworks, the design, approval and issuance of baseline and adverse stress test scenarios, the DSIBs' and BOU's execution of the stress tests with a forecast period of two years, the validation of the stress test results from participating banks by May 2022, and final engagements with the participating banks.

The review of the findings from the initial exercise revealed several lessons for the participating banks and the Bank of Uganda, which will be considered to improve the next BUST exercise. Among these were some weaknesses in the DSIBs' stress testing frameworks, which

undermined the quality, reliability, and aim of the exercise. In some cases, banks used models developed by the parent/ group company, which did not address the Ugandan risk profile. This highlighted the need for participating banks to enhance their staff's modelling skills and capacity further. It was also observed that the scenarios and the data templates shared with banks needed to be simplified with reduced variables. The exercise was also affected by data quality and collection challenges.

Given these lessons, BOU and the IMF team engaged participating banks to conduct training and improve the scenario and processes. All DSIBs have taken steps and continue implementing initiatives in conjunction with BOU to address the said challenges. The BUST exercise is scheduled every two years, and the next exercise will be conducted in 2023, based on the banks' 2022 financial data, for further enhancement before rolling out to the rest of the sector in 2024.

10) Zambia

The May 2024 round of the stress test examines the potential severe impact of the drought on the solvency of the banking system. 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 decline in demand for labor, 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 programs against a backdrop of falling revenues. Government resorts to importing 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, Bank of Zambia tightens monetary policy further by raising interest rates which dampens 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.

Simulation results indicate that commercial banks' intermediation function would weaken as deposit mobilization and the flow of credit is 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.

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.

3. Application of Stress Tests to Some Banking Sectors in the COMESA Member Countries [35]

Stress testing was applied the banking sectors in the COMESA countries based on one scenario across all countries. [36]The severity of the scenario varies in terms of its impact. The scenario is based a trigger event, which is worsening geopolitical condition in middle East, which disrupts supply chains in domestic and regional economies . Scenario analysis was implemented at the macro level of the largest banks in the banking sector, which represent about 80% of the sector's assets, it incorporates several types of risks; sovereign credit risk of the government sector credit portfolio and the financial investment portfolio in government securities in domestic currency, concentration risk, and market risk for interest rate and foreign exchange. The implemented stress tests aim to assess the resilience of the largest banks in some of the COMESA member countries in terms of adequacy of their capital to cover unexpected losses.

STRESS TEST SCENARIO

- Decline in global demand associated with geopolitical and trade tensions, the acceleration of global inflation rates, leading to a persistently restrictive monetary policy, slowdown in global trade and regional tourism movements. These assumed developments result in increased capital outflows from African emerging markets, increased pressure on domestic currencies amid higher levels of uncertainty, rising interest rates, and thus higher **market risk.**
- The negative impact of the decline in global demand on many export-dependent industries, as well as the contraction of the manufacturing sector's production as reflected in higher default rates in the corporate credit portfolio of banks, and higher probability of default at the level of the top obligors in the banking sector, thereby elevating **credit and concentration risks.**
- Increase in government budget deficit as a re¬sult of the decline in revenues following the slow-down in many economic sectors, together with an increase in financing needs, in tandem with rising sovereign financing cost, thus a decline in investors' confidence in the government's ability to pay back its obligations, which may result in a downgrade of the country's credit rating, thereby higher **sovereign credit risk**, a decline in the liquidity of government securities and the depreciation of their value, beside bank runs.

[35] Stress test implementation for COMESA member countries in this section is based on the data provided by some countries as per COMESA FSR Survey, 2022.

[36] The assumptions of the stress tests were applied following the Basel Committee's proposal to review the preferential treatment of claims on sovereign entities through applying risk weight addons on those claims. As well, the stress tests were conducted depending on the hypothetical assumptions that were used in FSAPs exercises.

Sovereign credit risk stress tests assess the resilience of the banking sector to default on public and publicly guaranteed loans as well as paying principal and interest due on government securities. As for credit concentration risk, stress tests are conducted by assessing the impact of the hypothetical default of the bank's top five and ten obligors – and their related parties - on the banks' required provisions and hence their capital adequacy ratio (CAR).

The objective of the market risk stress test is to assess the banks' resilience to adverse changes in interest rate and exchange rate. The impact of interest rate risk was assessed using time-to-repricing buckets. Different interest rate sensitive assets and liabilities are grouped together in different buckets depending on their time-to-repricing. The expected losses or gains on interest income are computed as the product of this gap between assets and liabilities and the changes in the interest rate. This particular analysis only deals with the direct effect of interest rate risk. Banks are usually exposed to increase in interest rates because they are performing maturity transformation. Banks' net interest income is the main source of profits and is sensitive to changes in interest rates, as these could reduce the interest margin depending on the time to asset and liability repricing. In case of banks that display a negative time-to-repricing gap i.e. liabilities are repriced faster than assets, this leads them to lose interest income when interest rates rise.

The direct effects of exchange rate risks were assessed based on the banks net open foreign currency positions. The implied gains or losses on these positions were computed as the product of the net open position and the expected change of the domestic currency exchange rate in each of the scenarios. A positive net foreign exchange position of the banking system implies that the banking system experiences direct market gains in the case of a local currency depreciation.

3.1. Sovereign Credit Risk

Within the framework of the applied scenario, the increase in sovereign credit risk was reflected in higher default rates for government sector loan portfolio as well as its portfolio of treasury bills and bonds.

3.1.1 Loan Portfolio Sovereign Credit Risk

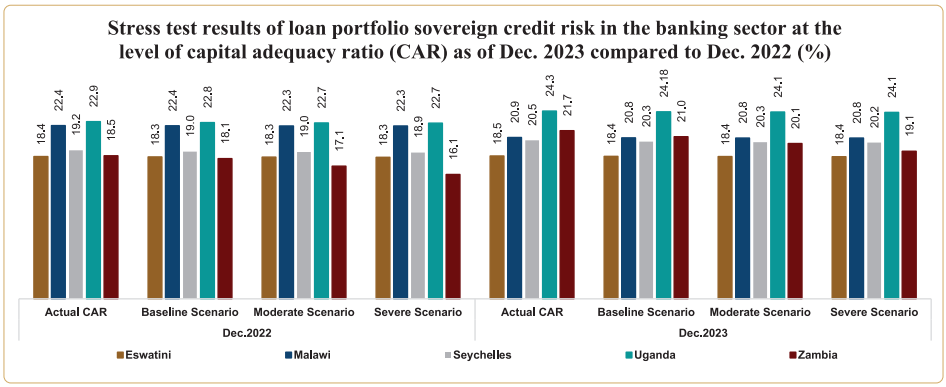
Within the framework of the applied scenario, it was assumed that 10% of the performing loans in the government sector credit portfolio would be in default in the baseline scenario, 20% in the moderate scenario, and 30% in the severe scenario. The defaulted loans shift to the non-performing category of "substandard", which require a corresponding increase in provisions by 20%. It is also assumed that 3% provisions are made for the rest of the performing loans portfolio in the banking sector in five countries (Eswatini, Malawi, Seychelles, Uganda and Zambia) in December 2023 compared to December 2022.

The results of the test have shown the adequacy of capital to absorb the losses resulting from the default by the government sector under the three scenarios in the five countries.[37] This is indicated by the post shock CAR remaining higher than 10.5 percent as required

[37] The banking sector here stands for the aggregate position of the top banks that represent about 80% of banking sector assets.

in Basel III. [38] At country level, the CAR declined by 0.1% in Eswatini, 0.1% in Malawi, 0.3% in Seychelles, 0.2% in Uganda and 2.6% in Zambia in the severe scenario as of December 2023.

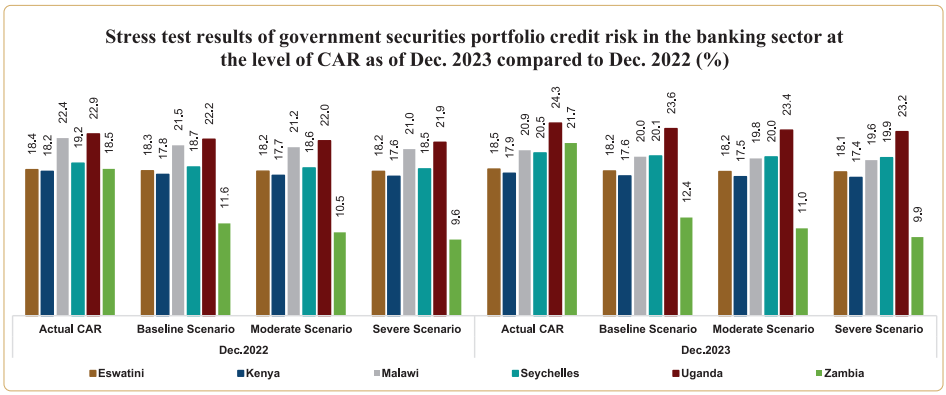
Figure 51: Stress Test Results of Loan Portfolio Sovereign Credit Risk in the Banking Sector



3.*1.2 Investment Portfolio Sovereign Credit Risk*

Additionally, risk weights of 7%, 9% and 11% were applied to the portfolio of government securities in domestic currency for the baseline, moderate and severe scenarios respectively, which includes both treasury bills and bonds, for Eswatini, Kenya, Malawi, Seychelles, Uganda and Zambia. The results show that banks have adequate capital to absorb increase in the risk weights under the three scenarios, where the post shock CAR was higher than the required minimum of 10.5%. The CAR declined by 0.4% in Eswatini, 0.5% in Kenya, 1.3% in Malawi, 0.6% in Seychelles, 1.1% in Uganda and 11.8% in Zambia in the severe scenario as of December 2023.

Figure 52: Stress Test Results of Government Securities Portfolio Credit Risk in the Banking Sector

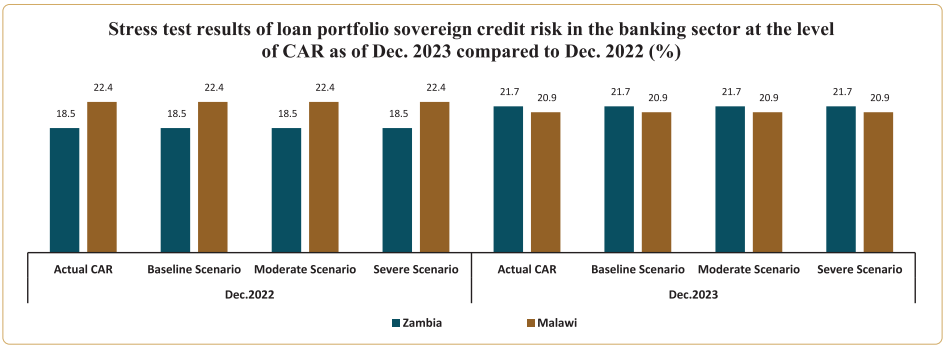


On the other hand, it was assumed that the net non-performing loans and credit facilities of the government sector portfolio in the irregular category "below standard" would increase by 5%, 10% and 15% for the baseline, moderate and severe scenarios

[38] At 10.5%.

respectively, which require an increase in provision by 20% for the banking sector of Zambia and Malawi. The results indicate that banks have adequate capital to absorb losses resulting from impairment of loans to below sub-standard in the two countries, under the three scenarios as of December 2022 and 2023.

Figure 53: Stress Test Results of Loan Portfolio Sovereign Credit Risk in the Banking Sector

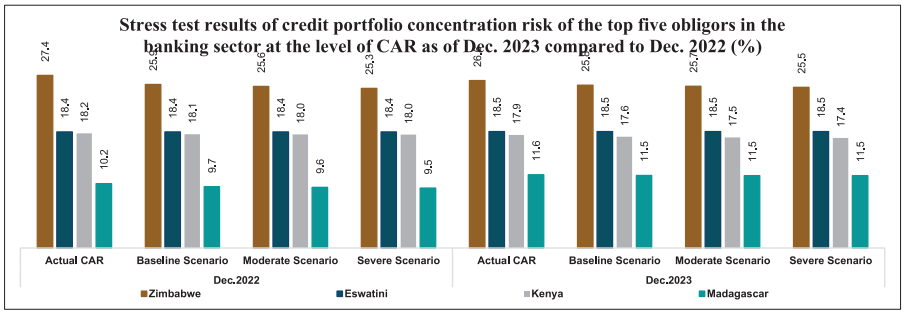


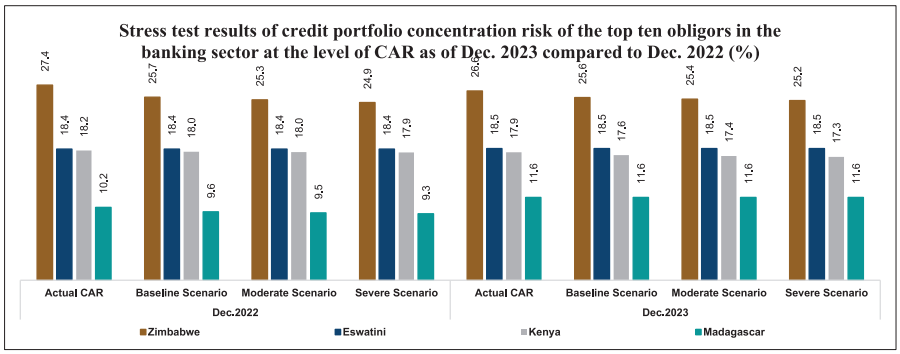
3.2. Credit Concentration Risk

Stress tests for concentration risk were implemented for top credit obligors and their related parties, by assuming a 5%, 10% and 15% of the top five obligors default under baseline, moderate and severe scenarios, respectively and the loan portfolio transitions from performing to substandard. Consequently, banks have to increase provisions by 3% on average for the performing loans and 20% for the rest of the loan portfolio for the top five obligors in the four countries (Zimbabwe, Eswatini, Kenya and Madagascar) in December 2023 compared to December 2022.

The results for the concentration stress test show that the banking sector has adequate capital to absorb the losses resulting from the default of top five obligors in all the scenarios as of December 2023. CAR declined by 1.1% in Zimbabwe, 0.5% in Kenya and 0.1% in Madagascar, respectively in the severe scenario. The top five default had no impact on Eswatini, due to the high provisions as of December 2023. However, the banking sector in Madagascar was not resilient in 2022 to a default by the top five obligors.

Figure 54: Stress Test Results of Credit Portfolio Concentration Risk in the Banking Sector





3.3. Market Risk

Stress tests for market risk include both interest rate risk and foreign exchange risk. For interest rate risk, it was assumed that the interest rate would rise by 5% in the baseline scenario, 7% in the moderate scenario, and 9% in the severe scenario, using data for time to repricing gaps for the banking sector in six countries (Eswatini, Malawi, Seychelles, Zimbabwe, Uganda and Zambia) in December 2023 compared to December 2022. Foreign exchange risk stress test assumed depreciation of the value of domestic currencies in the six countries (Eswatini, Seychelles, Zimbabwe, Zambia, Uganda and Madagascar) against foreign currencies at rates of 10%, 15%, and 20% in the baseline, moderate, and severe scenarios respectively, to assess its impact on the net open position.

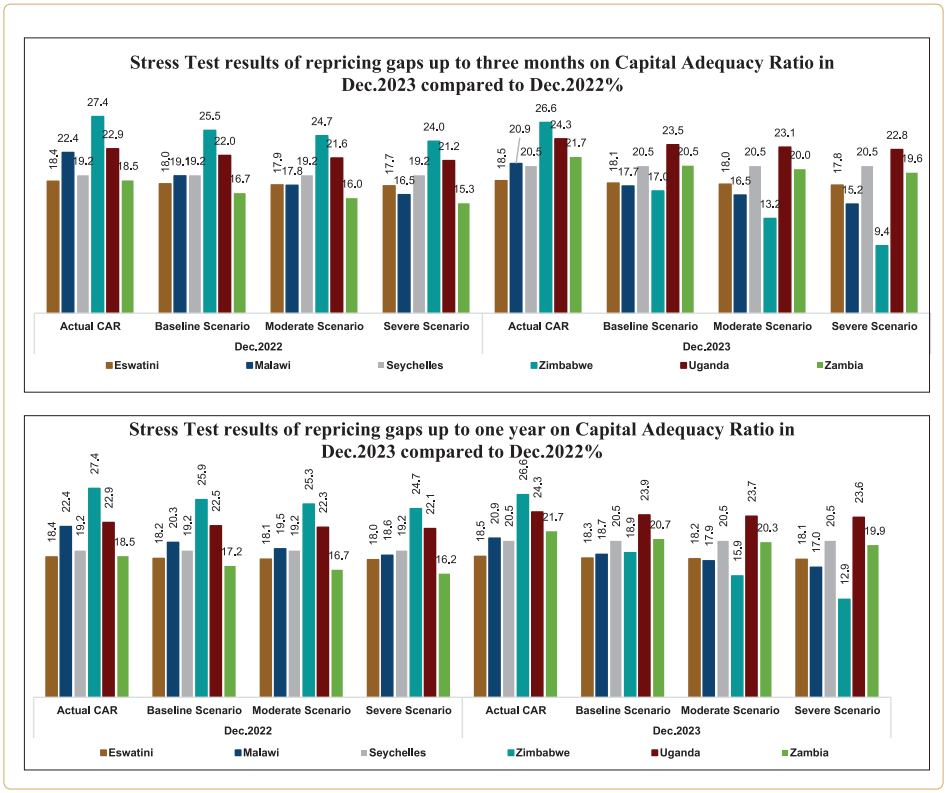
3.3.1 Interest Rate Risk

Interest rate risk stress test was based on the cumulative repricing gaps over the short-term (up to 3 months) and the medium-term (up to 1 year) time buckets. The banking sector in the countries under stress - except Seychelles - have negative repricing gaps in the short and medium-term buckets, resulting in a decrease in CAR as a result of the increase in interest rates, according to the three scenarios.

The results of interest rate stress test indicate that banks have adequate capital to absorb the losses resulting from the rise in interest rate, which led to short and medium-term repricing gaps in the five countries. The post-shock CAR was higher than the minimum

of 10.5% required. However, CAR declined by 0.7% in Eswatini, 1.4% in Malawi, 0% in Seychelles, 7.4% in Zimbabwe and 1.5% in Uganda in the severe scenario related to repricing gaps up to three months as of December 2023 compared to December 2022. CAR also declined by 0.4% in Eswatini, 0.8% in Malawi, 0% in Seychelles, 0.4% in Zimbabwe, 2.1% in Zambia and 0.7% in Uganda in the severe scenario related to repricing gaps up to one year.

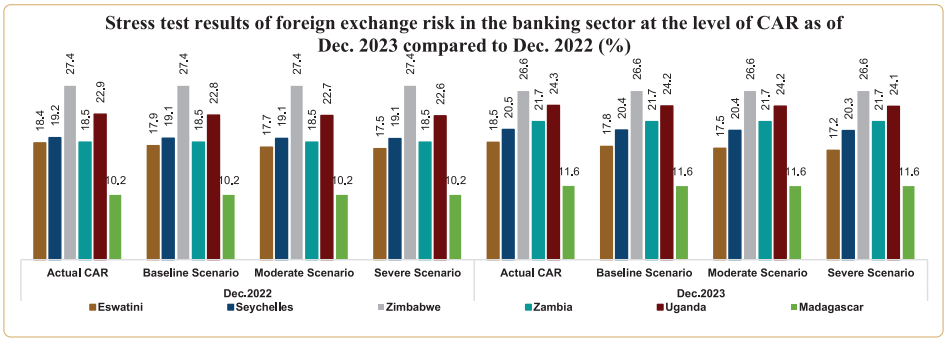
Figure 55: Stress Test Results of Repricing Gaps on CAR in Selected COMESA Countries



3.3.2 Foreign Exchange Risk

The banking sector in the countries included in the foreign exchange stress test except Zimbabwe, Zambia and Madagascar - have deficit in their net open foreign currency positions, resulting in losses in the case of depreciation of the domestic currency in the three scenarios. The results of foreign exchange stress test indicate that the level of capital is adequate to absorb the losses resulting from depreciation of the domestic currency in the three countries, in the three scenarios. The Post-shock CAR was higher than 10.5% required. However, the CAR declined by 1.3% in Eswatini, 0.2% in Seychelles, and 0.2% in Uganda in the severe scenario as of December 2023 as a result of exchange rate depreciation

Figure 56: Stress Test Results of Foreign Exchange Risk in the Banking Sector



4. Conclusion

Stress testing is considered as one of the analytical forward-looking tools of micro- and macro-prudential policy in financial systems, which is used to assess the resilience of banks to risks. In this chapter, a unified macroeconomic scenario was applied at the aggregate level of the largest banks in some COMESA member countries – representing about 80% of the banking sector assets - for assessing their resilience in terms of the adequacy of their capital to cover unexpected losses. The stress tests were, based on actual financial data as of December 2022 and 2023

Stress testing results have shown that the level of capital is adequate to absorb the losses resulting from shocks related to sovereign credit risk for government sector loans and government securities, credit concentration risk for the top five and ten obligors and their related parties, as well interest rate and foreign exchange risks. The post-shock CAR for the majority of countries' banking sectors was higher than that Basel requirements.

CHAPTER 6

IMPLICATIONS OF CLIMATE CHANGE FOR FINANCIAL STABILITY IN THE COMESA REGION

1. Introduction

Climate change and its associated risks and impacts is one of the most critical macroeconomic and financial stability challenges facing the global economy. The physical risk as well as the risk of a disorderly transition to a low-carbon economy could impact the safety and soundness of financial institutions, fuel vulnerabilities in the financial system and give rise to broader financial stability implications (BIS 2021). Moreover, the increased frequency and intensity of extreme weather and climate-related events, and the intense debate about current and future energy policies in many jurisdictions imply that these risks are not temporary and are likely to impact the financial system over the long term. In addition, the financial system is exposed to climate risk through various transmission channels and may also be amplified by the financial system. Policy makers, therefore, need to gain insights into these risks and how they impact the broader economy and financial stability.

This chapter analyses the impact of the risks related to climate change on financial stability based on empirical studies conducted by the COMESA member countries . The studies, overall, show that climate risk could have destabilizing effects on the financial system, such as a rise in credit risk and falling asset prices. This points to the need to effectively assess climate related risks, embed effective risk management practices and strengthen financial system resilience to the risks posed by climate change. [39]

2. Definition of Climate Risk and the Transmission Channels

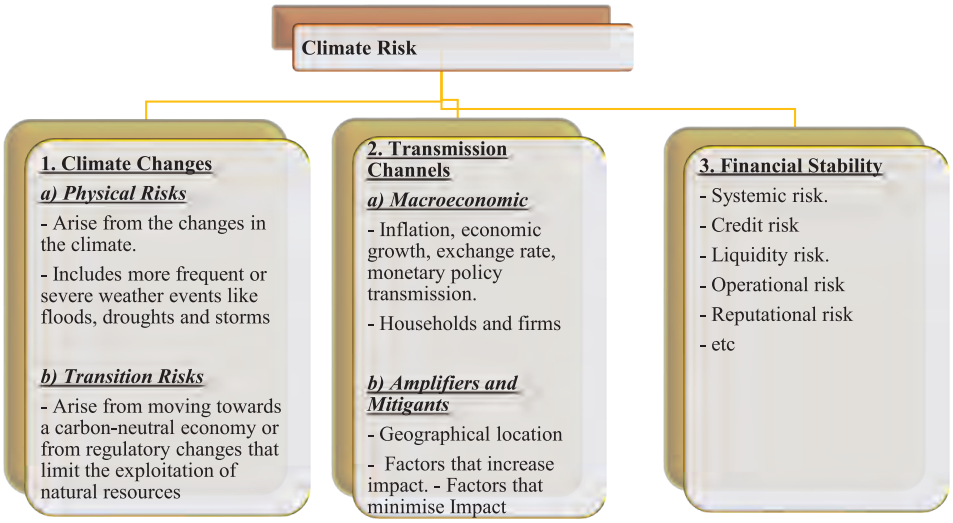
According to the United Nations (2022), climate change refers to the long-term shifts in temperatures and weather patterns. The observed global mean temperature of the Earth has increased by 0.87o C since 1900 (BIS 2021). Previous studies suggest that the rise in greenhouse gas (GHG) emissions in the atmosphere, driven by human activities, is the main cause of climate change, in addition to natural climate variability. This progressive increase in global warming, which will persist if no action is taken, will give rise to climate related changes/risks that impact financial stability and the economy.

Figure 57 presents a framework that illustrates these changes and the channels through which they are transmitted to banks and financial stability. Key highlights of the framework in Figure 57 are described below.

[39] Nine COMESA member countries provided the data and studies on which this chapter is based, namely; Burundi, DRC, Egypt, Kenya, Malawi, Rwanda, Uganda, Zambia and Zimbabwe.

a) **Climate related changes:** These are risks that could give rise to financial stability risks and are broadly classified into two categories, either Physical Risk or Transition Risk. Physical risks arise from the changes in climate or weather events that affect economies and the financial system. These include extreme weather events like floods, droughts, storms, rise in sea level and dwindling ecosystems. Transition risks are the changes in society from transitioning towards a carbon-neutral economy. These risks can stem from, innovation and adoption of new technologies e.g. cleaner energy or reduction in fossil fuels, investor and consumer preferences, and regulatory changes in public sector policies that limit the exploitation of natural resources. Such a transition can pose significant risk and requires substantial investment in every sector of the economy. New technologies and jobs would be needed to reduce energy use, eliminate emissions and restore land.

Figure 57: Climate Risk and Financial Stability



Source: ECB (2022), BIS (2021)

b) Transmission Channels: The climate related risks can materialize and manifest as shocks to the financial system, directly or indirectly, through several transmission channels (BIS 2021). This impact could be through macroeconomic variables such as inflation, commodity prices, exchange rates and monetary policy transmission, and its effect on economic agents such as households and firms. The transmission of physical and transition risks also depends on geographical location as some locations are prone to specific types of risks, as well as the variability of amplifiers or mitigants, which increase or reduce, respectively, the impact of climate risks on financial stability.

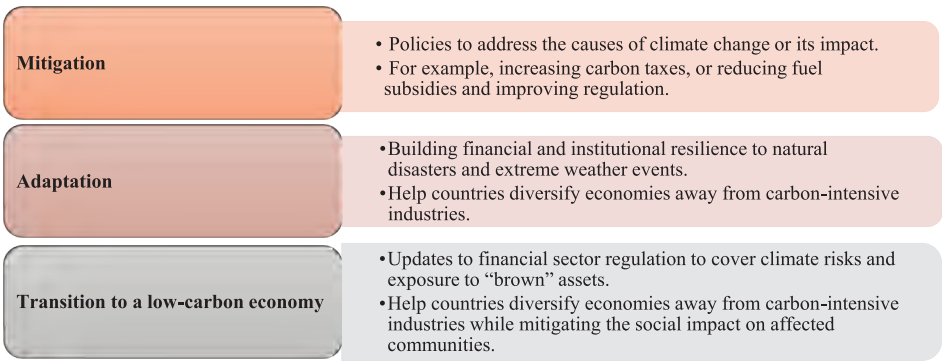
c) Financial stability risks: Climate risks mainly impact financial stability in terms of credit risk, but also market risk, disruption to funding as well as operational and reputational risk (ECB, 2022, BIS 2021. Quantifying the impact of these exposures often requires designing plausible scenarios (NGFS 2022). Both physical and transition risks

can elevate credit risk, for example from collateralized lending since climate-related risks damage physical capital used as collateral security for bank credit while policy changes to lower emissions may negatively affect the credit worthiness of exposed borrowers (ECB/ESRB, 2021). They also affect the value and risk profile of the assets on the balance sheet of financial institutions, resulting in higher risk premia.

For policy makers, the climate risks outlined above give rise to several climate risk policy challenges and responses for the financial sector, which are summarized in Figure 58. Key concepts on the components of responses are also briefly explained.

a) Mitigation: This refers to measures aimed at containing and reducing emissions through policies—such as increasing carbon taxes, reducing fuel subsidies and improving regulation—and tools and financing to help countries achieve their Nationally Determined Contributions (NDCs). In the 2015 Paris Agreement organized under the United Nations Framework Convention on Climate Change, more than 196 countries agreed to a legally binding international treaty on climate change, which established NDCs under which the countries set self-defined national climate pledges, how much they will reduce their GHG emissions towards achieving net zero status, by when, and which actions they will implement to get there. As such, the NDCs detail what countries will do to help meet the global goal to pursue 1.5°C, adapt to climate impacts and ensure sufficient finance to support these efforts.

Figure 58: Climate Risk Policy Challenges and Responses



Source: ECB (2022)

b) Adaptation: This requires building financial and institutional resilience to natural disasters and extreme weather events, and infrastructure investments to cope with rising sea levels and other warming-related phenomena. One key global initiative is the Network for Greening the Financial System (NGFS), which is a network of 114 central banks and financial supervisors. The NGFS plays a key role in scaling up of green finance and developing recommendations on the role of central banks' role in climate change. The NGFS designs a set of hypothetical scenarios that provide a common and up-to-date understanding of how climate change physical risk and climate policy and technology trends related to transition risk could evolve and affect financial stability, under a range of higher and lower risk outcomes.

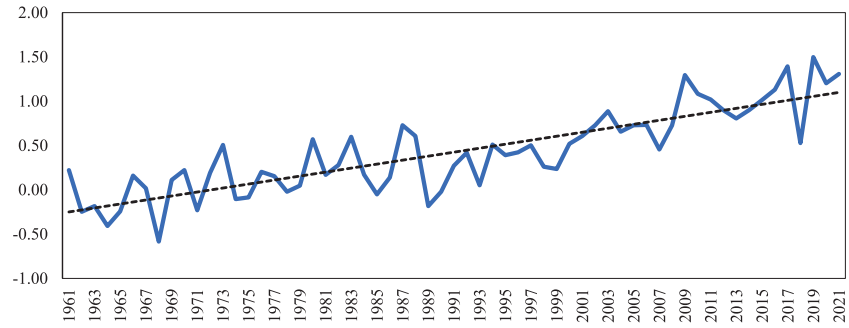
c) **Transition to a low-carbon economy for the financial system.** This includes updates to financial sector regulation covering climate risks and exposure to "brown" assets, as well as measures to help countries diversify economies away from carbon-intensive industries while mitigating the social impact on affected communities. However, the availability of climate financing to ensure the effective implementation of the transition to a low carbon economy remains a challenge (ECB 2022).

3. Stylized Facts on Climate-Related Risks and Climate Financing in the COMESA Region

Climate change has received increased attention in COMESA member countries. However, the exposure to climate risk, causes and responses vary across the region. The data reported by COMESA member countries revealed the following;

a. Reports from the COMESA member countries show that changes in temperature and precipitation and their effect on drought and rising sea levels are the key drivers of climate and weather-related disasters. For example, in Kenya, the annual temperature changes averaged 1.3o C in 2021, having increased by an estimated rate of 0.21o C per decade and projected to reach 1.5o C in 2030 under business-as-usual scenario (World Bank, 2021; GOK, 2021a), while in Rwanda records from 1971 to 2016 show rises in mean temperature of between 1.4°C and 2.56°C (Figure 59). These changes have resulted in more frequent and extreme weather events ranging from droughts, sea level rise, floods and landslides, and outbreak of pests and diseases. However, there are discernible variations in the region. In Rwanda, Kenya, DRC and Uganda, the main challenges are associated with variable rainfall patterns and precipitation which are highly erratic, and lead to flooding, landslides, and long dry spells. On the other hand, in Malawi, Zambia and Zimbabwe drought is the major event associated with climate change. In Egypt, the climate change effects include a rise in the sea level that may reach about 1.0 meters by 2100 and could lead to the sinking of at least 1% of the area of Egypt, reduced groundwater reserves, and increased salinity in some areas, migration of some fish species, desertification, erosion of inscriptions on historical monuments and temple walls, and others. As a result, the Nile Delta in Egypt is considered one of the three hot points that are highly vulnerable to climate change risks in the world.

Figure 59: Climate Change Indicators: Temperature in Kenya



Source: FAOSTAT and World Bank (2021)

b. The Greenhouse Gas (GHG) emissions of the COMESA member countries are relatively low in comparison to the global levels, however they are rising and require policy action. The total annual GHG emissions of the COMESA region in 2022 amounted to 1,255.20 million metric tons of carbon dioxide equivalent (MtCo2eq/year), accounting for 2.22 percent of the global GHG emissions of 53,786.03 MtCo2eq/year (EC Edgar Database 2023). A breakdown by member country is shown in Table 4, which indicates that the top countries accounting for the regional GHG emissions were Egypt with 30.1 percent or 377.79 MtCo2eq/year, followed by Ethiopia and Sudan with 15.3 percent (192.474 MtCo2eq/year) and 11.7 percent (146.9 MtCo2eq/year), respectively. The sectors that are the largest contributors to GHG emissions in the COMESA member countries are Agriculture, Fuel Exploitation (including mining and deforestation) and Energy. However, there are variations between member states. In Egypt, which accounts for the largest share of GHG emissions in the region, the energy sector is the largest contributor of total emissions. However, in Ethiopia, Sudan and Kenya, Agriculture accounts for the largest share of total national emissions followed by Energy.

Table 4: GHG Emissions by Country in the COMESA Region, 2022

Country	GHG Emissions (MtCO2eq/ year).2022	Share of COMESA Region	Top Three Sectors
Burundi	7.48	0.596	Buildings, Agriculture, Waste
Comoros	0.922	0.073	Agriculture, Waste
Congo DR	61.635	4.910	Fuel Exploitation, Buildings
Djibouti	2.232	0.178	Agriculture, Transport, Waste
Egypt	377.79	30.098	Energy, Industrial Combustion, Transport
Eritrea	6.952	0.554	Agriculture, Waste
Eswatini	3.387	0.270	Agriculture, Transport
Ethiopia	192.474	15.334	Agriculture, Buildings
Kenya	117.895	9.393	Agriculture, Fuel Exploitation, Transport
Libya	104.514	8.327	Fuel Exploitation, Power Industry, Transport
Madagascar	34.98	2.787	Agriculture, Waste
Malawi	20.919	1.667	Agriculture, Industry, Power Industry
Rwanda	9.032	0.720	Agriculture, Buildings, Waste
Seychelles	1.199	0.096	Transport, Power Industry
Sudan (Includes South Sudan)	146.955	11.708	Agriculture, Transport
Tunisia	49.82	3.969	Power Industry, Industrial Combustion
Uganda	56.49	4.500	Agriculture, Fuel Exploitation, Transport
Zambia	30.331	2.416	Agriculture, Fuel Exploitation, Industrial Combustion
Zimbabwe	30.19	2.405	Agriculture, Power Industry, Buildings
Total	1,255.20	100.0	

Source: EC Edgar Database (2023)

c. Climate Policies: The COMESA member countries covered in this study have committed to addressing climate change by ratifying the United Nations Framework on Climate Change (UNFCC) and signing the 2015 Paris Agreement. In Egypt, a National Strategy for Adaptation to Climate Change and Disaster Risk Reduction was established and is under implementation, while the Central Bank has implemented the Sustainable Banking and Finance Network (SBFN) sustainable finance practices in the banking sector. Egypt, Kenya, Zambia, Zimbabwe and Rwanda have also issued guidelines on climate risk to banks and started conducting scenario analysis and stress testing of climate risks on financial stability.

d. Despite low levels of greenhouse gas emissions, all the COMESA member countries have set in place National Climate Change Action and Nationally Defined Contribution Plans under the Paris Agreement. These plans commit to mitigate climate risks, reduce GHG emissions and put in place effective transition strategies. For example,

Kenya committed to emission reduction potential of 86 MtCO2e by 2030 (GOK, 2021a). However there remains a gap between the estimated and required resource requirements to effectively implement the NDCs. This calls for scaling-up the public and private climate finance in order to meet the targets outlined in the Nationally Determined Contributions (NDC). For example, in Kenya, the resource requirements during 2020-2030 is USD 17.7 billion of which USD 3.7 billion (21 percent) is to be sourced from the domestic economy (GOK 2021a). In Rwanda, the total required investment for the identified NDC mitigation measures for the period 2020-2030 is estimated at around USD 5.7 billion and over USD 5.3 billion for adaptation priorities, accounting for a combined funding requirement of USD 11 billion of which 40% is domestically funded and 60% is from internationally (Conditional) sources.

e. Sustainable climate financing from the banking sector in the COMESA member countries remains low in comparison to the global average. In Kenya it was estimated at USD 2.4 billion in 2018 and is mainly sourced from external loans and grants from international partners at 59.4 percent (GOK, 2021b), while investment from the private sector and the banking sector remains low at USD 276 million (11.3 percent) in Kenya.

4. Findings from Empirical Studies by COMESA Member Countries on Impact of Climate Change for financial stability

All the empirical studies by COMESA member countries undertaken in 2023 focused mainly on the impact of physical risks for financial stability and less on transition risk. This was expected given that physical risks are projected to be the main source of risk from climate change for financial stability in the region. A review of the empirical studies showed both similarities as well as varied results on the implications for climate change for financial stability across the region. A summary of the studies is provided below.

a. The empirical studies showed that in all COMESA member countries climate change has a negative relationship with financial stability. However, the channels through which this impact is felt vary across the region.

b. In terms of the impact on aggregate financial stability, some studies showed that climate change has a long-run negative effect on financial stability. In Malawi the banking stability Index falls by 0.14 units for every unit increase in the climate change index. In Zimbabwe and Zambia, rainfall variability and increase in temperature were found to have a negative and significant relationship with the level of financial stability as measured by the Z-score. However, results from DRC showed that in the long term, CO2 has both positive and negative consequences on financial stability, whereby in the short term, fluctuations in CO2 emissions from activities such as oil extraction, agriculture, manufacturing, deforestation, and land degradation generate more pronounced negative impacts on financial stability than positive ones; while the effect of carbon dioxide is favourable to financial stability at lower levels (0.36), but turns negative at levels above a higher threshold (0.50).

c. By sector, the main impact appears to be through credit risk. The empirical results indicated a statistically significant adverse impact of temperature changes and rainfall

variability on credit risk as measured by non-performing loans (NPLs) across several countries including Kenya, Rwanda, Uganda, Zambia and Egypt. For example, in Rwanda, climate related NPLs have a reducing effect on bank performance, and by extension, financial stability, i.e., high borrower default is closely linked to a higher probability of bank insolvency. Similarly, in Kenya, there is adverse impact of temperature changes and rainfall variability on bank stability and credit risk arising from non-performing loans. In Zambia, increases in climate change leads to higher credit risk, albeit with a lag for extreme temperatures but contemporaneous for extreme rainfall. This effect is supported by contemporaneous stress testing results from Egypt which reveal vulnerability of the banking sector to credit risk from climate change as the probability of default increases in moderate, severe, and extreme temperature changes.

d. Some studies took a different approach by modelling the impact of climate risk on credit demand and supply behaviour. In Uganda, the results showed that creditors respond to climate shocks by adjusting their risk assessments and reducing credit provision, while debtors face exclusion from credit markets, resulting in increased credit needs and the exploration of alternative financing mechanisms. There is also significant disparities in the demand and supply of credit across sectors in the event of climate shocks, which exacerbate inequalities in coping potential, and multi hazard environments such as coexistence of climate shocks along covid 19 shocks amplify credit constraints. When multiple shocks occur in succession, the behaviour of credit markets is rather influenced by the cumulative impact of the shocks; and while an isolated climate shock causes credit hoarding, successive shocks have the effect of partly anchoring creditor behaviour.

e. Adverse climatic patterns also lower commercial banks' profitability with a lag such as in Zambia. In addition, the effect varies by bank size with bigger banks able to implement better risk management frameworks, enabling them to deal more effectively with climate related bad loans. This is on account of the fact that a bigger balance sheet allows for more diversification of portfolio assets, which lowers credit risk, increases profitability, and augments solvency.

f. The findings also pointed to a potential conflict between the price and financial stability mandates at central banks, which could affect the policy response to climate risks. For example, inflationary pressures arising from physical risks such as drought, may necessitate policy tightening by central banks, however this could amplify financial stability risks. For example, in Malawi, the banking stability index falls by 0.02 units for every one percentage point hike in the policy rate. In Zambia, an increase in interest rates triggers a rise in the debt burden, and subsequently weakens borrowers' debt servicing capacity leading to higher NPLs.

5. Recommendations

All the empirical papers concluded that climate change has a significant negative impact on financial stability, especially by increasing credit risk, and the probability of defaulting increases in moderate, severe, and extreme climate changes. Thus, the following are the key policy recommendations which emanate from the reports and empirical studies provided by the COMESA member countries:

a. Central Banks should work with governments and other stakeholders to implement policies and strategies aimed at mitigation, adaptation and transition for climate change. This will facilitate the reduction in carbon emissions towards net zero, address the negative outcomes from physical and transition risks and enhance public awareness.

b. Adjust internal Central bank operations and risk assessment capabilities in COMESA member countries to address climate risk, including managing climate risk exposures on the central Bank balance sheet, and accounting for the impact of climate change in the monetary policy implementation framework.

c. Prudential authorities should update their macroprudential policy frameworks to ensure robust assessment and mitigation of systemic risks from climate change for financial stability. This includes establishing effective policy tools and exploring new approaches such as sectoral capital charges for sectors that are highly exposure to climate change.

d. Enhance climate risk modelling to assess the impact of climate change on financial stability and the economy. Conduct regular stress tests on the Central bank balance sheet, supervised banks and the economy, to understand and manage exposure to climate-related risks under diverse climate risk scenarios, as well as related systemic risks to the financial system. This will facilitate appropriate policy formulation.

e. Enhance the compilation and publication of indicators to improve the quality and availability of climate data that serves as a critical input into the necessary monitoring and regulation of climate risk. A starting point could be the adoption of the climate scenarios developed by the Network for Greening the Financial System (NGFS) [40]. In addition, establishment of a national system for monitoring, reporting, and verification of climate-related data would help to build collective resilience, and accelerate the adoption of climate-awareness policies to increase transparency and investor confidence.

f. Ensure that banks and the financial system manage climate-related risk effectively. Supervisory authorities should ensure that banks can identify, assess and manage climate-related and environmental risks properly, and that they are transparent in disclosing the risks to which they are exposed. Thus, commercial banks should entrench climate change mitigation and adaptation strategies, enhance risk

[40] https://www.ngfs.net/ngfs-scenarios-portal/
The Network for Greening the Financial System is a network of 114 central banks and financial supervisors that aims to accelerate the scaling up of green finance and develop recommendations for central banks' role for climate change.

assessment in their frameworks for climate change and have robust governance for climate risk monitoring.

g. Considering that traditional stress testing approaches are unsuitable for measuring climate change-related risks, supervised financial institutions should be required to develop and conduct climate risk modelling and stress tests to help assess the extent of banks' vulnerability to climate change.

h. Central banks should collaborate with commercial banks and other stakeholders to ensure adequate availability of sustainable climate financing while managing financial stability risks. This includes strengthening synergies between private and public sustainable financing of targeted priority projects. Regulators should also spearhead targeted green financial policies that mitigate climate risks, to reduce the financial risks posed by climate-related natural disasters, but also to offset the financial risks posed by the transitioning to a low-carbon economy. This includes credit support schemes such as agricultural insurance schemes, promoting sustainable investments, agricultural credit facilities and personal consumption credit guarantees to protect debtors at risk of financial exclusion from climate related impacts. Sectors that amplify climate shocks need to be prepared for transition through early introduction of incentives. This will not only mitigate the physical risks of climate change, but also the financial risks brought about by the rapid conversion to a low-carbon economy.

i. Fully implement the mitigation measures contained in the Nationally Determined Contribution (NDC) initiatives, by fully funding the associated activities, financing adaptation and mitigation measures, build capacity and enhancing technology transfer.

j. Encourage investments in green technologies and sustainable industries and strategies to drive afforestation and economic growth, reduce carbon emissions, and bolster financial stability simultaneously.

k. There is need for increased collaboration among financial institutions, regulators, and policymakers to share best practices and knowledge in managing climate-related risks;

l. Enhance capacity building for both financial institutions and business owners to ensure that the right financing is available for climate mitigation projects and that these projects are financially feasible.

m. Promote technological transfer from developed to developing countries to increase resource efficiency and enable cleaner production. In addition, urgently establish the necessary technical and financial capacity to conduct better research on climate change risks specific to the COMESA member countries, the transmission channels and to quantify the size of financial risks; and

n. A careful consideration of the implications of monetary policy decisions on financial stability and the nexus therein for climate risk. Thus, balancing the price stability and financial stability objectives of the central bank is required to avoid an unintended impact of necessary monetary policy actions for climate risk, on financial stability.

6. Conclusion

Climate change and climate change policies have significant "macro-critical" impacts to the economy and the financial sector in the COMESA member countries. Central banks and other policy makers have an important role to play in preventing and mitigating those impacts. Thus, there is need to enhance the assessment of these risks, mitigation and adaptation of risks and the management and mobilization of investment for the transition to a carbon-neutral society, so as to safeguard financial sector stability.

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APPENDEX 1: FINANCIAL STABILITY MANDATE IN COMESA MEMBER COUNTRIES CENTRAL BANKS LAWS

Burundi	Article 6 of the Central Bank Status: By its statutes, the B.R.B. has as its fundamental mission the definition and implementation of a monetary and exchange policy. To this end, it ensures the maintenance of monetary stability and the pursuit of a credit and exchange policy conducive to the harmonious development of the country's economy (art. 6 of law No. 1/34 of December 2, 2008).
Egypt	Article 7 of the Central Bank and the banking sector law no 194-2020 stipulates authorizing the Central Bank of Egypt to set and implement the macroprudential policy for the banking sector.
Eswatini	Central Bank of Swaziland Order, 1974 Section 4 (g): to supervise banks, credit institutions and other financial institutions to the end of promoting a sound financial structure.
Kenya	The mandate and objects of the Central Bank of Kenya are provided for under Sections 4 and 4A of the Central Bank of Kenya (CBK) Act, which set out the Bank's objects as follows: i. To formulate and implement Monetary Policy directed to achieving and maintaining stability in the general level of prices. ii. To foster the liquidity, solvency and proper functioning of a stable market-based financial system. iii. To support the economic policy of the Government including its objectives for growth and employment.
Madagascar	Article 5 of Law no. 2016-004-of-29-july-2016 Stipulates that without prejudice to the first objective, the Central Bank contributes to financial stability and solidity of the financial system of the Republic of Madagascar.
Malawi	Section 4(1) of the Reserve Bank of Malawi Act provides that "The Primary objective of the Bank shall be to maintain price and financial stability. Section 4(2) reads "In case of conflict between price and financial stability, the price stability objective shall take precedence."
Mauritius	By virtue of section 4(2)(b) of the Bank of Mauritius Act 2004, the Bank of Mauritius is mandated to ensure the stability and soundness of the financial system of Mauritius. In addition, effective August 5, 2021, the Bank of Mauritius was formally designated as the macroprudential authority of Mauritius as per Section 5(1)(ba) of the Bank of Mauritius Act 2004.
Rwanda	The National Bank of Rwanda (NBR) was established in 1964 with the aim of issuing the Rwandan currency named Franc Rwandais (Frw). Over the years, the role of the NBR has evolved. The current Law N°48/2017 of 23/09/2017 as amended to date, confers a clear mandate on the NBR with a mission of ensuring price stability and a sound financial system. Price stability is achieved by conducting appropriate monetary policy in the interest of a stable macroeconomic environment, while financial stability is achieved by regulating and supervising the financial system.
Seychelles	Financial Stability Act 2023.
Tunisia	The mandate is to contribute in the maintaining of financial stability (law n°2016-35 article 7)
Uganda	Article 5 (and 4): Powers of the bank. Subject to the Bank of Uganda Act, the bank shall have all the powers pertaining to a legal person and may do all things necessary for better carrying out its functions [Article 4(j) -supervise, regulate, control and discipline all financial institutions]
Zambia	Bank of Zambia,2022, Sections 5(1), 31 (2) (3) (4) The Bank of Zambia (BoZ) is the Central Bank of the Republic of Zambia and derives its functions and powers from the Bank of Zambia Act, No,5 of 2022 and the Banking and Financial Services Act, Chapter 387 of the Laws of Zambia. The Mission Statement of the Bank is to achieve and maintain price and financial system stability to foster sustainable and inclusive economic development.
Zimbabwe	As per the Reserve Bank of Zimbabwe Act [22:15] section 6 (c), the Reserve Bank's functions are to foster the liquidity, solvency, stability and proper functioning of Zimbabwe's financial system.

APPENDEX 2: MACROPURDENTIAL POLICY TOOLKIT IN COMESA MEMBER COUNTRIES

	Burundi	DRC	Egypt	Eswatini	Kenya	Madagascar	Mauritius	Rwanda	Seychelles	Sudan	Tunisia	Uganda	Zambia	Zimbabwe
Capital-Based Tools														
Countercyclical capital buffers	P	E	-	P	P	-	-	E	-	-	-	D	D	-
Sectoral capital requirements	-	P	D	P	P	-	D	D	-	-	-	-	E	-
Dynamic provisions	-	P	-	P	D	-	-	E	-	-	D	-	P	P
The capital buffer for concentration risk	-	P	D	P	D	-	D	E	-	-	-	-	E	-
Capital Buffers for DSIBs	P	E	D	P	P	-	D	D	-	-	-	D	E	D
Capital Conservation Buffer	D	E	D	P	D	-	D	D	-	-	-	D	E	-
Asset-Side Tools														
Leverage ratios	D	D	D	P	D	-	-	D	D	-	-	D	E	D
Loan-to-value ratios	-	P	-	P	-	-	D	D	D	D	D	D	P	-
Loan-to-income ratio	-	P	-	P	-	-	-	-	-	-	-	-	P	-
Debt service-to-income ratios	-	P	D	P	-	-	D	D	-	-	D	-	P	-
The ceiling of loans in foreign currency	-	P	-	P	-	-	-	D	-	P	-	-	P	-
The ceiling of bank placements in foreign financial institutions	-	P	D	P	-	-	-	D	-	-	-	-	E	-
The ceiling of bank placements by country	-	P	D	P	-	-	-	D	-	-	-	-	-	-
Maximum credit concentration per Obligor	D	P	D	P	D	-	D	D	-	D	D	D	E	D
Maximum credit concentration of an obligor and his related parties	D	P	D	P	D	-	D	D	-	D	D	D	E	D
Maximum Credit Concentration by Sector	E	P	D	P	-	-	-	-	-	-	-	-	-	-
Liquidity-Based Tools														
Liquidity coverage ratio	D	P	D	P	-	D	D	D	-	-	D	D	P	D
Net stable funding ratio	P	P	D	P	-	D	P	D	-	-	-	D	P	-
Margins and haircuts in markets	E	-	-	P	D	-	-	-	-	-	D	-	-	-
Banks' Reserve Requirement	D	E	D	P	D	-	D	-	D	D	-	-	D	D
Additional Liquidity requirements for D-SIBs	P	P	-	P	-	-	-	-	-	-	D	-	P	-
Market-Based Tools														
Net open position (single currency and all currencies)	-	E	D	-	D	-	D	-	D	-	D	D	D	D
Note: P= Tool in process of establishment. E= Tool established and ready for deployment in case of risk. D= Tool deployed.														

APPENDIX 3: FINANCIAL STABILITY FRAMEWORK INDEX (FSFI) COMPONENTS

Sub-index	Items
Institutional Arrangements	1. Presence of an autonomous financial stability committee 2. Legal Basis of the Committee 3. Mandate of the committee and coordination with macroeconomic policies 4. Presence of a financial stability department 5. Focus on financial stability objective 6. Location of the department in central bank hierarchy 7. Coordination with departments within the Central Bank 8. Coordination with agencies outside the Central Bank
Definitions, Objectives and Scope	9. Formal Macroprudential policy framework 10. Financial Stability definition 11. Macroprudential policy definition 12. Systemic risk definition 13. Intermediate objectives 14. Scope of macroprudential policy
Financial Stability Assessment	15. Identification of structural systemic risks 16. Identification of cyclical systemic risks 17. Use of analytical tools 18. Stress test implementation 19. Policy decisions based on assessment results
Macroprudential Policy Toolkit	20. Establishment and employment of capital-based tools 21. Establishment and employment of asset-side tools 22. Establishment and employment of liquidity-side tools 23. Establishment and employment of market-side tools 24. Objective of tools deployment
Communication and Accountability	25. Institutional and legal arrangements (Central Bank's Website) 26. Macroprudential Policy Strategy (policy document) 27. Systemic risk assessment (Financial Stability Report) 28. Policy decisions (records of meetings) 29. Follow up on the implementation and impact of the policies

APPENDIX 4: EXAMPLES OF MICRO STRESS TESTS IMPLEMENTED BY COMESA MEMBER COUNTRIES

The following provides an overview of the micro stress testing exercise conducted by each COMESA member countries, as published in their respective latest available Financial Stability Report. Responses to the latest questionnaire received by member countries are also reflected below.

Country	Last FSR	Data	Types of shocks tested	Results type
Burundi	2022	Dec 2022	Credit risk Liquidity risk	Quantitative
Eswatini	June 2023	June 2023	Credit risk Liquidity risk	Quantitative, Qualitative
Malawi	Dec 2023	Dec 2023	Credit risk Interest rate risk Foreign exchange risk Income risk Liquidity risk	Quantitative, Qualitative
Mauritius	June 2024	Dec 2023	Credit risk Liquidity risk	Quantitative, Qualitative
Rwanda	June 2022	Dec 2023	Liquidity risk	Qualitative
Zimbabwe	2022	Dec 2022	Credit risk Liquidity risk	Qualitative

1) Burundi

Burundi conducted a stress test to assess the resilience of 15 credit institutions to credit risk and liquidity risk, based on 2022 data. On credit risk, 4 types of shocks were simulated in a severe scenario:

Types shocks	Assumption	Results
Provisioning readjustment shock	1.5 times more than the existing provisioning level is assumed	3 credit institutions could not withstand this shock
Proportional increase shock in nonperforming loans	Additional provisioning is assumed following a hypothetical migration of 50% from performing loans to non-performing loans	3 credit institutions could not withstand this shock
Sectoral deterioration shock	Additional provisioning is assumed following a hypothetical deterioration of 30% in each sector of activity	2 credit institutions could not withstand this shock

Deterioration of large debtors	Additional provisioning of 75% is assumed following a hypothetical deterioration of the 3 largest debtors per credit institution	8 credit institutions could not withstand this shock, with 2 of them having a very concentrated credit portfolio

Regarding liquidity risk, a sustained withdrawal was simulated for 5 consecutive days, as follows:

<table>
<tr><th colspan="2">Assumption:
withdrawals per day over 5 consecutive days</th><th colspan="2">Results</th></tr>
<tr><td colspan="2">Current deposits</td><td rowspan="6">Up to 3 days:
On the 4th day:
On the 5th day:</td><td rowspan="6">no failure
1 failure
2 failures</td></tr>
<tr><td>Local currency</td><td>Foreign currency</td></tr>
<tr><td>15%</td><td>10%</td></tr>
<tr><td colspan="2">Term deposits</td></tr>
<tr><td>Local currency</td><td>Foreign currency</td></tr>
<tr><td>3%</td><td>1%</td></tr>
</table>

2) Eswatini

Types shocks	Assumption	Results
Credit		
Default by the Largest Borrowers	Default by the largest borrowers and a 100% provisioning requirement	The first bank fall under the 8% capital adequacy regulatory minimum after default by the top eight largest borrowers, which is better than the previous year where it took only five large exposures.
Liquidity		
Simulated bank run	Withdrawals over a number of days without resorting to external support, assuming a daily withdrawal rate of 5.0 percent on demand and savings deposits and 2.5 percent on term deposits.	1st bank's liquidity would be depleted after 10 days of distress
Withdrawal by Systemic Largest Depositor	Default by the largest borrowers. Eswatini banking system's largest depositor has holdings with two banks	1 bank will breach the regulatory minimum liquidity requirement if the depositor decides to withdraw from both banks and invest elsewhere

3) Malawi

Overall, the stress testing exercise exhibited resilience of the Malawi banking sector to majority of the shocks including successive default of large borrowers, haircuts on liquid assets, interest rate risk, foreign exchange rate risk and income risk. Notwithstanding, the exercise also revealed some vulnerabilities to credit risk shocks on economic sectors, and the overall combination of shocks.

Types shocks	Assumption	Results
Solvency		
Credit risk: Effects of increase in NPLs per economic sectors	Defaults in economic sectors at distinct default rates per sector which were progressively applied from minor, to moderate and major shock scenarios.	The sector CAR fell below regulatory minimum of 11.2% in the moderate and major shock scenarios. 5 banks sustained core capital ratios above 10.0% limit in the minor shock scenario, 3 banks in the moderate shock scenario and 1 bank in the major shock scenario.
Credit risk: Effect of Large Borrowers Defaulting	Successive default of the top five borrowers, while assuming an impairment provisioning rate of 50.0 percent on new NPLs.	The banking sector was resilient to the shock up to the successive default of the top 3 borrowers as core capital reduced to 10.5%. However, the sectors core capital ratio declined to 9.4% and 8.6% following the successive default of the top 4 and 5 borrowers. 4 out of 8 banks demonstrated resilience to the shock by reporting core capital ratios above the 10.0% regulatory minimum in all shock scenarios.
Interest rate shocks: Fluctuations in interest rates by measuring its impact on the balance-sheet net interest rate sensitivity gap	Upwards and downwards shifts in interest rates, particularly by 5.0 percentage points; 10.0 percentage points; and 15.0 percentage points in the minor, moderate and major shock scenarios, respectively	The banking sector was resilient to all shock scenarios. 1 bank's core capital ratios increased while 7 banks' core capital ratios declined as interest rates rose. Conversely, 7 banks progressively increased in core capital ratios while core capital ratio for the remaining 1 bank declined as interest rates decreased.

Exchange rate shocks: Depreciation of the Kwacha against major trading currencies	Depreciation rates of 50.0 percent, 75.0 percent and 100.0 percent were adopted for minor, moderate and major shock scenarios, respectively	Stress test results indicated that depreciation of the Kwacha against major trading currencies would result in increase of core capital ratio for the sector. This is attributed to the sector's net long position in foreign currency. Conversely, appreciation of the Kwacha against major trading currencies implied a decline in the sector's core capital. On a solo bank level, all core capital ratios increased as the Kwacha depreciated against major trading currencies except for 2 banks, nonetheless, core capital ratios for all banks remained above the prudential limit.
Income shock: Impact of declines in both interest income and non-interest income on the sector's core capital ratio and ROA	Decline of a 10.0% and 15.0% in the minor shock scenario; 15.0% and 20.0% in the moderate shock scenario; and 20.0% and 25.0% in the major shock scenario, for interest and non-interest income, respectively	The sector was resilient to shocks on income. 4 banks were resilient in all shock scenarios. The other four banks however succumbed to at least moderate-income shocks. The sector was resilient as ROA remained above 1.0 percent even after a major shock scenario. Individually, 6 of the 8 banks survived the income shocks by maintaining ROA above 1.0 percent in the major shock scenario.

Combination of Shocks	4 shocks were covered namely; credit shock on economic sectors, foreign exchange rate risk, increasing interest rate risk, and autonomous shocks to income	The sector was vulnerable to the shock as core capital ratio declined below the regulatory benchmark in all shock scenarios. Particularly, core capital ratio declined to 5.5 percent, 0.3 percent and negative 8.2 percent in the minor, moderate and major shock scenarios, respectively. Credit risk shocks had the largest impact on core capital, seconded by income risk; while impact of interest rate risk and foreign exchange rate risk shocks were minimal. Similarly, all banks individually succumbed in all the combination of shocks scenarios as each bank registered core capital ratios below the regulatory limit.
Liquidity		
Hair-cuts to liquid assets while measuring the impact on liquidity ratios	The severity of shocks was applied progressively at both bank-specific and system-wide level.	The sector was resilient to this shock as liquidity ratios remained well above the prudential limit of 25.0 percent in both system-wide and bank-specific major shock scenarios at 44.2 percent and 46.8 percent, respectively. Individually, all banks were resilient to this shock as they sustained liquidity ratios above the prudential limit in all shock scenarios.
Simulation of deposit runs at different rates and measuring the number of days banks would stay afloat before exhausting all its available liquid assets	Daily deposit run-off rates were set at 10.0%, 20.0% and 30.0% for minor, moderate and major shock scenarios, respectively and were simulated with corresponding hair-cuts with results measured against a benchmark survival period of five days.	The stress results revealed that the sector was resilient only at a 10% deposit run. 6 banks met customer demand for deposits in the minor case scenarios at bank specific level while 5 banks managed a system-wide scenario. Beyond the minor shock scenarios, only 1 bank survived the moderate shock scenario in both system-wide and bank specific cases. No banks survived the major shock scenarios.

4) Mauritius

<table>
<tr><th>Types shocks</th><th>Assumption</th><th>Results</th></tr>
<tr><td>Credit</td><td></td><td></td></tr>
<tr><td>Credit risk: sectoral sensitivity</td><td>Additional impairment in the credit portfolios of the seven largest sectoral portfolios: (i) 4 per cent in the baseline scenario, (ii) 8 per cent in the moderate scenario, and (iii) 12 per cent in the severe scenario.</td><td>The banking sector and all individual banks were resilient, both based on December 2023 figures and for the forecasted quarter ended June 2024.</td></tr>
<tr><td>Credit risk: concentration sensitivity</td><td>Cumulative default of the top ten single borrowers for each bank.</td><td>The banking sector and all individual banks were resilient, both based on December 2023 figures and for the forecasted quarter ended June 2024.</td></tr>
<tr><td>Cross-border sensitivity</td><td>The average historical impairment ratio in each of these jurisdictions was applied as the baseline shock to the performing cross-border credit portfolio. For the moderate and severe scenarios, the average historical impairment ratio was amplified by 1.5 times and 2 times, respectively.</td><td>The banking sector and all individual banks were resilient.</td></tr>
<tr><td colspan="3">Liquidity</td></tr>
<tr><td>A sudden exodus of deposits held per counterparty</td><td><table>
<tr><th>Deposit outflows (in per cent)</th><th>Household and Corporate</th><th>GBC and Non-resident</th></tr>
<tr><td>Baseline</td><td></td><td></td></tr>
<tr><td>Rs</td><td>10</td><td>20</td></tr>
<tr><td>FX</td><td>25</td><td>25</td></tr>
<tr><td>Moderate</td><td></td><td></td></tr>
<tr><td>Rs</td><td>20</td><td>30</td></tr>
<tr><td>FX</td><td>35</td><td>40</td></tr>
<tr><td>Severe</td><td></td><td></td></tr>
<tr><td>Rs</td><td>30</td><td>50</td></tr>
<tr><td>FX</td><td>45</td><td>50</td></tr>
</table></td><td>The banking sector was resilient. Under the baseline and moderate scenarios, only one bank would show signs of vulnerability, whilst in the severe scenario, four banks would fall in the vulnerability zone. It is noteworthy that these vulnerable banks represented a small share of the banking sector assets.</td></tr>
</table>

5) Rwanda

Types shocks	Assumption	Results
Liquidity shocks (Based on June 2022 figures)	2 simultaneous assumptions were considered: first, the reduction of High-Quality Liquid Assets (HQLA) by 9.6% which is the double of the current withdrawal rate (average of 4.8% in the first five months of 2022), accompanied by the decrease of inflows resulting from the loss on loans being defaulted on, by considering the percentage increase of NPLs	5 banks would fall below the required liquidity requirement of 100 percent.

6) Zimbabwe

The credit risk stress tests conducted by the Reserve Bank of Zimbabwe showed that the banking sector was resilient to a major credit risk shock of 40% migration of performing loans to nonperforming loans as the sector average CAR would remain above 12%. Liquidity stress tests confirmed the Zimbabwean banking sector's resilience to potential short-term liquidity shocks.

COMESA MONETARY INSTITUTE
C/O Kenya School of Monetary Studies
P. O. Box 65041-00618
Noordin Road,Nairobi, Kenya
Tel: +254 20 8646207
http://cmi.comesa.int