TECHNICAL ASSISTANCE REPORT

GHANA

Enhancing the Macroprudential Policy Framework and Toolkit

April 2026

Prepared By

TengTeng Xu (Mission Chief, MCM), Jaunius Karmelavičius (MCM), and Tomáš Konečný (External Expert)

Authoring Departments/Institutions

Monetary and Capital Markets Department

The analysis and policy considerations expressed in this publication are those of the IMF's Monetary and Capital Markets Department.

International Monetary Fund, IMF Publications
P.O. Box 92780, Washington, DC 20090, U.S.A.
T. +(1) 202.623.7430 • F. +(1) 202.623.7201
publications@IMF.org
IMF.org/pubs

Contents

Figures

Tables

Annexes

Glossary

BBM	Borrower-Based Measures
BCBS	Basel Committee for Banking Supervision
BoE	Bank of England
BoG	Bank of Ghana
BSD	Banking Supervision Department
BSSI	Banking Sector Soundness Index
CCoB	Capital Conservation Buffer
CCyB	Countercyclical Capital Buffer
CET1	Common Equity Tier 1
CRD	Capital Requirements Directive
CRR	Cash Reserve Ratio
DDEP	Domestic Debt Exchange Program
DRC	Differenced Relative Credit
D-SIB	Domestic Systemically Important Bank
DSTI	Debt-Service-to-Income Ratio
FSC	Financial Stability Council
FSD	Financial Stability Department
FSR	Financial Stability Review
FX	Foreign Exchange
GDP	Gross Domestic Product
HLA	Higher Loss Absorbency
HP	Hodrick-Prescott
LCR	Liquidity Coverage Ratio
LTD	Loan to Deposit Ratio
LTV	Loan to Value Ratio
MCM	Monetary and Capital Markets Department
MoU	Memorandum of Understanding
MPC	Monetary Policy Committee
NIC	National Insurance Commission
NOP	Net Open Position
NPL	Non-performing Loans
NPRA	National Pensions Regulatory Authority
NSFR	Net Stable Funding Ratio
OFISD	Other Financial Institutions Supervision Department
PN CCyB	Positive Neutral CCyB
RWA	Risk Weighted Assets
SEC	Securities and Exchange Commission
TA	Technical Assistance
TC	Technical Committee

Preface

At the request of the Bank of Ghana (BoG), a mission from the Monetary and Capital Markets (MCM) Department visited Accra, Ghana, from November 3 to 14, 2025, to support the central bank in strengthening their macroprudential policy framework and toolkit. Intensive virtual engagements had preceded the in-person meetings.

The mission team met with Dr. Johnson Pandit Asiama, Governor of the BoG; Dr. Kwasi Osei-Yeboah, Director of the Financial Stability Department (FSD); Dr. John Kwame Dadzie, Deputy Director of FSD; Ismail Adam, Director of the Banking Supervision Department (BSD); Desmond Agbogah, Director of the Other Financial Institutions Supervision Department (OFISD); Dr. Philip Abradu-Otoo, Director of the Research Department; Elliot Adu Amoako, Director of the Resolution and Restructuring Department; Clarence Blay, Director of the Payment Systems Department; Elhanan Owureku Asare, Head of the Fintech and Innovation Office; and Louis Kwame Amo, Chairperson of the Technical Committee (TC) of the Financial Stability Council (FSC), along with staff from the above-mentioned departments and the FSC TC. The mission also engaged with representatives from the National Insurance Commission (NIC) and the National Pensions Regulatory Authority (NPRA), as well as senior management of Ecobank Ghana and GCB Bank.

Special thanks go to Gershon Kojo P. Incoom, Head of the Macroprudential Office in FSD, and Eugenia Otchere, Head of the Research Unit of the Macroprudential Office, for excellent coordination, and to Dr. John Kwame Dadzie, Deputy Director of FSD, for facilitating the lively and insightful discussions. The mission is grateful to BoG staff for their great collaboration, comprehensive responses to the questionnaire, informative presentations, productive discussions, and generous hospitality.

Executive Summary

The technical assistance (TA) mission conducted a comprehensive review of the BoG's macroprudential policy framework and toolkit to strengthen the stability of the banking system. It assessed the institutional framework for macroprudential oversight, evaluated existing macroprudential policy instruments, and provided detailed guidance on implementing a countercyclical capital buffer (CCyB) and domestic systemically important bank (D-SIB) buffer. These efforts were complemented by in-person seminars and workshops to build capacity and support effective operationalization.

While the BoG has broad legal powers to conduct macroprudential policy, its mandate could be further strengthened. According to the current legal framework, one of the objectives of the central bank is to contribute to the promotion of financial stability. It also has broad powers to issue directives to deposit-taking institutions under its supervision, which formed the basis for deploying certain macroprudential measures based on Basel III. Additionally, an interagency consultative Financial Stability Council (FSC), chaired by the central bank Governor, has the power to make recommendations to its member institutions. However, the BoG's macroprudential mandate over deposit-taking institutions could be further strengthened by specifying the functions that are clearly linked to the implementation of its financial stability objective.

The mission recommended strengthening the BoG's macroprudential framework by establishing a dedicated decision-making process and adopting a strategy. The BoG should establish a dedicated decision-making body for macroprudential policy, such as a financial stability committee, and an interdepartmental technical committee to regularly assess systemic risks and propose measures. The Financial Stability Department (FSD) should maintain formal responsibility for systemic risk assessment and macroprudential policy formulation, supported by adequate staffing and specialized expertise. It is essential to adopt and publish a macroprudential strategy document to guide the conduct of macroprudential policy. Establishing a regular macroprudential policy making process for systemic risk analysis and tool deployment will ensure that macroprudential policy remains in focus.

On communication, the mission advised establishing a distinct channel for macroprudential policy announcements, separate from those issued by the Monetary Policy Committee. This could involve launching a dedicated webpage on financial stability and macroprudential policy and strengthening the communication of systemic risk and macroprudential settings in the Financial Stability Review (FSR) and other publications. The FSC's communication could also be enhanced through a dedicated webpage and timely press releases, hosted on or clearly linked from the BoG website.

Systemic risk monitoring framework for macroprudential policy could be further enhanced by incorporating more forward-looking assessments. Current analysis would benefit from richer data coverage, including broad and sectoral credit, and real estate data, and the use of the credit register. Identification of systemic risk should adopt a more forward-looking approach that considers existing vulnerabilities, potential shocks, and transmission channels, assessing their impact over a longer time horizon to better identify emerging risks.

While several measures have been implemented, the macroprudential policy toolkit could be broadened and further operationalized. Current tools include the capital conservation buffer (CCoB), leverage ratio, cash reserve ratio (CRR)—a reserve requirement, and limits on foreign exchange (FX) positions. While these measures contribute to resilience, sectoral tools remain limited, and frameworks for

CCyB and D-SIB buffers have not yet been established, with buffers effectively set at zero. Once the banking system recovers and the provision of credit to the private sector strengthens, resilience should be maintained by building macroprudential capital buffers to absorb losses and maintain the provision of financial services through adverse shocks. This includes developing and implementing transparent frameworks for D-SIB buffers and CCyB. In addition, introducing a carefully calibrated capital measure could help mitigate sovereign risk, while adopting a full set of liquidity requirements would reduce potential liquidity risks. A comprehensive toolkit, supported by strong microprudential regulation and close coordination with other regulators, will help prevent policy leakages.

The mission developed a D-SIB tool tailored to Ghana's data. Regarding the identification of D-SIBs, indicators and category weights should be aligned with the structure of Ghana's banking system, and the cut-off score high enough to distinguish systemic from non-systemic banks, with clear guidance on the use of supervisory judgment. The calibration of Higher Loss Absorbency (HLA) requirements should be supported by a clear analytical framework and informed supervisory judgement. Regular data collection for D-SIBs and periodic assessments of systemic importance, with results disclosed to the stakeholders will strengthen transparency. The BoG should also establish cooperation mechanisms that integrate the D-SIB framework with supervision and resolution, and enhance cross-border coordination through supervisory colleges and engagement with home authorities of foreign-owned D-SIBs.

The mission provided detailed guidance on the methodology and practical implementation of the CCyB framework, supported by a tool tailored to Ghana's macrofinancial indicators. The mission recommended adopting a transparent methodology for the activation, build-up and release of the CCyB. Specifically, it would be useful to consider a broad measure of credit and alternative credit indicators to calibrate the CCyB rate, with the buffer size linked to a credit indicator through a buffer guide. The monitoring and analytical framework for the CCyB should be integrated into BoG's systemic risk assessments and flagship reports. The BoG should assess the need to incorporate a stable positive neutral component into its CCyB framework. In addition, a well-designed communication strategy is essential to ensure transparency and predictability, and reciprocity arrangements with key home supervisors could help reduce leakages.

Successful implementation of these recommendations will require sustained commitment and continued collaboration within the BoG and among regulatory agencies. By advancing the macroprudential policy framework and toolkit, Ghana will be better positioned to mitigate systemic risks, absorb future shocks, and promote a stable and resilient financial system.

Recommendations

Table 1. Key Recommendations

Recommendation	Priority	Timeframe [1/]
Institutional Framework		
Further strengthen the BoG's macroprudential mandate by specifying the functions that support the implementation of financial stability objective (¶ 26).	Medium	LT
Establish a dedicated decision-making body for macroprudential policy such as a financial stability committee (¶ 27).	High	MT
Adopt and publish a macroprudential strategy document to guide the conduct of macroprudential policy in pursuit of financial stability (¶ 28).	High	MT
Maintain responsibility over systemic risk assessment and macroprudential policy formulation in FSD, ensuring adequate staffing and expertise (¶ 29).	High	ST/MT
Establish an interdepartmental technical committee led by FSD to regularly assess systemic risks and propose macroprudential measures (¶ 30).	Medium	MT
Establish a regular macroprudential policymaking process to ensure that macroprudential policy remains in focus (¶ 31).	Medium	MT
Enhance communications on systemic risk and macroprudential policy (¶ 32-35).	High	MT
Systemic Risk Monitoring Framework		
Enhance data for systemic risk analysis, including broad and sectoral credit and real estate data (¶ 55).	High	MT
Further strengthen systemic risk analysis with forward-looking assessments (¶ 56).	Medium	MT
Macroprudential Policy Measures		
Define macroprudential policy measures and assign responsibility over their operation (¶ 57).	High	ST/MT
Once the banking system recovers, strengthen its resilience by building macroprudential capital buffers (¶ 58).	Medium	MT
Develop and implement a transparent D-SIB framework, ensuring buffers are proportionate to the systemic importance of each institution (¶ 59).	Medium	MT
Develop and implement a transparent CCyB framework, ensuring that the BoG has releasable buffers to support credit in downturns (¶ 60).	Medium	MT
Consider legally adopting a releasable sectoral buffer to address potential sectoral systemic risks (¶ 61).	Low	MT
Implement a carefully calibrated capital measure to mitigate sovereign risk without triggering disorderly unwinding of sovereign exposures (¶ 62).	High	MT
Adopt a complete set of liquidity requirements aligned with international standards while reflecting Ghana's specificities (¶ 63).	High	MT

Table 1. Key Recommendations (concluded)

Recommendation	Priority	Timeframe [1/]
Prepare for legal adoption of Borrower-Based Measures (BBMs) as household lending market develops (¶ 64).	Low	LT
Continue close coordination with other regulators to address any potential macroprudential policy leakages (¶ 65).	Medium	MT
Technical Guidance on D-SIB Framework		
Adopt and implement a D-SIB methodology based on the technical guidance provided by the mission (¶ 70-73).	Medium	MT
Introduce regular data collection and enhance the analysis of the cross-sectional dimension of systemic risk (¶ 74).	Medium	ST
Establish a regular assessment of systemic importance of the Ghanaian banks and disclose results to the stakeholders (¶ 75).	Medium	MT
Establish cooperation mechanisms that integrate the D-SIB framework with work of other micro-prudential functions and relevant departments (¶ 76).	Medium	MT
Strengthen cross-border coordination with relevant home supervisory authorities of foreign-owned D-SIBs (¶ 77).	Low	LT
Technical Guidance on CCyB Framework		
Adopt an analytical framework for the activation, build-up and release of CCyB buffers, based on the guidance provided by the mission (¶ 81-86).	Medium	MT
Integrate the CCyB analytical framework into BoG's systemic risk assessments and flagship reports (¶ 87).	Medium	MT
Assess the need for a positive neutral component in the CCyB framework (¶ 88).	Medium	MT
Design and implement a communication strategy to convey the CCyB decisions and methodology to stakeholders (¶ 89).	Medium	MT
Consider establishing reciprocity arrangements with key home supervisors (¶ 90).	Low	LT

[1/] Short term: < 12 months; Medium term: 12 to 24 months; Longer term: 2 to 5 years.

I. Introduction

1. Ghana's financial system is predominantly bank-based. As of end-2024, banking sector assets accounted for over three-quarters of total financial sector assets, followed by pensions (16 percent), and securities and insurance (about 4 percent each). Within banking, more than 90 percent of assets were held by universal banks, with the remainder in specialized deposit-taking institutions such as savings and loans companies and rural community banks. Of the 23 universal banks, the nine domestic banks held almost 40 percent of assets. The 14 foreign banks operate as subsidiaries of pan-African and non-pan-African foreign banks.

2. Ghana employs a sectoral model of financial regulation. The BoG supervises the banking sector, including universal banks and specialized deposit-taking institutions. The National Insurance Commission (NIC) regulates the insurance industry, while the National Pensions Regulatory Authority (National Pensions Regulatory Authority (NPRA)) oversees the pensions sector. The Securities and Exchange Commission (SEC) is responsible for regulating the securities market.

3. The banking sector has been gradually recovering over the past year, but non-performing loans (NPLs) and sovereign exposures remain high. Following the 2022 Domestic Debt Exchange Program (DDEP), banks incurred significant losses on domestic government bonds holdings, which weakened their capital positions.[1] Over the past year, capital adequacy has improved, reaching about 18 percent of risk weighted assets (RWA) as of August 2025—close to pre-DDEP levels. This recovery in capital and profitability has been partly supported by increased holdings of high-yielding BoG bills. Despite some improvements, the private sector NPL ratio remains elevated at 20.8 percent and banks continue to be highly exposed to domestic sovereign.

4. While credit to the private sector has been constrained by high interest rates and credit risk, it is now expected to pick up from a low base.[2] The authorities anticipate credit growth to strengthen on the back of declining interest rates and inflation, the associated shift away from sovereign holdings, the ongoing recovery from the DDEP, alongside BoG's initiatives to reduce NPL levels. In this context, the authorities requested TA on macroprudential policy to put in place the necessary framework to safeguard against potential future vulnerabilities.

5. The TA mission undertook a comprehensive evaluation of the BoG's macroprudential policy framework and toolkit. The mission assessed the institutional framework for macroprudential oversight, reviewed the existing policy instruments, and provided detailed guidance on implementing the CCyB and the D-SIBs buffer. This was complemented by in-person seminars and workshops designed to build capacity and support effective operationalization of the above tools.

6. This report summarizes the mission's findings and recommendations. Section II assesses the current institutional arrangements, followed by a review of the systemic risk monitoring framework and the macroprudential toolkits (Section III). Section IV provides detailed guidance on implementing the CCyB and D-SIB buffers. Annexes provide detailed methodologies for the D-SIB and CCyB toolkits.

---

[1] The program involved exchanging existing bonds for new ones with different maturity and coupon rates.

[2] Based on a narrow measure of credit, the private credit to GDP ratio has been at around 10 percent.

II. Institutional Framework

7. Macroprudential policy is the use of primarily prudential tools to limit systemic risk. A central element in this definition is the notion of systemic risk—the risk of disruptions to the provision of financial services caused by impairment of all or parts of the financial system, which can lead to serious negative consequences for the economy. By mitigating systemic risks, macroprudential policy aims to reduce the frequency and severity of financial crises, thereby contributing to financial stability (see IMF 2013, 2014a).[3]

8. A strong institutional framework provides a solid foundation for the conduct of macroprudential policy. The framework needs to ensure there is willingness to act, derived from the legal mandate and enhanced by accountability.[4] The ability to act is linked to institutional powers to collect information and to deploy and enforce measures, supported by analytical capacity and resources. Cooperation arrangements across relevant institutions are needed to ensure that macroprudential policy can look across the financial sector as a whole.

9. An institution's ability and willingness to act can be fostered through a clear macroprudential policy mandate, a dedicated decision-making body, and strong cooperation. The institution must be endowed with a clear macroprudential mandate that pursues a set of financial stability objectives, including intermediate objectives (IMF, 2013). A dedicated decision-making body should focus on systemic risk and macroprudential policy issues, with a separate, adequately resourced unit engaging in systemic risk monitoring. A well-defined macroprudential strategy should guide the institution's actions and ensure accountability as risks evolve. Strong cooperation within and across institutions with information sharing and coordination mechanisms help create a comprehensive framework and mitigate leakages and risks arising from interconnectedness. Finally, transparent and credible communication is essential to maintain accountability and support the effective implementation of tools.

10. This section reviews the existing institutional framework for the conduct of macroprudential policy at the BoG and provides recommendations to further enhance the framework. The discussion and recommendations focus on the legal foundation and macroprudential mandate; the decision-making process and organization; the inter-agency coordination; and communications.

A. Institutional Framework for Macroprudential Policy at the BoG

Macroprudential Mandate and Legal Foundation

11. The BoG implements macroprudential policy by issuing regulations for deposit-taking institutions. One of the objectives of the BoG Act is for the central bank to contribute to the promotion and

[3] While there is no single unifying definition of financial stability, central banks have defined financial stability as follows: 1) "Financial stability can be defined as a condition in which the financial system—which comprises financial intermediaries, markets and market infrastructures—is capable of withstanding shocks and the unravelling of financial imbalances"—ECB; 2) "Financial stability in its most basic form could be thought of as a condition where financial institutions and markets are able to support consumers, communities, and businesses even in an otherwise stressed economic environment."—the Federal Reserve; and 3) "Financial stability refers to a financial system that inspires confidence through its resilience to systemic risks and its ability to efficiently intermediate funds."—South African Reserve Bank.

[4] Detailed IMF guidance on macroprudential policy institutional framework could be found in IMF (2013, 2014a).

maintenance of financial stability.[5] In line with this objective, the BoG has been using its broad powers provided by the BoG Act to implement some prudential measures for the banking sector, including the leverage ratio and the CCoB under the Capital Requirements Directive (CRD). Additionally, an interagency consultative FSC, chaired by the Central Bank Governor, was established in December 2018. The BoG has direct powers to issue directives to deposit-taking institutions under its supervision, while the FSC has the power to make non-binding recommendations to its member institutions (more details on inter-agency coordination in ¶18 to ¶21).

12. The BoG has statutory independence and broad information collection powers.[6] The implementation of (macro)prudential measures in the sphere of deposit-taking institutions does not require approval from other institutions. Additionally, the BoG has broad information collection powers bestowed by the Act, including the collection of statistical information necessary for the proper formulation of monetary and credit policies, as well as the right to request information for research relating to money or banking and other subjects.

13. While the BoG has broad legal powers to conduct macroprudential policy, the functions supporting its financial stability objective are not explicitly specified. Currently, financial stability and related intermediate objectives do not appear to be explicitly defined in BoG's official documents; macroprudential policy and systemic risk are not explicitly mentioned in the Act pertaining to central bank functions[7,8]. This could potentially create a gray area that may give rise to some inaction bias, especially considering that the potential costs of macroprudential measures are likely to be born immediately, while the benefits of financial system stability accrue over the longer term. Additionally, macroprudential policies deployed unilaterally by the BoG to combat systemic risk could be legally contested or politically scrutinized.

Macroprudential Decision-Making Process

14. A formal macroprudential policy strategy is currently not in place. The objectives of macroprudential policy do not appear well defined in institutional documents and publications, with limited coverage of macroprudential policy in the FSRs or on BoG's official website.

15. Macroprudential policy decisions are embedded within the monetary policy process, with some decisions taken by the Monetary Policy Committee (MPC). Currently, there is no separate financial stability committee with a regular focus on systemic risks. Financial policies to contain the impact of

[5] The BoG Act (henceforth the Act) Section 3 stipulates price stability as the primary objective, with three secondary objectives named in the following order: (a) "support the general economic policy of the Government", and (b) "promote economic growth and development, and effective and efficient operation of the banking and credit system", and (c) "contribute to the promotion and maintenance of financial stability in the country".

[6] The central bank's statutory independence and operational autonomy are enshrined in the 1992 Constitution and the Act; however, that is subject to risks including from Section 3(a)(c) objective to support the Government's economic policy. Factual assessment of independence and autonomy is beyond the scope of this TA. Some amendments to the Act were submitted to Parliament in June 2025, as outlined in one of the structural benchmarks in the IMF program.

[7] In the BoG Act, objective (c) and the second part of objective (b), as well as functions (d), (e), (h), and (k), appear conducive at large to macroprudential policy formulation and implementation.

[8] Among the BoG's functions stipulated in Section 4 of the Act are the following relevant functions: (a) "formulate and implement monetary policy aimed at achieving the objects of the Bank", (d) "regulate, supervise and direct the banking and credit system and ensure the smooth operation of the financial sector", (e) "promote, regulate and supervise payment and settlement systems", (h) "licence, regulate, promote and supervise non-banking financial institutions", and (k) "do all other things that are incidental and conducive to the efficient performance of its functions under this Act and any other enactment". Furthermore, Banks and Specialized Deposit-Taking Institutions Act (henceforth the Banking Act) Section 3(2)(c), empowers the BoG to "ensure the soundness and stability of the financial system and the protection of depositors in the country through the regulation and supervision of financial institutions".

COVID-19 and the DDEP were announced by the Governor and the MPC. However, the MPC focuses primarily on monetary policy settings and objectives, without explicit financial stability objectives.[9] Staff from the FSD and the Research Department present reports on financial stability and macroprudential risk assessments at MPC's
bi-monthly meetings, but macroprudential decisions are taken only exceptionally.

16. Macroprudential tools are not clearly defined in institutional documents. Macroprudential tools could also be used for monetary policy purposes under exceptional circumstances. As noted on BoG monetary policy framework website, the MPC may announce additional measures that "involve the utilization of other monetary policy tools at the disposal of the Central Bank, such as moral suasion and macroprudential measures."

Macroprudential Policy Work Organization in the BoG

17. The FSD is responsible for macroprudential assessment and policy formulation at the BoG. The scope of the FSD's work is broad, encompassing macroprudential policy, financial integrity, credit reporting and financial literacy, market conduct and consumer protection. Macroprudential policy is undertaken by the department's macroprudential office, which comprises staff covering 1) research—contributing to key publications, including the FSR; 2) surveillance—engaged in risk monitoring, analytical modeling, and stress testing; 3) and secretariat—coordinating and supporting the FSC as well as working with international bodies. Given the depth of analytical topics, going forward, there is scope for more resources in the macroprudential office to further develop and operationalize the macroprudential framework.

18. The FSD collaborates closely with other BoG departments on financial stability issues. The Banking Supervision Department (BSD) is instrumental in providing a micro-prudential regulatory and supervisory perspective of banks, savings and loans companies, and finance houses, and a wealth of supervisory data and information. The Other Financial Institutions Supervision Department (OFISD) provides insights into financial data on the other specialized deposit-taking institutions. The Fintech and Innovation Office, Payment Systems Department and the Research Department also contribute to financial stability work. In addition to collaborations through data sharing, FSD, BSD and the Research Department also meet regularly to discuss findings from systemic risk analysis and ensure consistency of views prior to the bi-monthly MPC meeting. Nevertheless, there is currently no formalized interdepartmental technical committee on financial stability issues at the bank level.

Coordination with Other Agencies

19. The FSC has a dual legal purpose of serving as an interagency coordination body in pursuit of financial stability and as an advisor to the president on financial stability issues. The FSC's mandate is

[9] The MPC is comprised of the Governor and two deputies, directors of Research and Financial Markets departments, as well as two monetary policy experts from outside the BoG—seven members in total. They typically meet every two months, with meeting dates announced at the beginning of each year, but there may be some extraordinary meetings with irregular frequency. The discussions are centered on current economic conditions and the inflation outlook, whereas decisions—made either by vote or by consensus—are focused on monetary policy instruments, including the monetary policy rate (MPR), term deposit facility, market operations, and reserve requirements.

described in two documents—an Executive Instrument and a Memorandum of Understanding (MoU).[10] The council's objectives and functions are strengthening the stability of the financial sector by coordinating regulation and supervision, evaluating and mitigating financial stability risks, and preparing for crises.

20. The BoG appropriately plays a leading role in the FSC. Membership for the FSC comprises nonbank regulators, deposit insurance, and the Ministry of Finance (MoF).[11] The BoG holds a strong role in the FSC, reflected by its chairmanship and secretariat functions—consistent with the IMF's guidance (2013, 2014a). Currently, the terms of the council members coincide with that of the president, which could affect the FSC's operational continuity and policy consistency. This risk is mitigated by the participation of institutional staff in technical committees, whose membership typically extends beyond political cycles.

21. The FSC meets at least quarterly and has "comply or explain" recommendation powers.[12] It can issue recommendations to any of the FSC members. However, member institutions remain independent and can act within their legal mandates without FSC's approval. Decisions are generally made by consensus, and only exceptionally by majority vote. To support its work, the council is authorized to request necessary information and data from member institutions and relevant government agencies.

22. The internal work of the council is coordinated by a technical committee and organized in three working groups, including one dedicated to macroprudential policy. The groups cover: 1) coordination of regulation and supervision at the micro level, 2) evaluation and mitigation of financial stability risks at the macro level, and 3) crisis preparedness—each aligned with the council's objectives. The macroprudential policy working group (second group) includes representatives from all member institutions, with the chair rotating annually. The MoU allows for the use of macroprudential tools through specific regulations or enhanced supervision by the relevant agency, although it does not define the instruments explicitly. During the mission, the team was invited to observe a technical committee meeting, which appeared well-organized, with a well-defined agenda centered on financial stability issues, detailed presentations of analytical findings—including stress testing results for different sectors—and clearly-articulated follow up plans.

Communication

23. Decisions on macroprudential measures are currently communicated through several channels, including MPC press briefings, BoG press releases, and supervisory notices. For example, the initial release of the CCoB during the pandemic was announced as part of the MPC communication, alongside other policy measures such as changes to RRs and loan provisioning (MPC, March 2020). The restoration of the CCoB was later communicated through the March 2022 MPC Press Release, together with the decisions to increase the policy rate. Similarly, other macroprudential actions—such as the pandemic-related reduction in the leverage ratio—were conveyed through press releases and supervisory notices.

---

[10] Under the December 28, 2018 presidential decree, the official name of the council is the Financial Stability Advisory Council. It is established by the president under the executive powers vested by Article 58 of the Constitution. Advisory functions include a) advise the president on the coordination of actions; b) identify and evaluate threats, vulnerabilities, and risks to financial sector stability; c) advise the president on the design and implementation of measures to mitigate the identified risks; and d) ensure readiness of the president to deal with financial crisis. Additionally, the council may perform other functions assigned by the president.

[11] There are seven representatives in the FSC Board: the governor and deputy governor (financial stability) of the BoG; the deputy minister of finance (financial sector); and heads of the NIC, SEC, NPRA, and Ghana Deposit Protection Corporation.

[12] While the FSC is legally obliged to meet every quarter, the president, the chairperson (BoG Governor), and five other joint members of the council have the ability to request additional meetings.

24. Financial stability and macroprudential issues are covered in the Monetary Policy Report (MPR), the FSR and the BoG Annual Report. The BoG publishes the MPR bi-monthly, covering banking sector and macrofinancial developments (e.g., July 2025 and September 2025). The FSR, issued annually under the FSC and led by the BoG, provides assessments of the banking sector and the non-bank financial sectors, including quantitative analyses such as banking sector stress testing. Discussions in these publications could be enhanced with forward-looking assessments of systemic risks, their transmission channels, and potential impact.

25. There is currently no dedicated BoG webpage on financial stability, macroprudential policies, or for the FSC. The 'Supervision & Regulation' landing page primarily focuses on the microprudential regulatory and supervisory framework, without references to "macroprudential" or "systemic risk". Likewise, the FSD page highlights information on consumer protection and credit reference bureau but does not feature updates on macroprudential measures. Furthermore, the FSC does not have a dedicated website. Although the MoU envisages the publication of statements following each FSC meeting, only a limited number of press releases have been issued in recent years.

B. Recommendations

Macroprudential Mandate and Legal Powers

26. The BoG's macroprudential mandate could be further strengthened by specifying the functions that support the implementation of its financial stability objective. While the BoG's current broad legal powers may suffice to activate certain macroprudential measures, implementing macroprudential policy in a more systematic and comprehensive manner over deposit-taking institutions under its supervision would benefit from more explicit legal provisions. This would entail amending the BoG Act to formally establish macroprudential policy as one of the central banks' functions—involving systemic risk assessment, formulating macroprudential policy, and measure enforcement—directly tied to its financial stability objective.[13] Steps could also be taken to articulate intermediate objectives. Such legal changes would enhance the legitimacy of BoG's actions, empower it to address systemic risks and vulnerabilities—even when some individual institutions appear sound or the broader economy is stable—and protect it from undue legal or political scrutiny. More explicit macroprudential policy functions would also reinforce accountability to the legislature and support the central bank's consistent willingness to act. Furthermore, establishing a clear link between macroprudential policy and financial stability is essential to prevent the potential misuse of macroprudential tools for objectives other than financial stability. It would also be beneficial to define the financial stability objective explicitly within the Act.

Macroprudential Decision-Making Process

27. The BoG should establish a dedicated decision-making body for macroprudential policy, such as a financial stability committee. Currently, decision-making for macroprudential policy is embedded in the monetary policy process, with some decisions taken by the MPC. This separate new committee would convene regularly to assess systemic risks and discuss macroprudential policy decisions focusing on financial stability objectives.[14] Membership should include senior management, notably the Governor and deputy

[13] For IMF guidance on detailed aspects of macroprudential legal framework, please see IMF (2013).

[14] This committee could be either established by law with decision-making powers, or it could be an advisory committee that provides recommendations to the ultimate decision-maker.

governors, with partial overlap with the MPC members to facilitate coordination between macroprudential and monetary policies. To ensure diverse perspectives, the committee could also include independent external members with financial sector expertise.

28. The mission recommends adopting and publishing a macroprudential strategy document to guide the conduct of macroprudential policy. At a minimum, this strategy should clearly define financial stability, systemic risk, and macroprudential policy.[15] It should articulate intermediate objectives and list available macroprudential tools, allowing flexibility for future additions.[16] The strategy should also outline the macroprudential process, the decision-making framework, inter-agency coordination, and communication principles. Overall, the strategy should guide the BoG's macroprudential policymaking through changing systemic risk landscape, while ensuring a rigorous and consistent approach to tool deployment. Publication of the strategy would enhance accountability to the public, strengthen the BoG's credibility, and improve the predictability of its actions.

Macroprudential Policy Work Organization at the BoG

29. The FSD should maintain formal responsibility for systemic risk assessment and macroprudential policy formulation. The macroprudential office currently undertakes a broad range of analytical work on financial stability, including risk monitoring and stress testing, which should continue with an enhanced policy focus. In light of the recommended reforms, it is critical to ensure the macroprudential office is well-resourced to further develop and operationalize the macroprudential framework. This includes attracting and retaining staff with relevant expertise in macroeconomics, finance, prudential regulation and supervision, and quantitative analytics.

30. The BoG should establish an interdepartmental technical committee, led by the FSD, to regularly assess systemic risks and propose macroprudential measures to the decision-making body. To date, the BoG has relied on informal cooperation, supported by strong professional relationships among different departments involved in macroprudential policy. Formalizing this collaboration through a technical advisory committee would help institutionalize coordination and ensure continuity amid potential personnel changes. This committee would meet regularly to identify and discuss systemic risks, assess potential macroprudential policy tools, and advise decision-makers on appropriate policy actions. To maintain a clear macroprudential focus, participation should involve relevant BoG stakeholders—such as the FSD (lead), BSD, OFISD, and the Research Department—with contributions from other departments as needed. As differences may occasionally arise between supervisory and financial stability perspectives, the technical committee would also serve as a platform to align these views and foster coordinated policy action.

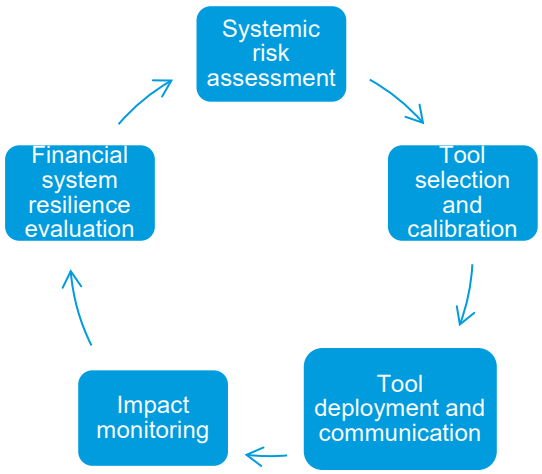
31. The BoG should establish a regular macroprudential policymaking process for systemic risk analysis and tool deployment to ensure that macroprudential policy remains in focus. This process should operate as a continuous cycle, encompassing systemic risk assessment, instrument selection, calibration, and deployment, communication, ex post impact evaluation, and reassessment of financial system resilience (see figure below). It could be anchored in quarterly or semi-annual decisions on the CCyB, complemented by explicit reviews of other macroprudential instruments. The FSD should lead this process,

[15] Macroprudential strategy examples: Czech Republic, Egypt, Georgia, Hungary, Lithuania, Morocco, Poland, Serbia, South Africa.

[16] For example, IMF (2013, 2014a) proposes three intermediate objectives, which are simplified in the following: 1) increase systemic resilience, 2) contain the build-up of systemic vulnerabilities over time, 3) control vulnerabilities in the structural dimension through interconnectedness, too-important-to-fail. Other categorizations are possible, including that of the European Systemic Risk Board (ESRB/2013/11) which defines five intermediate objectives.

involving the interdepartmental technical committee, the decision-making body, the communications department, and the BSD—engaged as both a stakeholder and an enforcer of regulation. Formalizing this process in BoG's strategy document would help ensure that systemic risk considerations and macroprudential policy remain in focus.

Figure 1. The Macroprudential Process
(A Stylized Example)



Source: IMF staff.

Communications

32. The BoG should establish a separate communication channel for macroprudential policy decision announcements. As discussed, decisions on macroprudential measures have so far been combined with monetary policy communication. Having a distinct channel of communication for macroprudential decisions—separate from MPC's communication—would help maintain focus on macroprudential policy and systemic risk, creating clearer understanding among the public about the rationale and objectives of such decisions. The BoG should publish separate press releases on decisions on macroprudential measures and hold dedicated press briefings as needed for important policy changes.

33. The BoG should also launch a dedicated webpage on financial stability and macroprudential policy. Such a webpage should contain the definition of macroprudential policy together with its strategy, objectives, decision-making structure, instruments and their settings, as well as other relevant information.[17] Importantly, it would also contain an archive of macroprudential policy decision press releases and past FSRs. Additionally, the BoG should consider leveraging modern communication channels such as social media and blogs to announce and explain these decisions.

34. Similarly, the FSC should strengthen its communication with a dedicated webpage and timely issuance of press releases. This could be either a separate website that is linked to the BoG's website, or a page on the BoG's website, including information on the council's mandate and work organization, decisions and recommendations made, accompanied by timely issuance of press releases which are archived, as well as other relevant information.[18]

[17] Webpage examples: Czech Republic, Egypt, Georgia, Hungary, Ireland, Lithuania, New Zealand, South Africa.

[18] Cross-institutional financial stability committee website examples: France, Italy, Philippines, United Kingdom.

35. It would be useful to further strengthen the communication of systemic risk and macroprudential settings in the FSR and other relevant publications. For example, the FSR should elaborate on the identification of systemic risks, their likelihood, transmission channels, and potential impact on financial stability, and include more forward-looking analysis of vulnerabilities based on early-warning indicators. The report should also have a dedicated discussion on macroprudential policy settings, discussing their effectiveness and potential for future deployment in connection with the identified vulnerabilities. Timely publication of FSRs could help maintain confidence in financial stability and institutional credibility. To enhance accessibility, the FSR could be presented in press conferences accompanied by infographics, blogs, social media posts, and podcasts.

III. Systemic Risk Monitoring and the Macroprudential Toolkit

36. Macroprudential toolkits should build on a robust systemic risk monitoring framework, with a set of policy measures designed to address and mitigate those identified risks.[19] The definition of macroprudential policy—the use of primarily prudential tools to limit systemic risk—implies two building blocks. The first is related to the key notion of systemic risk, requiring an analytical framework for identification and monitoring. The second is about policy deployment, encapsulating macroprudential measures and their operation.

37. Systemic risk is complex and multidimensional, requiring a robust analytical framework for identification and monitoring. Systemic risk can arise from broad-based credit booms, sectoral exposures, liquidity challenges related to maturity transformation and funding instability, or structural interconnectedness and too-big-to-fail externality (see IMF, 2013, 2014a).[20] Measuring systemic risk is challenging, as it is unobserved. For instance, it could be difficult to distinguish between exuberant credit growth and natural financial deepening in a developing country.

38. Macroprudential policy measures should be mapped to well-defined systemic risks, comprising capital, liquidity, and BBMs for banks. Capital measures, such as CCyB, D-SIB buffer, and risk weights, are mainly used to address solvency concerns. Liquidity measures including the Liquidity Coverage Ratio (LCR), the Net Stable Funding Ratio (NSFR), the Loan to Deposit Ratio (LTD) ratio limits, and macroprudential RRs target systemic amplification arising from liquidity and funding risks, which often extend to foreign currency exposures. BBMs are lending standards and quantitative limits such as LTV and debt-service-to-income (DSTI) ratios that are typically applied on household lending to combat systemic risks arising from household indebtedness and housing booms. It is generally advisable to legally enact a comprehensive set of measures that can be readily deployed in anticipation of or to counter systemic vulnerabilities.

39. Tool operation involves three decision points—activation, tightening, and relaxation—underpinned by systemic risk analysis. Operation of measures typically involves three decision points: 1) activation—to provide basic systemic resilience, 2) tightening—to increase resilience and counter cumulation of systemic vulnerabilities, and 3) relaxation—to allow the financial system to absorb shocks without amplification. Each of those decisions should be underpinned by systemic risk identification and monitoring.

40. This section will review the macroprudential toolkit and provide recommendations focusing on the banking system, within the BoG's purview. We will separate our discussion by first briefly touching on the systemic risk monitoring framework at the BoG, then reviewing the availability and operation of macroprudential measures, and concluding with recommendations.

---

[19] For detailed guidance on macroprudential instruments and their usage, see IMF (2014b).

[20] Alternatively, one could think of a certain systemic risk as cyclical—that varies along with provision of financial services (credit) and asset prices over time, or structural—embedded in the structure of a financial system with some constancy.

A. Systemic Risk Framework at the BoG

Data and Indicators

41. Access to data for systemic risk analysis is generally robust, but there is no dedicated data system for macroprudential purposes. Supervisory data from the BSD and macroeconomic data from the Research Department form the foundation for systemic risk assessment.[21] However, there is currently no dedicated data management system for macroprudential purposes. The BoG maintains credit register and collateral registers that support lending activities, but they are not yet used for systemic risk analysis.[22] Staff conduct regular surveys to assess lending conditions and gather banks' perspectives on systemic risks.

42. Indicators for systemic risk monitoring predominantly focus on the banking sector, with limited granularity across institutional sectors. Broad-based risk assessment relies on banking system indicators, including solvency, profitability and efficiency, asset quality, and credit growth indicators (see Table 1). Sectoral risk coverage is mostly limited to household and corporate NPLs and sectoral credit growth rates. Although the BoG maintains data on corporate sectoral credit, including a breakdown of NPLs, it lacks differentiation among various types of household loans. Monitoring of the real estate sector remains limited due to the absence of a comprehensive price index; however, the BoG is currently collaborating with the Ghana Statistical Service and other FSC members to develop real estate indicators, including a price index. Government sector risk is mainly monitored through banks' exposures to Government of Ghana (GoG) bonds expressed as a share of total assets. Liquidity and funding risk indicators center on liquid asset ratios relative to short-term liabilities, the LTD ratio, and the share of wholesale deposits. FX risk assessment is primarily based on net open positions (NOPs), disaggregated by maturity bucket.

Systemic Risk Analysis

43. Systemic risk analysis employs several composite indicators and tools, including cobweb analysis, the Banking Sector Soundness Index (BSSI), and heatmaps. The cobweb analysis draws on foreign and domestic macroeconomic indicators, banking system NPLs, sectoral credit growth, and net deposits. The BSSI and the heatmap primarily utilize the financial soundness indicators covering capital adequacy, asset quality, earnings, liquidity ratios, and efficiency. Although these tools effectively reflect the current state of the banking sector, they offer limited early-warning properties and may not fully capture underlying vulnerabilities. The credit-to-GDP gap serves as the main indicator for monitoring excessive credit, which covers deposit taking institutions. Additionally, the BoG conducts loan concentration analysis based on granular loan-level data for top 50 borrowers and interconnectedness analysis.

44. The FSD conducts top-down sensitivity analyses and stress tests assessing the banking system's resilience to sovereign, credit, liquidity, and market risks. These include quarterly sensitivity analyses and annual macro stress tests, which are integral to the BoG's evaluation of emerging risks and are regularly featured in the FSR and discussions within the FSC.[23] Furthermore, FSD's sovereign and credit stress testing results have informed macroprudential and prudential policy decisions during the DDEP.

---

[21] The data series include, but are not limited to, daily liquidity positions, NOP, monthly profitability, balance sheets, and capital adequacy, as well as additional indicators including asset quality, sectoral credit allocation, loan concentration, sovereign exposures, and deposit information.

[22] The credit register covers a wide coverage of corporate and household loans from various reporting institutions.

[23] An earlier IMF TA mission supported the BoG with enhancing its stress testing framework.

B. Macroprudential Measures and their Operation at the BoG

Capital Measures

45. Ghana's prudential capital requirements are appropriately more conservative than international standards. Under the CRD, Ghanaian banks must maintain a minimum risk-based capital adequacy ratio of 10 percent (CRD 71–73), complemented by a 3 percent CCoB (CRD 74, 80–83), bringing the total to 13 percent. A complementary leverage ratio of 6 percent, treated as "a macroprudential measure" (CRD 88–90), was reduced to 4.5 percent just before the pandemic. Although the BoG has not yet fully implemented the Basel III standards and Pillar 2 requirements, its regulatory requirements exceed international benchmarks that prescribe an 8 percent minimum capital ratio, a 2.5 percent CCoB, and a 3 percent leverage ratio. This prudence reflects BoG's conservative risk management approach and aligns with practices in other developing economies that are susceptible to external shocks and operate under relatively nascent supervisory frameworks (IMF, 2014c).

46. The CCoB requirement has been relaxed several times in response to shocks. The BoG reduced it to 1.5 percent at the onset of the pandemic in 2020, restoring it back to 3 percent in 2022. It was subsequently released in full (to 0 percent) to alleviate solvency pressures arising from the impact of DDEP in 2023, with restoration planned as of end-2025. While such regulatory relief supported banks through the DDEP, releasing the CCoB is not envisaged under the Basel framework (RBC30). The requirement is meant to be conserved as the last line of defense before breaching the minimum. A releasable buffer such as the CCyB would be better suited for release during system-wide stress.

47. Although the CCyB has been legally adopted under the CRD, it remains inactive with a buffer rate of zero due to the absence of an operational framework. The CCyB is a broad-based, time-varying, and releasable buffer designed to strengthen the banking sector's resilience to adverse shocks.[24] The CRD defines the CCyB as "a cyclical requirement for banks to build up a buffer of capital in good times", with buffer buildup to mitigate "excessive aggregate credit growth". While this aligns with the conventional Basel approach to CCyB calibration, it may result in insufficient buffers when excessive credit growth is difficult to identify or absent, as was the case in Ghana and many other countries prior to the pandemic. Since its legal inception in 2018, the BoG has not operationalized the framework. In the meanwhile, the BoG monitors several indicators—including the credit-to-GDP gap, which has been mostly negative—and conducts regular credit risk analysis, but there is no established framework linking cyclical risk assessment to buffer calibration.

48. The BoG legally adopted a D-SIB framework but has not yet operationalized it. D-SIB buffers play a critical role in strengthening the resilience of D-SIBs and mitigating risks arising from interconnectedness within the financial system.[25] The BoG may designate a bank as systemically important and require it to hold additional capital to mitigate the risk to the economy (Art. 86-87 CRD). A draft FSD

[24] By allowing banks to draw down accumulated capital during downturns, it helps absorb losses and sustain credit provision (BCBS, 2010; BCBS 2024; IMF, 2014a). The CCyB also mitigates the procyclicality of bank lending: the build-up of additional capital during periods of rising vulnerabilities can curb excessively rapid credit growth. The available evidence suggests that the CCyB enhances banks' resilience but is less successful in containing credit growth (see, for example., BIS, 2022). To date, the CCyB has been adopted mostly in advanced and emerging market economies (iMaPP database).

[25] These buffers enhance the stability of institutions considered 'too-big-to-fail' from a domestic perspective and help reduce the risk of consequent 'domino effects' across the banking sector (BCBS, 2012; IMF, 2014a; ESRB, 2018). By increasing resilience, D-SIB buffers can lower both the probability and severity of banking crises and dampen overall volatility.

paper developed in 2021 was broadly based on the Basel D-SIB principles (Basel Committee for Banking Supervision, BCBS, 2019), using size, substitutability, complexity, and interconnectedness indicators.

49. There are currently no dedicated capital measures to address risks from the sovereign-bank nexus. Relatively high returns and zero risk weights on domestic sovereign exposures compounded by large fiscal financing needs led to a high concentration of government securities on bank balance sheets. High concentrations of sovereign exposures can pose systemic risks related to banking system solvency—as illustrated by the DDEP—and liquidity, in addition to restraining private sector credit.

50. Despite relatively high prudential requirements, no macroprudential capital buffers have been activated to absorb shocks. Partly due to the recent financial stress, all legally incepted buffers under the CRD, such as the CCyB, D-SIB, and CCoB, have been set to zero percent, with the CCoB expected to be restored to 3 percent in early 2026. Consequently, minimum capital requirements are currently unprotected by regulatory buffers, leaving banks near to the threshold vulnerable to breaches or defensive deleveraging in the event of losses. While clear evidence for developing countries is still emerging, empirical studies on advanced countries suggest that banks' proximity to the CCoB amplified the impact of shocks during the pandemic (Berrospide et al., 2021; Couaillier et al., 2022; Mathur et al., 2023). This includes evidence that proximity to the CCoB resulted in a contraction in lending, and also an increase in bank funding costs (BCBS, 2021). This points to the need for releasable buffers above the CCoB during good times to support loss absorption and credit provision in periods of aggregate stress.

Liquidity and Currency Risk Measures

51. There are currently no formal prudential liquidity requirements, although the BoG is in the process of implementing an LCR framework. The central bank has employed the CRR to manage banking system liquidity, primarily for monetary policy purposes. The dynamic CRR is inversely calibrated to the LTD ratio—banks with higher lending relative to their deposit base face lower reserve requirement—reflecting developmental rather than prudential objectives.[26] Simple liquidity ratios, such as ratios of liquid assets to total assets and to short-term liabilities, are used only for monitoring. BoG staff are developing a formal LCR requirement as well as liquidity risk management and monitoring tools and requirements in line with Basel standards. Some banks have already been using the LCR for internal monitoring.

52. **Currency risks are primarily managed through NOP limits.** Previously, the aggregate NOP limit was set at 10 percent, with the single-currency limit at 5 percent.[27] In October 2025, this was revised to an asymmetric range of -10 percent to 0 percent, effectively prohibiting long single-currency positions, partly in support of exchange rate stabilization (as noted in MPC press release and transcript). There are currently no macroprudential tools targeting currency-induced credit risks, as BoG staff note that most FX borrowers are naturally hedged—for example, commodity exporters earning income in US dollars.

Borrower-Based Measures

53. Given the low share of household credit, the BoG has not introduced any macroprudential BBMs. Household loans account for only about 5 percent of banking assets, with residential mortgages making up less than 1 percent—indicating an undeveloped household credit market that does not pose

[26] For a detailed discussion and an assessment of the dynamic CRR, see IMF Staff Report July 2025. The report noted that the BoG plans to review the CRR framework to eliminate the tiering mechanism and lower the effective reserve requirement.

[27] An extensive assessment of NOP limits' impact on FX market was made in the 2024 IMF TA report on FX Market Operations.

immediate systemic risks, despite high household NPLs. As the banking sector gradually recovers from the DDEP and monetary policy rates normalize, banks are expected to increase lending to the private sector, including households.

Process for Tool Deployment

54. A regular macroprudential process for the deployment of tools is yet to be established. While BoG staff regularly conduct financial system surveillance and risk monitoring for MPC and FSC meetings, these activities are not yet explicitly geared toward the deployment of macroprudential tools. This gap likely reflects the absence of established frameworks to guide tool activation, operation and decision-making. However, BoG staff did assess the impact of the DDEP on the resilience of the banking sector, which helped design the regulatory reliefs that were subsequently implemented.

C. Recommendations

Systemic Risk Monitoring

55. The BoG should enhance data for systemic risk analysis—particularly in areas such as broad and sectoral credit and real estate. While data coverage for the banking sector is generally adequate, gaps remain in other areas. Developing a comprehensive credit indicator encompassing bank, nonbank, and cross-border debt would provide a broader view of private nonfinancial sector indebtedness (see broad credit in BCBS guidance, 2010). Credit and nominal GDP series should be adjusted for structural breaks and seasonality. Credit portfolio data should be complemented with information on new lending—covering volumes, interest rates, and underwriting standards—disaggregated by sector. Household data should be enhanced by classifying loans by purpose (e.g., residential mortgages, uncollateralized housing, consumer, and other credit). The BoG should continue its interagency efforts to develop real estate sector data, including price indices and transactions for residential and commercial markets. Leveraging loan-level data from the credit and collateral registers, and if feasible linking it to corporate financial statements and household income data, would significantly improve asset quality analysis. More generally, the BoG should anticipate emerging data needs for financial stability and consider creating a simple, integrated database of macroeconomic and financial sector indicators to enhance efficiency and consistency.

56. Systemic risk analysis should be further strengthened with forward-looking assessments. Identification of systemic risk should be forward-looking, based on existing vulnerabilities, potential shocks, and transmission channels—envisioning their impact over a longer horizon. Risk assessment should be complemented with indicators such as short-term delinquency rates (30- and 60-days past due), NPLs by currency, and NOPs by asset-liability maturity term, as well as aggregate statistics based on monthly loan-level data from the credit register. Conducting sectoral credit analysis—distinguishing between commodity exporters and other private sector borrowers—would offer a granular view of indebtedness. Continued use and refinement of joint liquidity-solvency sensitivity analyses remains important, given the concentration of banking sector exposures to sovereign securities largely held to maturity. Once a credit register is combined with income data and financial accounts, the BoG should develop an analytical framework to assess credit risk and borrower resilience to income, inflation, and interest rate shocks.

Macroprudential Policy Measures

57. The mission recommends that the BoG clearly defines macroprudential policy measures and assigns responsibility over their operation. A tool should be considered macroprudential if its primary

purpose is to contain systemic risk.[28] Within that set, the FSD should be responsible for tools requiring active adjustment and calibration based on analytical work in response to evolving systemic risks—such as capital-based measures (e.g., D-SIB, CCyB and any other releasable buffers) and BBMs. The BSD should maintain responsibility for enforcing these measures, consistent with its broader prudential supervision mandate. Macroprudential measures should be explicitly linked to intermediate objectives and aligned with the nature of systemic risks, while maintaining sufficient flexibility to incorporate new tools as envisaged in the overarching strategy.

58. Once the banking system recovers, resilience should be strengthened by building macroprudential capital buffers to absorb shocks and maintain the provision of financial services. Although Ghana's minimum prudential capital requirements are more conservative than international standards, additional buffers would be needed to mitigate potential systemic risks. Beyond restoring the CCoB and conserving it through the cycle, the BoG should implement and activate macroprudential buffers, including the D-SIB HLA requirements, CCyB, and others as needed. A mix of usable buffers (e.g., CCoB and D-SIB) and releasable buffers (e.g., CCyB) may enable banks to absorb losses and continue lending during systemic stress. Given the ongoing recovery from the DDEP, buffers could be introduced once profitability is durable, solvency is secure, and credit growth is no longer constrained by capital. Buffer implementation should be phased in after industry consultations. The decisions regarding the composition and size of buffers should be taken in the context of the overall capital stack in the banking sector, as overly stringent requirements could hinder financial deepening. Insufficient buffers, on the other hand, risk excessive leverage and weakened resilience, exposing the banking system to instability and the economy to severe downturns. To alleviate this tension, broader structural policies may be needed to improve access to credit.

59. The mission recommends developing and implementing a transparent D-SIB framework, with buffers proportionate to the systemic importance of each designated institution.[29] Publishing the D-SIB framework will strengthen BoG's credibility and reduce implementation costs.[30] Given that Ghana's banking system is not very concentrated, care should be taken not to designate too many institutions as systemic (see Section IV A for detailed technical guidance on the D-SIB framework). Two key principles should apply. First, an institution should be considered systemic only if its failure would significantly disrupt the broader provision of financial services—beyond its own operations—based on size, interconnectedness, complexity, and non-substitutability (including payments). Second, buffer requirements should reflect the degree of systemic importance of each designated institution. To address overall financial fragility, the BoG should complement the D-SIB framework with other macroprudential tools, including releasable buffers and liquidity requirements.

60. The BoG should develop and implement a transparent CCyB framework to ensure releasable policy space for supporting credit in downturns. Despite its legal inception, the CCyB remained at zero, leaving the BoG without releasable buffers during the pandemic and the DDEP, as evidenced by the

[28] The primary criterion for a prudential measure to qualify as macroprudential is whether its application is driven mainly by systemic risk considerations, rather than solely by the safety and soundness of individual institutions or the interests of claimholders (see also IMF, 2013).

[29] The D-SIB framework has become a core component of macroprudential policy toolkits in many advanced and emerging economies (IMF Macroprudential Survey, 2025). In Africa, several jurisdictions—including South Africa, Nigeria, and Uganda—have introduced D-SIB frameworks tailored to the structure and risk characteristics of their domestic banking system.

[30] As BoG continues enhancing the banking resolution framework, macroprudential D-SIB designation could also be used as a starting input to systemically important institution designation for resolution purposes, as there is some overlap between the two frameworks.

relaxation of the CCoB.[31] To address this gap, the BoG should adopt a simple and transparent CCyB framework, with details provided in Section IV. Given Ghana's exposure to external shocks unrelated to credit cycles and the challenges in identifying excessive credit growth, the BoG could also consider maintaining a long-term positive buffer rate, such as the positive neutral (PN) CCyB (see IMF departmental paper Miettinen and Nier, 2025).[32] Such a framework allows early activation even before cyclical risks emerge, tightening as vulnerabilities grow, and releasing when risks materialize. This would enable banks to accumulate capital gradually, spread out costs, and provide BoG policy space during financial downturns.[33] Such a positive neutral level could be introduced even in the absence of a well-developed framework for adjusting CCyB rates cyclically.

61. The BoG could consider legally adopting a releasable sectoral buffer to address potential sectoral systemic risks, as needed. Broad-based tools can be inefficient when risks are narrowly focused; a sectoral capital buffer would allow targeted intervention—either directly on affected exposures or across all exposures, calibrated to the intensity of sectoral systemic risk. The buffer should be relaxed once risks subside or materialize. Potential applications include concentrations in large, indebted corporates, sovereign exposures, or unhedged FX borrowers. For risks confined to individual banks, Pillar 2 measures would be appropriate, which can be preferred also for political economy reasons (see below).

62. The BoG should implement a carefully calibrated capital measure to mitigate sovereign risks without triggering disorderly unwinding of sovereign exposures. Prudential tools—such as buffers or Pillar 2 add-ons—should strengthen banking system's resilience while incentivizing diversification.[34] Sweeping measures like broad-based increase in risk weights or ratings-based system could cause severe cliff effects. Instead, measures must be targeted and proportional to each bank's sovereign concentration, phased-in gradually, to maximize effectiveness and minimize side effects. Options include a sectoral buffer applied to total RWA with nonlinear calibration, or Pillar 2 measures such as risk-weight add-ons or buffers for concentrated sovereign exposures. Ultimately, the success of the implemented policy depends on fiscal sustainability and opportunities for sustainable credit growth in the private nonfinancial sector.

63. The mission recommends the adoption of a complete set of liquidity requirements aligned with international standards while reflecting Ghana's specificities. Delayed or partial implementation risks systemwide liquidity strains that compound solvency challenges. The BoG should prioritize timely adoption of the LCR framework and complement it with NSFR requirements to ensure stable funding structure, considering LTD limit as an intermediate safeguard. These requirements should be tailored to Ghana's specificities, including the relative illiquidity of government securities. Additionally, to complement

[31] According to the international practice and Basel standards, all conventional capital buffers—such as the CCoB, CCyB, or D-SIB—are usable. That is, individual banks can draw down those buffers in times of stress, subject to distributional restrictions. However, only the CCyB is meant to be released or relaxed by the authorities upon incipient systemwide stress or materialization of systemic risk to support bank stability by allowing loss absorption without distributional restrictions.

[32] PN CCyB entails a positive CCyB when cyclical risks are neutral—not yet elevated, nor materialized.

[33] The BCBS (2022) newsletter "supports and sees benefits in the ability of authorities to set a PN CCyB rate on a voluntary basis. Authorities that implement such an approach should maintain compliance with the existing Basel standards, including the agreed calibration of the minimum requirements and other regulatory buffers. The Committee also notes that circumstances vary across jurisdictions, including the macroeconomic conditions and the range of macroprudential tools available." BCBS later discussed a range of PN CCyB practices (BCBS, 2024), with the approach welcomed by some major central banks, including the ECB and the BoE, and has been increasingly adopted in a number of countries, including South Africa, Chile, Georgia, Lithuania, Spain.

[34] Capital measures have the advantage over exposure limits as the former provide resilience by strengthening solvency positions. Releasable buffers have the advantage that they can be taken off in periods of stress. For more information on IMF's advice to other countries in FSAPs, see WAEMU, South Africa, Maldives, Romania, Italy.

NOP limits, LCR and NSFR requirements could be differentiated by currency to adequately cover FX risks including maturity mismatches. While liquidity regulations may be simplified for practical implementation, they should remain sufficiently conservative to ensure robust risk management.

64. The BoG should prepare for legal adoption of BBMs as household lending market develops. Although household lending is currently insignificant, it is likely to grow as banks diversify away from sovereign exposures. To avoid a situation where vulnerabilities emerge faster than regulation, the BoG should proactively establish a legal framework that enables timely deployment of BBMs. Once the household credit market matures, BBMs could include a complementary set of equity-based measures—such as LTV ratio—and income-based measures—such as DSTI and debt-to-income (DTI) ratios. These tools would help contain excessive credit and housing cycles, strengthen household resilience to shocks, and support overall financial stability. Initially, the measures could serve as guardrails and later be recalibrated and tightened as the sector expands and more granular household loan data becomes available.

65. Continued close coordination with other regulators could help address potential macroprudential policy leakages. These leakages typically occur in three forms: 1) cross-portfolio within banks, 2) cross-sectoral to nonbanks, and 3) cross-border to foreign financial institutions. The first type arises when banks reallocate from more regulated to less regulated assets, such as sovereign debt or household mortgages—typically lower-risk and less capital-intensive with lower risk weights.[35] While such reallocation is part of the intended effect of macroprudential measures, it can create new concentration risks. In these cases, macroprudential settings should be readjusted to address emerging vulnerabilities. The second type of leakage occurs when activities shift to less regulated institutions, such as nonbanks, which can lead to excessive borrowing by the nonfinancial sector. To mitigate this risk, policy settings should be coordinated with other domestic regulators—such as through the FSC—and applied broadly.[36] The third type involves cross-border borrowing, often by large corporates that can access foreign credit providers, such as through cocoa syndicated loans. Addressing this leakage is more challenging and requires cooperation with foreign regulators, including reciprocity arrangements (IMF-FSB-BIS, 2016).

66. A robust macroprudential policy framework should rest on a strong foundation of micro-prudential regulation and supervision. Micro-prudential regulation and supervision typically focus on the safety and soundness of individual institutions, while macroprudential policy aims to contain broader systemic risk. Both policies need to work together to ensure financial stability. For example, while capital buffers can address certain systemic risks, their effectiveness depends on accurate assessment of risk weights by microprudential regulation. Without effective microprudential supervision, regulators cannot ensure compliance with both micro- and macroprudential requirements. Therefore, it is essential for the BoG to continue strengthening microprudential regulation and supervision and aligning them with international standards, including Basel Core Principles.

[35] For example, see Cappelletti et al. (2024) paper on European D-SIB buffers and portfolio shifting, and references therein.

[36] To mitigate leakage effects, consideration could be given to extending the capital buffer requirements to specialized deposit-taking institutions along with the planned sectoral reforms, consolidation, and strengthened solvency.

IV. Technical Guidance on D-SIB and CCyB Frameworks

A. The D-SIB Framework: Overview and Recommendations

Overview

67. The mission reviewed FSD's draft D-SIB framework and identified several areas for improvement. The review focused on strengthening the stability, robustness, and transparency of the draft approach, using the Basel D-SIB standards (BCBS, 2019) as a benchmark. Key components assessed included the identification methodology and calibration of HLA requirements. Priority areas included indicator selection and weighting, application of supervisory judgement, threshold setting, and HLA rate calibration. Additional considerations covered data infrastructure, disclosure requirements, communication strategies, and supervisory coordination.

68. The mission developed an Excel-based toolkit tailored to Ghana data to support the operationalization of the D-SIB framework. The toolkit covers a full sample of 23 banks as of June 2025, and integrates key functionalities, including validating and analyzing indicators, computing D-SIB scores, and evaluating alternative parametrizations. Its analytical modules and visualizations provide a practical tool for ongoing monitoring of systemic risk across institutions.

69. The mission provided hands-on training on the D-SIB toolkit during in-person workshops to strengthen practical implementation skills. The training covered all key components of the framework, including D-SIB identification and calibration of HLA requirements. Participants engaged in hands-on exercises to evaluate alternative indicators and weighting schemes, assess the implications of adjusting cut-off thresholds, apply supervisory judgment, and calibrate the corresponding HLA requirements—ensuring readiness for effective design and implementation of the D-SIB framework.

Recommendations

70. The authorities should align the indicators and category weights for D-SIB identification with the structure of Ghana's banking system. The mission worked closely with the authorities to select appropriate indicators within the four bank-specific categories for D-SIB identification (Table 2).[37] For the size category, a single indicator—Total Exposures—can approximate each bank's systemic importance, consistent with international best practice.[38] The substitutability category should reflect Ghanaian banks' traditional business model focused on loan provision and deposit collection; therefore, including 'Private Loans' and 'Private Deposits' would help measure the impact of a bank's distress on its core business lines. Additionally, 'Payment Activity' within this category could incorporate sub-indicators that capture banks' role in supporting mobile money and payment system provider (PSP) interoperability, settlement, and liquidity. Finally, the category weights may be adjusted to account for the relatively lower complexity and limited cross-border exposures of Ghana's banking system.

[37] The bank-specific categories include Size, Interconnectedness, Substitutability, and Complexity (BCBS, 2019).

[38] Most jurisdictions adopt a single indicator for the Size category. The mission recommended transferring the indicators Number of Depositors and Uncovered Deposits proposed in the draft FSD framework to quantitative indicators used to inform supervisory judgment (see also EBA (2014)).

Table 2: Illustrative Example—Indicators and Weights for the Revised D-SIB Framework

ILLUSTRATIVE EXAMPLE (tentative changes in blue)		Draft D-SIB framework (FSD, 2021)	
40%	**Size**	**50%**	**Size**
40%	Total Exposures	40%	Total Exposures
	No. of Depositors	5%	No. of Depositors
	Uncovered Deposits	5%	Uncovered Deposits
25%	**Interconnectedness**	**20%**	**Interconnectedness**
12.5%	Intra-Financial System Assets	10%	Intra-Financial System Assets
12.5%	Intra-Financial System Liabilities	10%	Intra-Financial System Liabilities
25%	**Substitutability**	**10%**	**Substitutability**
6.25%	Payments Activity	5%	Payments Activity
6.25%	Branch Network	5%	Branch Network
6.25%	Private Sector Loans		
6.25%	Private Sector Deposits		
10%	**Complexity**	**20%**	**Complexity**
3.33%	Cross-Jurisdictional Liabilities	7.5%	Cross-Jurisdictional Liabilities
3.33%	Cross-Jurisdictional Claims	7.5%	Cross-Jurisdictional Claims
3.33%	Trading and AFS Securities	5%	Trading and AFS Securities

Sources: Bank of Ghana and IMF staff calculations.

Notes: The indicators *Number of Depositors*, *Uncovered Deposits* to be moved among the supporting indicators.

71. Raising the cut-off score for D-SIB identification would improve stability and reduce the number of designated institutions in line with international practice. While the BCBS (2019) does not prescribe formal guidance on cut-off rates, empirical evidence indicates that most jurisdictions identify fewer than 10 D-SIBs (see Annex I, Figure A3).[39] The mission emphasized that the threshold should clearly differentiate systemic from non-systemic banks and align with international standards to strengthen credibility and stability over time (Table 3, Figure 2). Illustrative examples provided by the mission identified four or five D-SIBs based on Ghana's banking sector data.

72. The application of supervisory judgment should be guided by a transparent use of supporting indicators. Across jurisdictions, the degree of discretion varies and is sometimes constrained by ambiguity and limited transparency (see, e.g., EBA, 2020, ECB, 2025). The authorities could consider using quantitative supporting indicators (such as the number of depositors) to calculate implied D-SIB scores.[40] For banks near the cut-off threshold, supervisory judgment could be exercised by comparing each bank's score for relevant supporting indicator against the threshold and designating it as a D-SIB if the score is exceeded (see, e.g., ACPR, 2022). This approach would clarify the role of supporting indicators and reduce the need to adjust other parameters, such as cut-off thresholds. In exceptional cases where qualitative indicators are used, it is essential that the authorities provide and disclose a clear rationale for the application of supervisory judgement.

[39] There is currently no comprehensive database that lists all domestically important banks across jurisdictions together with their applied D-SIB rates.

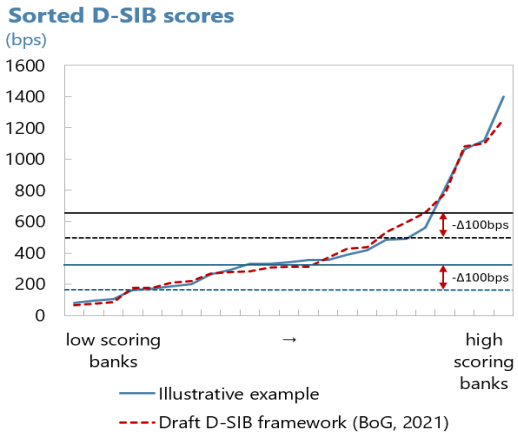
[40] For a list of potential supporting indicators, see for example, EBA (2014).

Table 3. Number of Identified Banks and -Δ100bps Change in Cut-off Score

	Cut-off rate	ΔCut-off rate
Illustrative example	600bps	-Δ100bps
# od identified D-SIBs	4	+1
Draft D-SIB framework (BoG, 2021)	310bps	-Δ100bps
# od identified D-SIBs	12	+6

Source: IMF staff calculations.
Note: Bank of Ghana data as of June 2025.

Figure 2. Sorted D-SIB Scores and Sensitivity to Changes in Cut-off Thresholds.

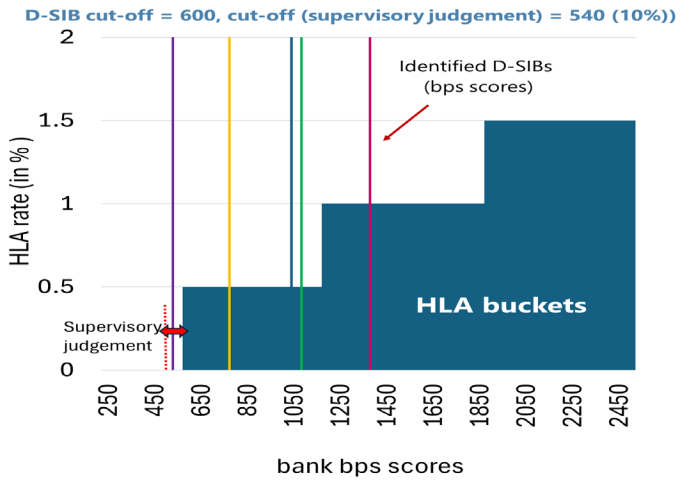


Source: IMF staff calculations.

73. The calibration of HLA requirements should be guided by a clear analytical framework and informed by supervisory judgement. While the D-SIB standards do not prescribe a specific methodology, HLA requirements should meaningfully differentiate banks according to their systemic importance. The draft D-SIB framework adopts a bucketing approach with a supervisory overlay—the most widely used method internationally. Proposed HLA rates for the three buckets are 0.5 percent, 1 percent, and 1.5 percent of RWA (CET1), with banks allocated to the lowest two buckets based on their D-SIB scores. The mission assessed that both the minimum HLA requirement of 0.5 percent and the number of buckets align with established practice in other jurisdictions (see Annex I). To strengthen the framework, a transparent mapping between D-SIB scores and corresponding buckets should be introduced.[41] A clearly defined mapping would enhance the consistency, comparability, and communication of HLA requirements over time. The mission proposed applying a linear function of D-SIB scores, divided into equal-sized intervals, to determine HLA buckets (Figure 3). As with D-SIB identification, supervisory judgment may be exercised to reassign a bank to a different bucket where warranted.

[41] The draft FSD methodology assigns banks to buckets with D-SIB score intervals of varying lengths, defined according to score percentiles.

Figure 3. Mapping of D-SIB Score to HLA Buckets



Sources: Bank of Ghana, IMF staff calculations.

74. The D-SIB framework would benefit from establishing regular data collection and enhancing the analysis of the cross-sectional dimension of systemic risk. Currently, the draft methodology relies on ad hoc data collection and information drawn from BoG's supervisory data warehouse (ORASS), and there is no dedicated D-SIB database.[42] Following adoption of the framework, regular data collection and integration of D-SIB data into ORASS are expected. Consolidating this data will facilitate effective information sharing, enhance systemic risk surveillance, and support policy coordination.

75. The BoG should conduct regular assessments of the systemic importance of Ghanaian banks and disclose the results to stakeholders. The D-SIB framework should provide for an annual review of designations and associated HLA requirements, completed by a pre-determined date each year. Following the review, the BoG should adopt a formal decision, notify designated institutions, and publicly disclose the list of D-SIBs along with their corresponding HLA requirements to promote transparency.[43] In addition, the framework should include publication of detailed information on the methodology used for D-SIB assessments and HLA calibration, including the role of supervisory judgment.

76. The BoG should ensure that the D-SIB framework is closely integrated with supervision and resolution functions. The framework forms part of a broader policy approach to systemically important banks, built on three complementary pillars: enhanced loss absorbency, intensified supervision, and improved resolvability (IMF, 2014a; FSB 2010; FSB, 2014). Identification and oversight of D-SIBs should inform the BoG's broader supervisory and resolution priorities. Existing strong interdepartmental collaboration within the BoG should extend to incorporating D-SIB considerations into the Bank's supervision, resolution, and macroprudential functions. Ongoing efforts to strengthen risk-based and consolidated supervision should account for risks posed by D-SIBs, while recovery and resolution planning should be prioritized for all designated institutions. Where appropriate, the degree of resolvability should be factored into D-SIB assessment (EBA, 2014).

[42] See also Section III.

[43] See for example, United Kingdom, New Zealand, Ireland or Singapore.

77. The BoG should enhance cross-border coordination through supervisory colleges and engagement with home authorities of foreign-owned D-SIBs. Ghana's banking system is largely foreign owned, with significant participation from regional and global banking groups.[44] While the BoG has signed bilateral MoUs and participates in supervisory colleges organized by home authorities, these arrangements could be deepened. Active engagement in supervisory colleges and regular exchange of information on systemic risk and supervisory assessments with home supervisory authorities of foreign-owned D-SIBs are essential. Furthermore, MoUs should include specific provisions on information sharing and policy coordination regarding subsidiaries of cross-border banking groups designated as D-SIBs in Ghana.

B. The CCyB Framework: Overview and Recommendations

Overview

78. The mission provided guidance on both the methodology and practical implementation of Ghana's CCyB framework. Discussions focused on the activation, tightening, and release of the CCyB rate. The mission examined potential limitations of the Basel credit-to-GDP gap and proposed alternative indicators of excessive credit growth to inform CCyB decisions. It recommended complementary indicators to identify credit cycle phases and vulnerability build-up. The use of composite indicators was also explored. In addition, the mission developed a buffer guide mapping credit indicators to indicative CCyB rates using the Basel (2010) formula and offered practical decision-making tools, including a decision tree, supporting indicators, and approaches to integrate expert judgement. Finally, it reviewed the methodological differences in calibrating the standard CCyB versus the PN CCyB.

79. The CCyB guidance has been incorporated into an analytical toolkit developed by the mission. The toolkit consolidates the data inputs needed to estimate the credit-to-GDP ratio and calculate alternative credit indicators. It provides a unified platform to organize, visualize, and benchmark core credit and supporting indicators relevant for CCyB activation, tightening, and release. Indicators are assessed against historical distributions and crisis benchmarks using percentile positions and visualization tools that include heatmap risk categories, sparklines, and trend markers. The toolkit also enables calibration of thresholds and indicative CCyB rates.

80. The mission delivered hands-on training of the CCyB toolkit during in-person workshops. Sessions included practical exercises in R, covering estimation of the Basel credit-to-GDP gap using the Hodrick-Prescott (HP) filter, mapping credit indicators to CCyB rates, and conducting a policy simulation exercise. Participants analyzed the current phase of the financial cycle and developed narratives for communicating CCyB decisions to the public. The training also addressed key aspects of the toolkit to support its integration into FSD's operations, including adding new indicators, and data updates.

Recommendations

81. The authorities should adopt a methodology for the activation, build-up and release of CCyB buffers, based on the guidance provided by the mission. This framework specifies how to determine the CCyB rate at each stage: raise the buffer when systemic risks increase, guided by credit cycle and

[44] The share of foreign banks in total bank assets was 61.2 percent as of June 2025. All fourteen foreign banks (out of total 23) operate as subsidiaries. The major foreign banks include among others Ecobank Ghana Plc (Togo), Absa Bank Ghana Ltd (South Africa), Stanbic Bank Ltd (South Africa), United Bank for Africa Ltd (Nigeria), or Standard Chartered Bank Ghana Ltd (UK).

complementary indicators and supervisory judgement; reduce the buffer as risks recede or crystallize. A gradual decline in risks warrant incremental reductions in the buffer, while abrupt crystallization requires swift release, potentially to zero.

Figure 4. Credit-to-GDP Ratio and HP-Filtered Credit Gap (Basel Methodology, λ = 400,000)

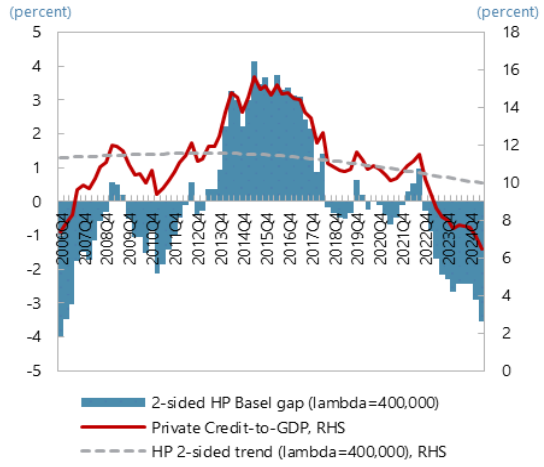
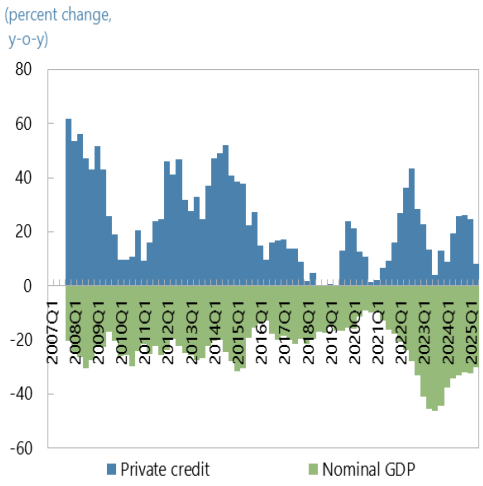


Figure 5. Credit-to-GDP Gap–Year-on-Year Contributions of Nominal Private Credit and Nominal GDP



Sources: Bank of Ghana, Haver, IMF staff calculations.

82. The measure of private credit should fully capture the buildup of cyclical vulnerabilities. Currently, the credit-to-GDP ratio reflects only universal bank lending to the private sector. However, discussions revealed that a considerable share of loans to mining and cocoa firms consists of cross-border syndicated loans with limited domestic bank participation, which are excluded from BoG's regular supervisory reporting. In line with BCBS (2010) guidance, the numerator of the Basel credit-to-GDP and related metrics should include all credit to non-financial private entities—regardless of form or lender—covering loans from domestic and foreign banks as well as non-banks, through both domestic and cross-border channels.

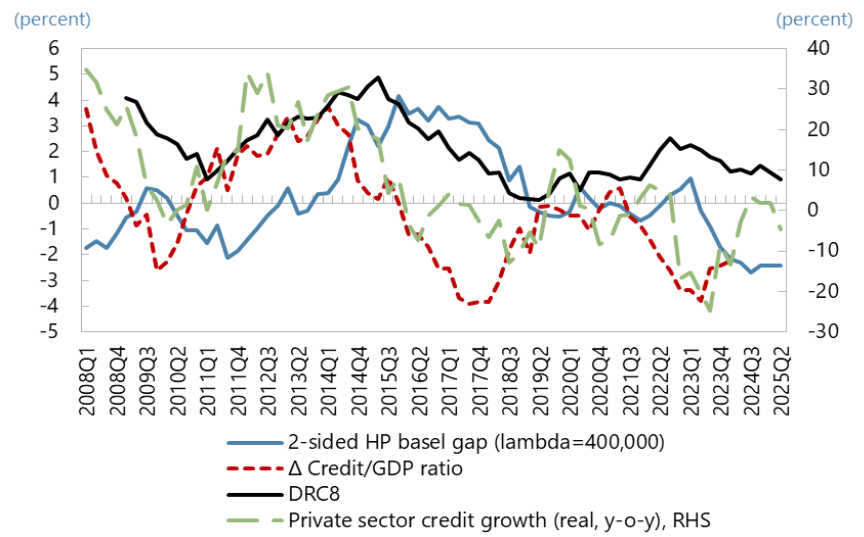
83. The authorities should consider alternative credit indicators for CCyB calibration, given the limitations of the Basel credit-to-GDP gap in Ghana's context.[45] The Basel measure is sensitive to estimation methods, short sample length, assumed cycle duration (lambda), and structural features such as high GDP volatility, FX valuation effects, and potential structural breaks (Figures 5 and 6, see also Annex II).[46] To address these issues, the mission proposed three complementary indicators—differenced relative credit (DRC), two-year change in the credit-to-GDP ratio, and real credit growth (Figure). These indicators require no model estimation and have been successfully applied in other jurisdictions.[47] Preliminary analysis suggests they provide earlier, and stronger signals of credit cycle dynamics compared to the Basel credit-to-GDP gap for Ghana (see Annex II).

[45] The credit-to-GDP gap is typically the starting point for assessing excessive credit growth and determining CCyB activation or tightening. BCBS (2010) guidance recommends using a HP filter with a smoothing parameter lambda of 400,000.

[46] The sample period covered 2006: Q4–2025:Q2

[47] For a discussion of DRC, see for example, Kauko et al (2019) or Bank of Spain (2016); for Two-year change in the credit-to-GDP ratio, see Lang et al. (2019).

Figure 6. Alternative Credit Indicators vs Basel Gap



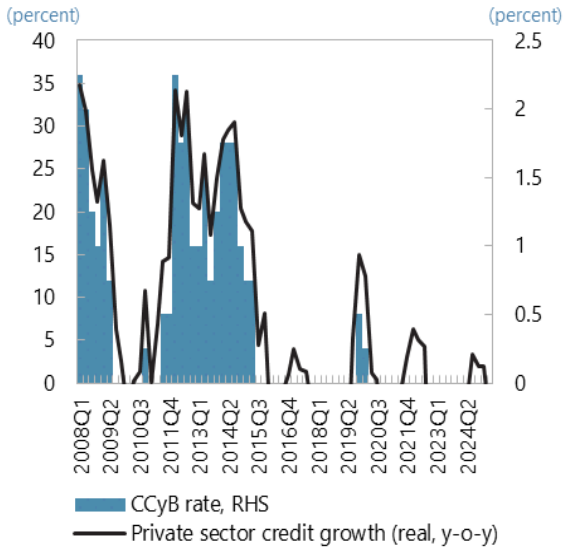
Sources: Bank of Ghana, Haver, IMF staff calculations.

84. The CCyB buffer size should follow the buffer guide developed by the mission, which applies the Basel formula to link a credit indicator to the CCyB rate. Under Basel guidance (BCBS, 2010), the CCyB remains at zero when the credit-to-GDP gap is below a lower threshold, then rises linearly until reaching its maximum at an upper threshold. In the mission's guide, thresholds were set at fixed percentiles of historical distributions of the key credit indicators (Figure 7): the lower threshold (L) enables early activation ahead of past distress periods, while the upper threshold (H) caps the maximum historical value. Indicators were assessed based on activation timing and implied CCyB paths. DRC and real credit growth provided robust early signals for activation during the post-Great Financial Crisis (GFC) downturn (2009–10) and the mid-2010s banking crisis, whereas none signaled vulnerabilities before the 2023 DDEP, which was unrelated to excessive credit (Figure 8). The analysis supports a transparent, flexible CCyB framework and underscores the limited role of credit indicators in detecting risks beyond the credit cycle.

85. CCyB decisions should combine credit indicators with supporting indicators and expert judgement. Supporting indicators include credit market metrics and macro-financial aggregates—such as lending rates and spreads, lending standards, asset prices and volatility, and domestic and external macro indicators.[48] Profitability and resilience indicators are also critical, as profitable banks can hold sufficient voluntary buffers to absorb a CCyB increase (Figure 9). During hands-on sessions, the mission emphasized the interpretation of indicators, the exercise of discretion, and methods for aggregating conflicting signals through composite indicators, sharing sample codes with the authorities.

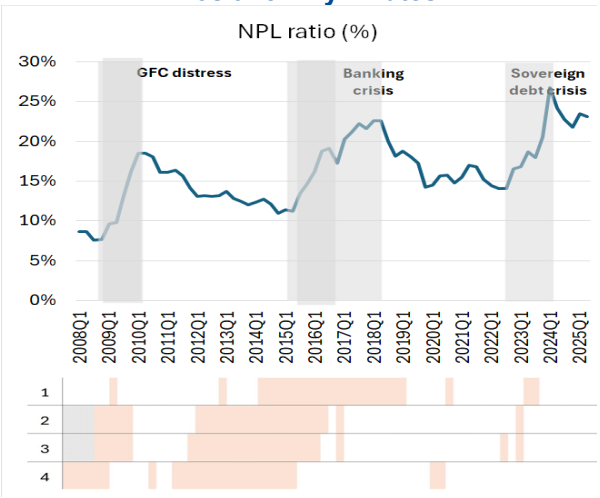
[48] Ireland, South Africa, and Netherlands are good examples of indicators for the surveillance of cyclical systemic risks.

Figure 7. Illustrative Example–Mapping Real Private Sector Credit Growth to CCyB Rates



Source: IMF staff calculations.

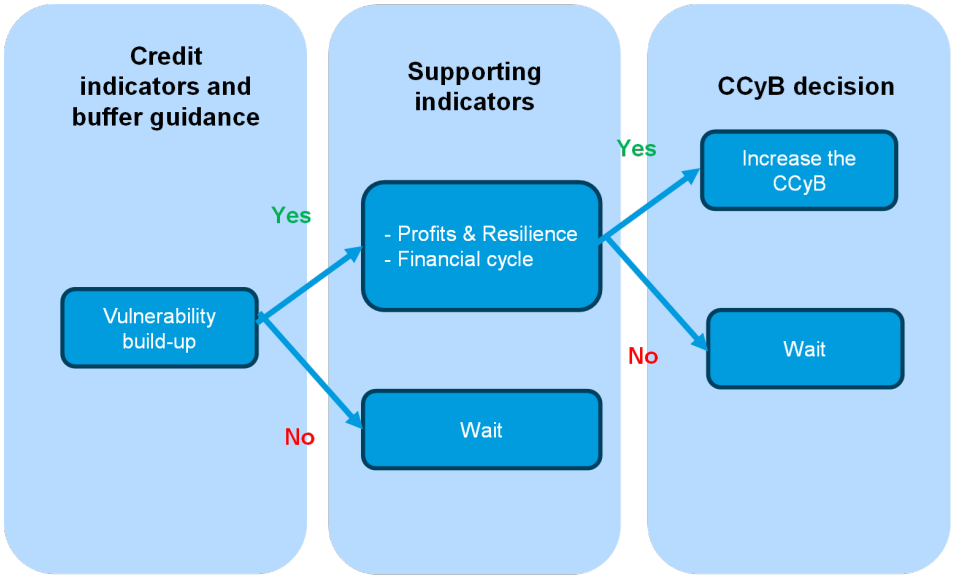
Figure 8. NPL Ratio, Credit Indicators, and Positive CCyB Rates



Sources: Bank of Ghana, Haver, and IMF staff calculations.

Notes: The magenta bands indicate positive CCyB rates derived from credit indicators (from top–1 Basel gap, 2 DRC, 3 Δ credit/GDP ratio, 4 real private credit). The grey areas represent periods of financial distress, characterized by pronounced increases in NPL ratios.

Figure 9. Decision Guide for CCyB Activation and Build-Up



Source: IMF staff.

86. The release of the CCyB should reflect the nature and magnitude of declining cyclical risks. A prompt partial or full release is essential to prevent sharp credit contractions as systemic losses materialize.[49] Gradual relaxation may be appropriate when risks durably recede in a benign manner. Decisions should rely primarily on indicators of bank losses and capital constraints—distinct from leading credit indicators—to ensure time-consistent application of the CCyB framework.

87. As an initial step, the authorities should integrate the analytical aspects of the proposed CCyB framework into BoG analytics and flagship reports. While most indicators draw on existing BoG data, effective decision-making requires timely and accurate inputs supported by a robust data management to be incorporated in CCyB analysis and policy making.[50] The analytical layer of the framework should be progressively embedded in key outputs such as the FSR and bi-monthly Macroprudential Risk Assessments to enhance the link between analysis and policy decisions and improve policy communication.

88. The BoG should assess the need to incorporate a positive neutral component into its CCyB framework. As a complex, time-varying instrument, the CCyB requires careful decision-making and clear communication. Strong policy and decision-making mechanisms are essential to avoid inaction bias and ensure timely, effective deployment. To address these complexities, several authorities have recently adopted a PN CCyB approach (Table 4).[51] While its suitability depends on country circumstances BCBS (2022), the PN CCyB introduces a stable component that can enhance policy space, simplify operations, reduce inaction bias, and provide a transparent structure for gradual buffer build-up and release in response to shocks (see also Section III.B).[52]

Table 4. Countries with Past CCyB Activation and PN CCyB Framework Adoption

	Activated CCyB	PN CCyB
High-income economies	32	20
Upper middle-income	5	3
Lower-middle-income	2	0
Total	39	23

Source: IMF's Macroprudential Survey (2025), Miettinen and Nier (2025), ESRB (2025).

Note: Portugal and UAE have adopted the PN CCyB framework but not yet activated CCyB.

89. A well-designed communication strategy for CCyB is essential to ensure transparency and predictability. Stakeholders and the public should clearly understand the CCyB's objectives, methodology, and decision-making process. CCyB rates should be assessed and announced on a regular basis (quarterly or semi-annually). A consistent communication strategy should outline elements of these assessments and decisions, considering overall capital requirements and providing guidance on the CCyB buffer, including

[49] Given the dominance of traditional intermediation models in Ghana's banking sector, the release indicators do not incorporate measures of financial market stress.

[50] The data management for CCyB purposes should ensure consolidation of relevant data from internal and external sources and validation checks to ensure data consistency and completeness. It should by supported by a data registry where data are clearly structured and linked through metadata and identifiers. See also Section III.

[51] The PN CCyB further streamlines the decision-making and communication process by lowering the expected frequency of policy adjustments.

[52] This could be a useful element not just for advanced economies but also for developing countries that are susceptible to external shocks which may be unrelated to credit developments (Miettinen and Nier, 2025).

indicators relevant to cyclical systemic risk. Clear expectations of future CCyB rates are important for banks, given the buffer's time-varying nature. The BoG should be transparent about how buffer settings are determined to help banks manage uncertainty and incorporate the expected CCyB path in their capital planning.

90. Reciprocity arrangements may be considered to ensure consistent coverage of credit exposures to Ghanaian borrowers. For Ghana, this primarily relates to cross-border lending through syndicated loans, which would otherwise fall outside BoG's CCyB decisions. Reciprocity means that home authorities would apply the same (or a higher) CCyB rate to their banks' exposures to Ghanaian counterparties once the BoG activates the CCyB.[53] This approach maintains a level playing field and prevents regulatory arbitrage. Effective implementation requires the BoG to promptly inform home authorities of banks with material exposures to Ghana of CCyB decisions, enabling them to ensure consistent implementation across jurisdictions.

[53] The (BCBS, 2010) provides that reciprocity applies up to a CCyB rate of 2.5 percent of risk-weighted assets and becomes voluntary for any rate exceeding this threshold.

Annex I. The D-SIB Methodology and Toolkit

A. Introduction

1. This annex elaborates on the D-SIB methodology and recommendations outlined in the main text. It builds on a draft D-SIB framework proposed by the FSD in 2021, and a quantitative exercise conducted virtually prior to the main mission in Ghana (November 3–14, 2025). The document aims to help the authorities operationalize the D-SIB framework and strengthen the framework's stability, robustness, and transparency. Key areas of focus include: 1) the selection of indicators and weights for assessing systemic importance; 2) determination of the cut-off threshold for D-SIB designation; 3) application of supervisory judgment; 4) calibration of HLA requirements; and 5) disclosure practices.

2. The guidance should be used in conjunction with the accompanying Excel-based D-SIB toolkit. The toolkit provided the analytical foundation for quantitative assessment and discussions during virtual engagements and onsite mission. It supports validation and analysis of D-SIB indicators, calculation of D-SIB scores, and assessment of alternative parametrizations of the D-SIB framework. The toolkit's analytical modules and visualizations can also be used to enhance the BoG's monitoring of the cross-sectional dimension of systemic risk.

3. The annex is structured into sections covering the data overview, the methodology for D-SIB identification, and the calibration of the HLA requirement.

B. Data and Bank Sample

4. The quantitative exercise covered a sample of 23 banks, representing the entire banking sector as of 2025: Q2. The data provided by the authorities included indicators from the draft BoG D-SIB framework, along with a tentative list of additional indicators suggested by the mission. Data was collected on an ad hoc basis from banks and through supervisory reporting, with supplementary data obtained during follow-up virtual engagements.

5. The D-SIB toolkit provides summary statistics and initial analytical outputs, including visual comparisons of indicators in both absolute levels and relative rankings. Table A1 presents summary statistics for the sample of 23 banks as of the second quarter of 2025.

Table A1. Summary Statistics for D-SIB Indicators (GHS Mn, 23 Banks, 2025: Q2)

	Mean	Std	Min	Max
Size				
Total Exposures	15,728	12,950	1,136	44,981
- No. of Depositors (Proxy by number of Accounts) (in THD)	764	877	129	3,220
- Deposits not undered by the deposit insurance	11,460	7,230	2,209	29,753
Interconnectedness				
- Intra-financial system assets	1,958	2,693	10	12,724
- Intra-financial system liabilities	1,377	1,543	0	5,927
Substitutability/financial bank infrastructure				
- Payments activity	22,010	33,462	0	114,817
- Branch network share	51	37	12	185
- Private sector loans	3,708	3,122	624	11,596
- Private sector deposits	11,024	6,705	2,193	27,238
Complexity				
- Cross-jurisdictional liabilities	117	224	0	755
- Cross-jurisdictional claims	352	468	0	1,683
- Trading and AFS securities	1,514	2,792	0	8,525

Sources: Bank of Ghana and IMF staff calculations.

C. D-SIB Identification

D-SIB Scoring Methodology

6. The Basel D-SIB framework (BCBS, 2019) relies on an indicator-based methodology to measure the relative systemic importance of banks. It organizes indicators into four categories: Size, Interconnectedness, Substitutability, and Complexity.[1] The D-SIB scores are calculated using indicators from these four categories to determine each bank's degree of domestic systemic importance. Each bank's systemic importance score is computed as a weighted average of its category scores. For each indicator, the bank's value is divided by the aggregate value across all banks, converted into a percentage, and multiplied by 10,000 to express the score in basis points.

7. While the Basel principles do not prescribe specific indicators, the BoG selected indicators tailored to the structural characteristics of Ghana's financial system. These scores were used to rank banks by systemic importance, with those exceeding a specified threshold automatically designated as D-SIBs. The BoG can apply national discretion in selecting suitable indicators for the four categories, allowing flexibility to reflect Ghana's specific conditions for D-SIB identification.

8. The BoG can apply national discretion when selecting suitable indicators in the four bank-specific categories for D-SIB identification. The TA report provides recommendations on indicator selection, definitions, and weight allocation (TA report, Table 2). To support this process, the D-SIB toolkit enables simultaneous comparison of alternative framework designs and allows for flexible selection and weighting of indicators. Table A2 presents an indicative set of proposed indicators based on consultations with the authorities.

[1]The scoring approach reflects the fact that systemic risk is not binary by nature and multiple factors across institutions have a potential impact on systemic risk.

Table A2. Indicative Guidance on D-SIB Indicators

INDICATOR	INDICATOR GUIDANCE	COMMENT
Size		
- Total exposures	The total exposure measure used for the Basel III leverage ratio.	A single indicator in the Size category simplifies the framework and aligns with international best practice.
Interconnectedness		
- Intra-financial system assets	Assets of bank and non-bank financial institutions to be considered.	Direct exposures of bank and non-bank financial institutions. Interconnectedness and contagion risks between the banking system and non-banks may not be fully contained by the current regulatory framework in Ghana. The efforts to strenghten the supervision of financial conglomerates through the collaborative efforts of sectoral regulators are ongoing.
- Intra-financial system liabilities	Liabilities of bank and non-bank financial institutions to be considered.	
Substitutability		
- Payments activity	Consider sub-indicators that capture banks' direct and indirect role in mobile money and payment service provider (PSP) activities.	The sub-indicators to gauge banks' role in supporting mobile money and PSP interoperability (cross-network transfer routing), settlement, and liquidity (through branches and agent banking).
- Branch network share	Number of branches	Branch network is explicitly recognized in Art. 87 CRD. Banks' provision of financial inclusion services may be considered a critical function with limited substitutability.
- Private sector loans	Loans to the private sector (non-financial corporates and households, excl. government loans).	Approximate the impact of a bank's distress or failure on the provision of banks' core business lines.
- Private sector deposits	Deposits by non-financial corporates and households (i.e., excluding government deposits).	
Complexity		
- Cross-jurisdictional liabilities	Cross-jurisdictional liabilities	The cross-border exposures of Ghanaian banks primarily take form of correspondent banking and interbank placements.
- Cross-jurisdictional claims	Cross-jurisdictional claims	
- Trading and AFS securities	Financial assets recognised under fair value through other comprehensive income (FVOCI), fair value through profit or loss (FVPL), and derivatives.	Market-based interconnectedness though correlated exposures and mark-to-market valuation effects.

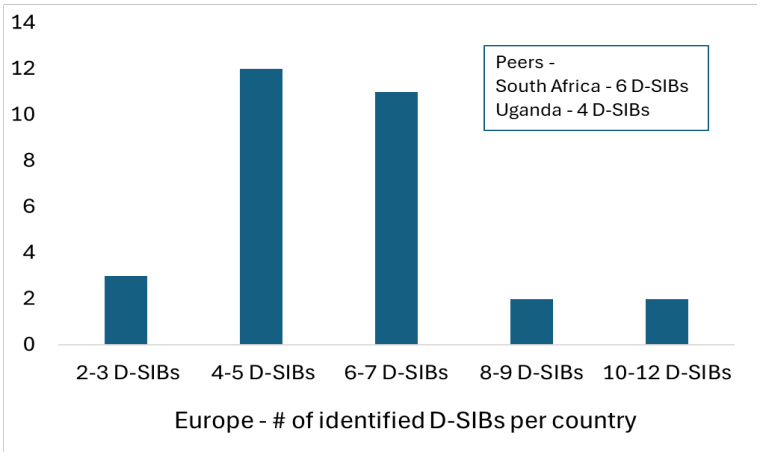
Source: IMF staff.

9. Discussions highlighted important questions regarding the relationship between the D-SIB framework and the sovereign-bank nexus. The D-SIB framework is designed to assess the potential impact of a failure or distress of a domestically important bank on the financial system. Consequently, its categories typically exclude indicators that directly measure sovereign risk, as this falls outside the framework's primary objective. In this sense, the D-SIB framework focuses on risks emanating from D-SIBs rather than on the transmission of sovereign risk to bank balance sheets. That said, certain indicators within the framework may indirectly capture risks related to the sovereign-bank nexus. For example, the indicator 'Trading and available-for-sale (AFS) securities' could serve as a proxy for banks' sovereign exposures, given the significant role of government securities in the portfolios of Ghanaian banks.

D. Determination of Cut-off Score

10. The cut-off score is a crucial parameter in the D-SIB framework, as it determines which banks are designated as D-SIBs. The toolkit facilitates evaluation of the cut-off score. In most jurisdictions, only a small number of banks—typically fewer than 10—are identified as D-SIBs (see Figure A3). The cut-off score should be set to align with observed practice and to ensure that designation is limited to banks that are clearly systemically important.

Figure A3. Number of Identified D-SIBs in Europe and Ghana's Peers



Sources: EBA (2024). IMF Macroprudential Survey (2025).

11. The cut-off threshold should also promote the stability in the D-SIB framework over time. It must clearly distinguish D-SIBs from non-D-SIBs to avoid frequent reclassification. In regions where banks have similar D-SIB scores, setting the cut-off thresholds too low can lead to variability in the number of designated D-SIBs across periods. A higher threshold reduces this sensitivity by creating a clearer separation between banks that are domestically systemic and those are not (see TA report, Table 3, Figure 3).[2]

E. Supervisory Judgement

12. The application of supervisory judgment should be guided by a transparent use of supporting quantitative indicators. The draft framework allows the BoG to override the indicator-based results in exceptional cases, such as adding or removing a D-SIB designation based on supervisory judgment. While these considerations are mostly qualitative, the BoG may consider incorporating quantitative supporting indicators and computing implied D-SIB scores consistent with the core methodology. For banks near the cut-off threshold, scores for selected supporting indicators can be compared against relevant thresholds (see e.g., ACPR, 2022). Clear rules on the use of supporting indicators and supervisory judgment reduces the need to adjust other parameters, such as cut-off thresholds, and enhance the overall robustness of the framework. In limited cases, supervisory judgement may rely solely on qualitative criteria.

13. The toolkit includes indicative quantitative indicators to inform supervisory discretion. Using the quantitative indicators, banks subject to supervisory judgment can be evaluated for D-SIB identification and HLA calibration, using the integrated assessment available in the toolkit.

14. It is important that the BoG provides and discloses a clear rationale whenever supervisory judgement is applied. When a bank with a score below the threshold is designated as a D-SIB, the authorities should publish a brief statement explaining: (a) which optional indicator(s) were used to inform the decision; (b) why these indicators are relevant; (c) why the bank is considered systemically important in relation to these indicator(s).

[2] The 'D-SIB Assessment' tab in the toolkit enables evaluation of the framework's sensitivity to different cut-off thresholds.

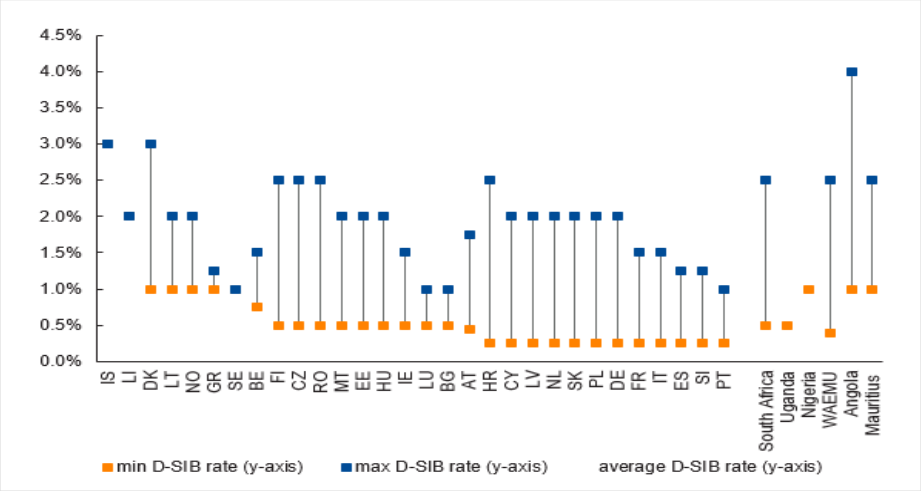
F. HLA Calibration

15. HLA calibration is guided by several underlying principles. First, setting the HLA rate at zero for banks identified as D-SIBs should generally be avoided. Second, the HLA rate should increase with a bank's systemic importance, although the relationship does not need to be strictly linear. Third, the calibration should create incentives for banks not to increase their systemic importance. Finally, applying a flat HLA rate is not appropriate when there are significant differences in systemic importance among banks.

16. The bucketing approach in the draft D-SIB framework is the most popular calibration method. Under this approach, banks are grouped into buckets based on their D-SIB scores, with each bucket assigned a different HLA requirement. In the draft framework, banks are allocated to the two lowest of four pre-defined buckets, leaving the top two bucket(s) empty. The proposed HLA rates for the four buckets are 0.5 percent, 1 percent, 1.5 percent, and 2 percent of RWA in terms of CET1 capital.

17. The proposed minimum HLA requirement 0.5 percent is consistent with international practice (Figure A4)**.** However, the gradient of HLA rates across buckets is relatively shallow, with equally sized steps of 0.5 percentage points above the assumed lowest bucket.

Figure A4. Minimum and Maximum D-SIB Rates in Europe and Ghana's Peers



Sources: EBA(2025) and IMF Macroprudential Policy Survey (2025).

Note: The chart illustrates the range of D-SIB HLA rates applied in Europe and of HLA buckets in Ghana's peer jurisdictions.

18. While the proposed four-bucket structure is adequate, the BoG could consider reducing the number of buckets to three initially and adding a fourth only when the highest bucket becomes populated. The current number of buckets nonetheless preserves the incentive for banks not to increase its systemic importance. Supervisory judgment may also be used to adjust the number or size of buckets if needed.

19. The D-SIB scores can be mapped to HLA buckets using a simple linear function. This mapping is determined by the cut-off threshold for D-SIB identification (a lower bound) and an upper threshold that separates banks into buckets according to systemic importance. The toolkit

provides a dedicated functionality for this purpose (see also TA Report, Figure 3). A clear and transparent mapping enhances consistency, comparability, and communication of HLA requirements over time. The authorities may also use the supporting indicators, similar to those applied in D-SIB identification, to inform bucket allocation.

G. Disclosure of D-SIB Assessment and HLA rates

20. The D-SIB framework should provide for a regular, annual review and publication of results. By a pre-determined date each year, the review should include the D-SIB scores, bucket allocations, and HLA rates for all designated entities. Banks exceeding the published cut-off threshold would be automatically designated as D-SIBs, and the results disclosed. Where a bank with a score below the threshold is designated as a D-SIB, the authorities should publish a brief statement explaining the reasoning (see E. Supervisory Judgement).

21. The D-SIB framework should also entail the publication of the methodology for setting buffer requirements.[3] If the threshold for identifying D-SIBs has been adjusted—either raised or lowered—the reasons for this amendment should be clearly stated. The extent of disclosure, however, should ultimately reflect the BoG's judgement on balancing transparency with prudential considerations.

[3] The BCBS (2019) principles provide that national authorities should document and disclose the D-SIB assessment and HLA calibration methodologies that the framework would require for D-SIBs in their jurisdiction.

Annex II. The CCyB Methodology and Toolkit

A. Introduction

1. This annex presents methodological guidance for the implementation of the CCyB in Ghana. It elaborates on the discussion and recommendations in the TA report on Ghana's macroprudential framework and builds upon the BCBS (2010) guidance, which emphasizes the credit-to-GDP approach complemented by additional indicators robust calibration. The methodology discusses CCyB's objectives and legal foundations, offering a comprehensive basis for operationalizing. This document should be used in conjunction with the accompanying Excel-based CCyB toolkit.

2. The Excel-based CCyB toolkit consolidates data inputs required for estimating the credit-to-GDP and calculating alternative credit indicators. It provides a unified platform to organize, visualize, and benchmark indicators relevant for the CCyB activation, tightening, and release. Indicators are compared against their historical distributions and crisis benchmarks using percentile positions and visualization tools that include heatmap risk categories, sparklines, and trend markers. The toolkit also supports the calibration of thresholds and indicative CCyB rates.

3. The annex is structured around the main components of the CCyB framework. The next section outlines the CCyB objectives and its legal and regulatory foundations.[1] Subsequent sections discuss the key decision stages—activation and tightening of the CCyB, and its full or partial release. The concluding section focuses on related communication and disclosure requirements.

B. Regulatory and Legal Foundations

4. The regulatory foundations of the CCyB are enshrined in the Basel framework (BCBS, 2010). The CCyB is a broad-based, time-varying buffer that aims to increase the banking sector's resilience to adverse shocks. The CCyB is a CET1 buffer requirement set between 0 percent and 2.5 percent of RWA but can be set higher when system-wide risks associated with excessive credit growth or other cyclical systemic risks are judged to be high. It is calibrated in steps of 0.25 percentage point or multiples of 0.25 percentage point and cannot fall below zero. Banks that do not meet the CCyB requirement are subject to restrictions on dividend distributions.

5. The effectiveness of CCyB may be undermined by arbitrage if foreign lending or less regulated entities substitute for domestic bank credit. For foreign entities, the framework features mandatory international reciprocity up to levels of 2.5 percent of risk-weighted assets. The purpose of reciprocity is to make the CCyB more effective and to ensure a level playing field where the CCyB applies to both domestic and foreign banks in a given jurisdiction. The leakages to other less regulated entities may be partly contained if the financial system is predominantly bank-based and/or the scope of regulation allows the CCyB application also to non-banks. In case of Ghana, the Banks and Specialized Deposit-

[1] This section was not included in the D-SIB methodology presented in this Annex, reflecting the more advanced stage of BoG discussions already covered in its draft D-SIB framework from 2021.

Taking Institutions Act and related provisions provide sufficient backstops to prevent leakages from the CCyB application by virtue of the existing supervisory and regulatory remit of the BoG.

6. There is typically a 12-month lead time between the announcement of an increase in the CCyB rate and its effective implementation by banks. A reduction in the buffer can be made effective immediately. If the BoG decides to reduce the CCyB rate, it shall also decide on an indicative period during which no increase in the buffer is expected. Timely activation is critical to avoid procyclicality from a tightening of the CCyB as the process of building buffers takes time (BCBS, 2010).

C. Increasing CCyB

7. The key element in the process of increasing the CCyB is the assessment of the build-up of cyclical risks over time. This assessment is primarily based on the credit-to-GDP approach and complementary credit indicators, in line with the BCBS (2010) guidance. The estimation of the credit-to-GDP gap is a typical starting point for the assessment of excessive credit growth and recommendation on the activation and/or tightening of the CCyB. Credit indicators (credit-to-GDP or alternatives) are then complemented with supporting indicators that provide necessary additional information on the build-up of system-wide vulnerabilities. The ensuing discussion addresses the credit-to-GDP gap, its alternatives, and supporting indicators in further detail.

Credit-to-GDP Gap

8. The definition of private credit in the credit-to-GDP gap calculations should cover all sources of debt funds for the private sector, including funds raised abroad. Ideally, it should include all credit extended to households and other non-financial private entities, irrespective of its form or the identity of the lender. Accordingly, the measure should capture credit provided by domestic and foreign banks, as well as by non-bank financial institutions, whether extended domestically or cross-border. Based on discussions with the authorities, a relatively large share of loans to firms in the mining and cocoa industries in Ghana consists of cross-border syndicated loans with limited participation of domestic banks. These loans are currently not covered in the BoG's regular supervisory reporting. The numerator of the Basel credit-to-GDP and alternative credit indicators should consider all credit extended to non-financial private entities, irrespective of its form and the identity of the supplier of funds, consistent with BCBS (2010) guidance.

9. The BoG conducts the credit-to-GDP analysis on quarterly basis following the 2010 Basel guidance which recommends the HP filter with a smoothing parameter λ=400,000. The credit-to-GDP gap estimates for Ghana may be affected by well-known conceptual and methodological limitations associated with the Basel HP-filtering approach. The results may be sensitive to whether a one-sided or two-sided HP filter is applied.[2] The available sample period (2006: Q4–2025: Q2) lies at the lower end of the data length required for reliable estimation under the Basel smoothing parameter λ=400,000 (Drehmann and Tsatsaronis, 2014).[3] Moreover, the credit-to-GDP gap has proved a challenging indicator in countries experiencing sustained, long-term credit growth amid rapid structural change (e.g., Gersl and

[2] The one-sided HP is better suited to support CCyB decisions in real time.

[3] The smoothing parameter λ is linked to the duration of the financial cycle which is assumed to be longer than that of the business cycle.

Seidler, 2012). In many such countries, the estimated gaps remained negative for a long time after a significant credit boom. Structural features of the Ghanaian economy such as high GDP volatility, FX valuation effects, or potential structural breaks associated with past financial distress, further complicate the credit-to-GDP gap analysis.

10. The mission assessed the robustness of the HP-filtered credit gap estimates by applying one- and two-sided filters and varying sample periods (Figure A5 and Figure A6).[4] The accompanying R and Octave codes were provided to the authorities, including scripts for extended Trend-Cycle models allowing for potential structural breaks (see Mohr, 2005). A comprehensive list of codes, input data, and supporting files is presented in the CCyB Technical Documentation.

Figure A5. Credit-to-GDP Gap Estimates Using One- and Two-Sided HP Filters

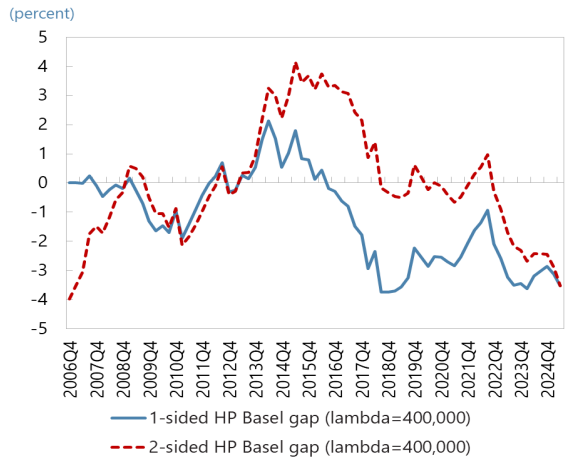
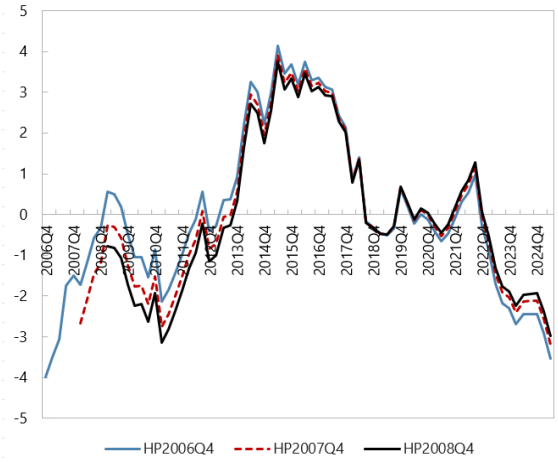


Figure A6. Sensitivity of HP-Filtered Credit-to-GDP Gap to Sample Start Date



Sources: Bank of Ghana, Haver, IMF staff calculations.

11. The limitations related to the Basel credit-to-GDP gap could render assessments of excessive credit unreliable. That said, the estimated gaps provide some, though limited, information on the duration and volatility of Ghana's credit cycle. Ghana has experienced several severe shocks in recent years, which are reflected in the evolution of the credit-to-GDP gap (see also TA Report, Figure 5). The gap estimates appear partly consistent with the notion of a credit cycle hovering around 8 years. However, developments in the late 2010s and early 2020s present a more complex picture, as the gap fluctuated around its long-term trend before declining sharply after the Covid-19 shock and the recent domestic sovereign debt distress episode. The combination of major exogenous shocks (Covid-19 and the sovereign debt crisis) unrelated to the credit cycle likely contributed to the indeterminate credit gap dynamics observed in recent periods.

[4] The mission discussed the use of one- versus two-sided HP filters for estimating the credit-to-GDP gap. In principle, authorities may adopt the real-time one-sided HP filter (as recommended by BCBS) or a two-sided HP filter with forecasted values. Given the documented sensitivity of the Basel gap to specification and data properties, both approaches should not be applied mechanically but rather warrant thorough evaluation and sensitivity analysis. The mission assessed that alternative credit and supporting indicators, along with expert judgment, should play the leading role in the CCyB assessment (see also IMF, 2020).

Alternative Credit Indicators

12. The mission assessed alternative credit indicators. The Basel guidance provides that credit-to-GDP gap does not need to play a dominant role in the information used by authorities to take and explain buffer decisions (BCBS, 2010). The mission evaluated alternative credit indicators that could help to address problems with the credit-to-GDP gap estimation in Ghana.

13. The alternative credit indicators included

- **DRC:** Δ private nominal credit (annualized) over a two-year period relative to a moving average of nominal GDP (8 quarters). DRC in percentage points. The DRC indicator is not estimated, captures strong and protracted credit booms, and is less sensitive to cyclical volatility in the GDP. Variations of the indicator have been used in the Euro system for example by Bank of Finland and Castro et al. (2016) and Kauko et al (2019).

- **Difference in credit-to-GDP ratio (2-year):** Δ credit-to-GDP ratio (percentage points) over a two-year horizon. The indicator is similar to DRC, but may is more sensitive to GDP volatility (e.g., Lang et al., 2019).

- **Real credit growth**: real credit growth is generally a good leading indicator and predictor of financial crises (e.g., Schularick and Taylor, 2012). A sustained period of credit growth above long-term averages may be observed before credit-to-GDP gaps start signaling excessive growth.

14. The buffer guide translates the evolution of credit indicators into implied CCyB rates, providing quantitative guidance for CCyB policy decisions. The mapping uses the original BCBS (2010) formula with adjusted thresholds for alternative indicators that were linked to their historical distributions of the indicators.[5] The credit indicators were benchmarked against fixed percentiles in their historical distributions. Figure A7 presents an illustrative example of the buffer guide, which maps the DRC indicator to the implied CCyB rate. For DRC, the buffer guide is constructed such that the CCyB is increased whenever DRC values are between 2.5pps and 5pps, respectively. Beyond the lower threshold level L=2.5pps, the CCyB rate increases in equal steps such that the CCyB rate 2.5 percent corresponds to a DRC indicator value of 5pps (upper threshold). The Excel CCyB Toolkit allows users to experiment with alternative indicators and threshold values to assess the timing and path of CCyB rate increases.

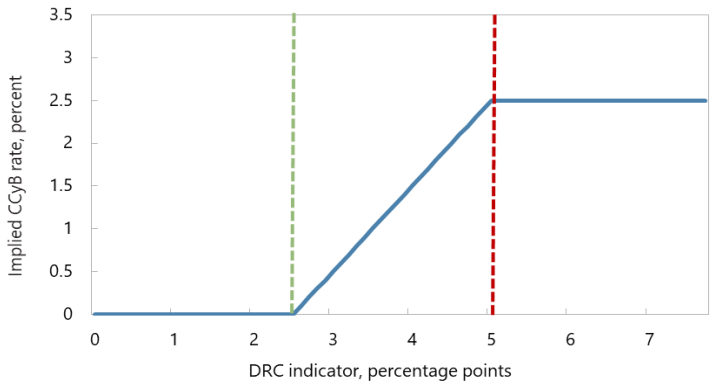
[5] The Basel guidance provides that the CCyB rate is calculated by mapping credit-to-GDP gap into CCyB rates. The CCyB rate is zero when credit-to GDP gap is below a certain threshold. The CCyB rate increases with the credit-to GDP gap until the gap exceeds an upper threshold, and rate reaches its maximum level, so that -

Credit-to-GDP gap ≤ 2 percent (lower threshold L) => CCyB rate = 0 percent

Credit-to-GDP gap ≥ 10 percent (upper threshold H) => CCyB rate = 2.5 percent.

The Basel thresholds are indicative, and authorities may choose their own levels in line with their risk tolerance and specifics of the national banking systems. Lower thresholds are generally consistent with a more conservative policy stance and lower risk tolerance by the authorities. For example, adjusting lower threshold to zero implies a positive CCyB rate once the ratio of credit-to-GDP exceeds its estimated long-term trend. The lower and upper thresholds are therefore key in determining the timing and the speed of the adjustment of the guide buffer add-on to underlying conditions.

Figure A7. Illustrative Example–CCyB Buffer Guide for DRC Indicator



Source: IMF staff calculations.

15. The credit indicators can be evaluated in terms of the implied activation and path of the calibrated CCyB rates over the sample period. Figure A8 illustrates the implied periods with positive CCyB rates for credit indicators around the 60th percentile of their historical distributions. Comparing the indicators at similar percentiles of their historical distributions provides a consistent basis for assessing their relative signaling properties.[6] The benchmarking exercise suggests that credit-to-GDP gap would trigger a positive CCyB rate at a relatively later stage of the cycle, while the other indicators display broadly comparable activation points with only minor differences. Furthermore, the time profiles of the implied CCyB rates differ across indicators. For example, the credit-to-GDP gap mapping implies a rather steep time profile of the implied CCyB rate increases. On the other hand, DRC indicator would tend to rise more gradually over time (Figure A9 and Figure A10).

Figure A9. Mapping Basel Credit-to-GDP to CCyB Rate using Basel Rule

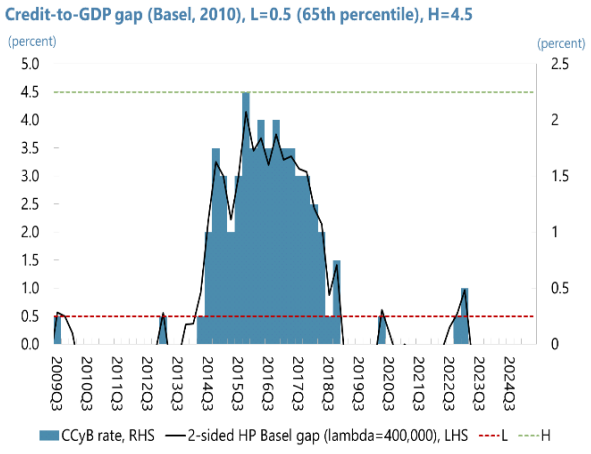
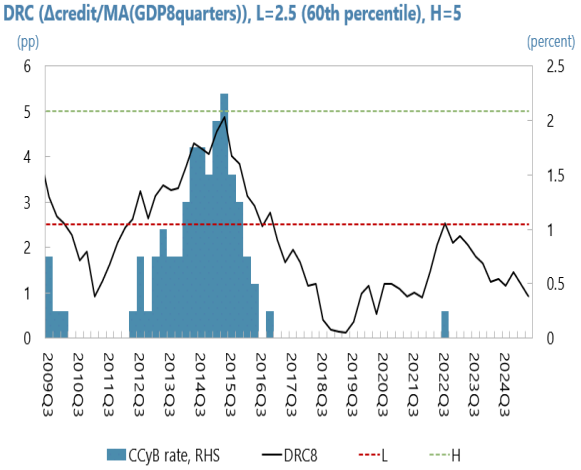


Figure A10. Mapping DRC to CCyB Rate Using Basel Rule



Source: IMF staff calculations.

[6] The recommended Basel thresholds L=2 and H=10 would have produced notably weaker results for the credit-to-GDP gap for the sample period.

Supporting Indicators

16. The supporting indicators help make the decisions to increase the CCyB rate more robust. The CCyB toolkit includes selected macro-financial indicators, measures of asset prices, spreads and volatility, lending standards, profitability, and resilience. The supporting indicators offer a broader context for assessing cyclical risks. Interest rates, loan spreads, and lending standards complement core credit indicators by reflecting banks' risk appetite and evolving credit conditions. Sectoral and currency disaggregation allows the authorities to evaluate signs of financial exuberance in specific market segments. The macro-financial indicators capture the broader macroeconomic and financial context. Profitability and resilience inform assessments of the banking system's ability to absorb buffer increases. Activating or increasing the CCyB is less costly when banks are profitable, profitability forecasts are favorable, and voluntary capital buffers are sufficient. The authorities are best placed to refine and expand the list of indicators, reflecting their expertise and the evolving structure of Ghana's financial system.

17. The supporting indicators can be usefully linked to the phase in the financial cycle and the evolution of cyclical risks in terms of their level and growth momentum. The financial cycle, similarly to the economic cycle, can be divided into distinct phases (see, e.g., CNB, 2022). However, it may at times follow an atypical path, with certain phases either absent or of unusually short or prolonged duration.[7] The assessment of cyclical risks is closely linked to the phase of the financial cycle and typically distinguishes between subdued, standard (neutral), and elevated levels of risk (Bank of England (BoE), 2024).

18. The assessment of the supporting indicators and expert judgment are inherently interlinked. The authorities differ in terms of the balance between the reliance on the supporting indicators and expert judgement. Indicators may at times provide conflicting signals, underscoring the importance of careful evaluation of current conditions and the cyclical outlook. For example, while the macro-financial indicators may provide mixed or weak signals it is important to combine them in a broader context, including measures of profitability and resilience indicators (see also decision tree in TA Report, Figure 10). The CCyB rate decisions should not be deferred even if signals from the current macro-financial and growth environment are mixed. It is generally useful to give banks sufficient time to adjust and attach conditionality to the CCyB decision to allow for future policy adjustments (see also Annex II, Section E).[8]

19. The use of composite indicators can potentially help address the difficulties in measuring the financial cycle. Some authorities have developed composite measures of cyclical risk in the determination of the CCyB rate (see, e.g., CNB (2014), NBS (2014)). A composite measure integrates multiple indicators to capture the build-up of cyclical systemic risk. Composite indicators can provide useful insights into leading indicator properties and help to enhance the consistency of CCyB policy analysis. However, they also introduce additional trade-offs, given the choices related to indicator selection, weighting schemes, and normalization methods. The mission shared the relevant codes with the authorities to support exploratory work on the potential future construction of a composite indicator.[9]

---

[7] See, for example, Valderrama (2023).

[8] According to the Basel guidance, any increases in the countercyclical buffer need to be preannounced by up to 12 months to give banks time to meet the additional capital requirements before they take effect (see BCBS, 2010).

[9] The list of codes and supporting modules can be found in the CCyB technical documentation.

D. CCyB Release

20. The CCyB rate should be released in the recessionary phase of the financial cycle. In case banks face severe stress a prompt release of the buffer (partial or full) may be necessary to help them avoid sharp decline in credit supply as systemic losses materialize. The CCyB may be also released in cases where systemic losses have not materialized yet forward-looking indicators point to imminent crisis.[10] In both cases, the prompt release is essential as it may help avoid reductions in credit supply motivated by uncertainty about the timing of the CCyB release.

21. The decision to release the CCyB buffer should in general draw on a different set of indicators than those used in the tightening decision. The assessment of CCyB release may be difficult to assess in real time when the credit cycle has turned. The decision on CCyB release therefore relies more on near-contemporaneous indicators of banking distress.[11] The release indicators include primarily indicators of systemic loss materialization. These supporting indicators in the CCyB include asset quality and credit losses, and banks' loss coverage capacity, that is, profit and different components of bank capital.[12] An absolute decrease in banks' capital and/or decrease in the system-wide capital ratio, provide a strong signal of the credit cycle reversal and materialization of systemic risks.

22. For the purpose of setting the CCyB rate, the BoG may regard (credit and other) losses of at least 0.25 percent RWA capital decline as systemic losses. The justification for 0.25 percent RWA represents the smallest incremental part of the CCyB rate.

23. Systemic loss materialization and loss absorption capacity jointly determine banks' available capital capacity for lending. The latter provides an additional indicator on the banking sector's lending potential and the possible role of capital constraints in the supply of credit. It represents the additional amount of credit (an upper bound) that institutions can provide from capital in excess of the minimum capital requirements and capital buffers in place.

24. Banks' available capacity to supply credit is defined as:

$$Available\ capacity\ from\ capital\ surplus = \frac{Absolute\ capital\ surplus}{\frac{(Pillar\ 1\ abs. + CCoB\ abs. + CCyB\ abs.)}{RWA_{TOTAL}}} * \frac{1}{RW_{CREDITRISK}}$$

25. The BoG may lower the CCyB rate gradually when cyclical risks are naturally receding from banks' balance sheets and systemic losses have not materialized. However, BoG should exercise caution in the absence of a clear signal—such as systemic credit losses—and base decisions on comprehensive evaluations and analyses. When the previous build-up of cyclical risks is followed by a mild recession or economic slowdown, the non-financial sector often continues servicing its loans due to

[10] Such cases may be motivated by the policymaker's intention to build-up market confidence in response to severe adverse shocks, not necessarily of cyclical nature, for example, Covid-19.

[11] Given the structure of Ghana's financial system and the relatively limited role of domestic capital markets, financial market stress was not considered for the purpose of the CCyB release.

[12] The components include voluntary capital buffers, the released (CCyB) or used (CCyB/CCoB) capital buffers designed to cover cyclically conditional credit losses.

financial reserves and relatively low stress levels. This naturally reduces the cyclical risk in banks' balance sheets and the need for CCyB coverage. In such cases, observed credit losses are relatively low and usually absorbed to a sufficient degree by institutions' profits. Consequently, the CCyB rate is likely to be relaxed gradually to lower levels.

E. CCyB Communication

26. It is useful to communicate a decision to adopt a CCyB framework with a dedicated policy document. This document should clearly state the policy objective for the CCyB, describe how the tool operates, and outline the BoG's strategy for its use of the tool in broad terms. Linking the strategy to BoG's overall financial stability objectives is essential. Including operational details and communication regarding the use of the tool with practical example scenarios can help set banks' expectations and enhance transparency.[13]

27. CCyB decisions are typically taken quarterly, and IMF guidance recommends the publication of a meeting record. For Ghana, CCyB decisions could be taken on a semi-annual basis during periods of stable credit and macro-financial conditions, and more frequently when warranted by significant cyclical developments and/or emerging vulnerabilities. The record should include a rationale for the decision, and it is often useful to publish a record underpinning the rationale. When there are no changes to the CCyB rate, publication could simply be posted on the central bank website. However, when changes take place, it is useful to draft a press release and possibly hold a press conference about the decision to discuss the rationale and align expectations about further changes to the buffer.

28. The communication should include the publication of: (a) the applicable countercyclical buffer rate; (b) the relevant credit-to -GDP ratio and its deviation from the long-term trend; (c) the buffer guide; (d) the justification for that buffer rate; (e) where the buffer rate has been increased, the date from which the institutions must apply that increased buffer rate for the purposes of calculating their institution-specific CCyB; (f) a reference to the exceptional circumstances in case a shorter deadline for application of increased CCyB rate was announced; (g) the indicative period and justification during which no increase in the buffer rate is expected (after CCyB release). Publishing stress-test results may help ensure that the market does not question the adequacy of banks' level of capital.

29. It is helpful to provide forward guidance to CCyB decisions and signal a timeframe for the release. When CCyB is increased from zero, the authorities may wish to outline the expected timeline for reaching the stated level and, where appropriate, condition the path of increase on developments in vulnerabilities. For example, planned increases could be cancelled if vulnerabilities crystallized before the new rate takes hold. Similarly, when releasing the buffer, it is essential to communicate how long the buffer is expected to remain released before any tightening is considered. This reassures banks that they can utilize the released buffer without concern about an imminent increase in capital requirements.

[13] The BoE (2023) policy document on the CCyB is a good example that contains these elements.