Annual Review

Title: Macroeconomics Research in Low-Income Countries (MRLIC)		
Programme Value £: 21.68m		**Review date: July 2025**
Programme Code : 202960	**AMP start date:** Feb 2012	**AMP end date:** March 2026

Summary of Programme Performance

Year	2020/21	2021/2022	2022/2023	2023/2024	2024/2025
Overall Output Score	A+	A+	A+	**A**	A+
Risk Rating	Minor	Minor	Minor	Minor	Minor

DevTracker Link to Business Case:	**https://iati.fcdo.gov.uk/iati_documents/56217735.odt**
DevTracker Link to results framework:	**https://iati.fcdo.gov.uk/iati_documents/D0005186.xlsx**

A. SUMMARY AND OVERVIEW

Macroeconomic Research in Low Income Countries (MRLIC) is a long-standing partnership between FCDO and the International Monetary Fund (IMF) aiming to promote macroeconomic stability and growth in LICs through improved IMF engagement in those countries. It seeks to achieve this by:

(i) producing high quality, policy relevant research on macroeconomic issues affecting LICs.
(ii) ensuring that research products are used by IMF country teams and partner governments.
(iii) shaping high-level IMF policy positions and strengthening engagement by senior IMF policymakers on LIC issues.
(iv) widening the field of academics and policymakers working on these issues[1].

Macroeconomic stability is critical for economic development. Low Income Countries (LICs) are particularly vulnerable to shocks leading to economic instability, such as rising debt or high inflation[2]. Instability deters private investment[3], reduces growth and can lead to deeper poverty and greater risks of conflict. Though macroeconomic stability is not sufficient to guarantee growth, it is a foundation from which growth is more likely to take off.

MRLIC's research is produced mostly by economists in the IMF Research Department, with some commissioned from external academics. It aims to push the frontier of the global understanding on macroeconomics in LICs, a typically under-researched field. MRLIC research also aims generate policy and practice change. The main channel through which this research uptake occurs, is via IMF country missions. The programme also delivers training for Fund staff, and government officials as well as focused engagement with the IMF Board. Linking the IMF Research Department (RES), the Strategy, Policy and Review (SPR) Department and the Institute for Capacity Development (ICD) helps ensure that the research agenda is relevant to the Fund's policy and is disseminated effectively.

Working with the IMF is an efficient route for supporting macroeconomic policy in the countries where FCDO works. It helps the FCDO achieve breadth and leverages the IMF's comparative advantage in providing macroeconomic policy advice and analysis. Figure 1 depicts the coverage of MRLIC and uptake of its flagship Debt-Investment-Growth tools by IMF country teams, showing good coverage across FCDO priority geographies in Sub-Saharan Africa and the Indo-Pacific.

MRLIC started in March 2012. A fourth phase (£5.1m) was approved in 2019. A no-cost programme extension was approved in 2021, reprofiling disbursements and extending the end date to March 2025. In September 2024 a further extension was approved taking the programme up to March 2026 and adding an additional £1.84m of budget.

[1] In 2022, the logframe was revised and streamlined. Output 4 was removed, with some indicators subsumed under other Outputs.
[2] Macroeconomic instability refers to high inflation and large currency fluctuations, or important swings in growth rates. For a brief explainer see how the IMF Promotes Global Economic Stability
[3] Macroeconomic stability, investment and growth in developing countries - ScienceDirect

Summary supporting narrative for the overall score in this review

This annual review scores an A+. At the output level, two outputs score A+ and one scores A. The review covers April 2024 to March 2025. During this 13th year of operation, MRLIC demonstrated excellent performance, exceeding ambitious targets while maintaining the high quality and policy relevance that has characterised the programme throughout its lifetime.

During this annual review period, the programme produced 18 working papers and secured 5 publications in peer-reviewed journals (Output 1: A+). Research uptake remained strong with 236 country applications and 59 training courses delivered (Output 2: A+), exemplified by the successful conclusion of Ghana's multi-year monetary policy framework transformation and widespread adoption of Debt-Investment-Growth and Natural Disasters (DIGNAD) model across Resilience and Sustainability Facility (RSF) programmes. Senior IMF engagement with LIC issues continued at high levels (Output 3: A), with MRLIC research featured prominently in the April 2024 World Economic Outlook (WEO) and shaping policy discourse from Board papers to speeches by senior officials.

The successful securing of a one-year extension with £1.84m additional funding provides welcome stability and enables strategic planning for the programme's future. While the programme excels in producing and disseminating high-quality research, there remain opportunities to strengthen systematic tracking of policy impacts and enhance digital dissemination strategies to expand reach and value for money, areas that can be addressed within the remaining programme period to further strengthen an already exceptional track record.

It should be noted that the logframe targets were not refreshed following last year's review, resulting in some Year 13 milestones being less stretching than appropriate given previous achievements. However, the output scores remain valid based on strong annual performance, for example, with 18 working papers produced compared to 13 in the previous year, demonstrating sustained programme momentum rather than simply meeting cumulative targets. Going forward, annual milestone setting will ensure targets are appropriately ambitious based on prior year achievements.

Major lessons and recommendations for the year ahead

Key lessons from Year 13:

The programme's thirteenth year reinforced several important lessons. Sustained high-quality research combined with active dissemination and capacity building can achieve significant policy influence, as demonstrated by Ghana's monetary policy transformation and the widespread adoption of DIGNAD in climate resilience planning. However, the year also highlighted persistent challenges in systematically tracking how research translates into policy reforms and the need for more innovative approaches to increase reach and impact in an evolving digital landscape.

Major recommendations for the year ahead:

1. Prioritise knowledge synthesis and accessibility: In the year ahead, develop comprehensive technical syntheses and policy briefs that synthesise 13 years of MRLIC research on critical topics (climate resilience, debt sustainability, gender and inclusion, structural transformation). The policy briefs should be designed for time-constrained policymakers and include clear, actionable recommendations. This will create lasting value from the programme's extensive research base while demonstrating cumulative impact to support considerations about future phases.

2. Leverage the November 2025 conference for strategic positioning: Use the conference showcasing pathfinding papers as a platform to: (i) convene potential co-funders and build a coalition for continued LIC macroeconomic research, (ii) demonstrate MRLIC's unique value through an "impact showcase", and (iii) facilitate discussion on future research priorities and delivery mechanisms. Ensure key stakeholders from FCDO, IMF, other donors, and partner countries are engaged at senior levels.

3. Develop multi-donor funding strategy In the year ahead, actively develop partnerships with other bilateral donors, multilateral development banks, and foundations interested in macroeconomic stability and LIC development. Create a compelling investment case based on the external evaluation findings, demonstrated impact, and alignment with global priorities.

B: THEORY OF CHANGE AND PROGRESS TOWARDS OUTCOMES

Summarise the programme's theory of change, including any changes to outcome and impact indicators from the original business case.

This programme was initiated in 2012. The Theory of Change[4] is summarised below. Successive Annual Reviews have provided evidence from the output and, to some extent, the outcome stage. However, the Theory of Change assumption that the greater visibility of MRLIC among IMF seniors would increase the probability of IMF funding LIC research itself has not been fully validated. The Theory of Change should be revised to reflect the limitations in achieving universal uptake of research through existing IMF channels. The impact of the programme would be multiplied by engagement with other agencies with a comparative advantage in areas which can facilitate better uptake by policy makers in LIC.

OUTPUT 1	High quality, policy relevant research on macroeconomic issues affecting LICs produced.
OUTPUT 2	IMF research products (policy analysis, practical and operational tools and frameworks) produced under this project used by IMF country teams and partner authorities.
OUTPUT 3	Engagement by senior IMF policymakers on issues affecting LICs strengthened through this project.
OUTPUT 4	IMF strengthens research capacity, by expanding the network of researchers and policy makers working on LIC macroeconomics

OUTCOME	Better engagement by IMF policymakers on LIC-specific macroeconomic issues, leading to improved policymaking in specific project thematic areas.

IMPACT	Better macroeconomic policymaking in LICs leading to faster economic growth, job creation and poverty reduction.

Describe where the programme is on/off track to contribute to the expected outcomes and impact. What action is planned in the year ahead?

The programme is on track to meet its expected outcome: *Better engagement by IMF policymakers on LIC-specific macroeconomic issues, leading to improved policymaking in specific project thematic areas*. The outcome indicator shows strong performance with 22 thematic areas of IMF policy influenced and made LIC-specific, meeting the target. Year 13 demonstrated substantial evidence of this improved engagement across multiple channels.

Key research outputs have been integrated into IMF's highest-level policy documents, including a full chapter in the April 2024 World Economic Outlook on medium-term growth prospects with specific analysis of LIC convergence challenges. MRLIC tools, particularly DIGNAD, have become integral to IMF country operations, with applications in 10 countries during Year 13 alone, directly shaping climate resilience strategies and RSF programme design. The successful conclusion of the multi-year FPAS project in Ghana exemplifies how MRLIC research translates into fundamental improvements in country-level monetary policy frameworks. Furthermore, the continued strong demand for MRLIC training—with 59 courses delivered and consistently positive feedback—indicates that both IMF staff and country authorities value these tools for practical policymaking.

At the impact level, while direct attribution to economic growth, job creation, and poverty reduction remains methodologically challenging, there are encouraging signs at outcome level. Countries implementing MRLIC-supported reforms, such as Ghana's enhanced monetary policy framework, are better positioned to maintain macroeconomic stability—a crucial foundation for sustainable growth. The widespread adoption of climate resilience planning through DIGNAD potentially helps countries avoid costly economic disruptions from natural disasters. Research on gender complementarities and distributional impacts provides evidence base for more inclusive policies that can enhance growth while reducing inequality.

[4] The original Business Case did not specify a formal Theory of Change (ToC) however the implicit ToC for the program is summarised in its logical framework and subsequent Annual Reviews.

Box 1: Case Studies of MRLIC Outcome level Policy Impact

Case Study: Ghana's Monetary Policy Transformation
The Bank of Ghana's transformation through MRLIC-supported technical assistance demonstrates lasting institutional change. Over several years, MRLIC products have supported IMF technical assistance with BoG to develop a sophisticated Quarterly Projection Model that now sits at the heart of monetary policy decisions. The project built deep technical capacity among BoG staff, enabling a shift from backward-looking analysis to forward-looking, model-based policymaking. By 2024, the QPM routinely informs interest rate decisions and inflation forecasts, strengthening Ghana's ability to navigate economic challenges. This represents an improvement in national monetary policy capability.

Case Study: DIGNAD Mainstreaming in Climate Planning
DIGNAD has evolved from research tool to operational cornerstone of IMF climate work in LICs. In 2024/25, applications across ten countries shaped national climate strategies and RSF programme design. In Tanzania, DIGNAD demonstrated that climate-resilient infrastructure could reduce post-disaster GDP losses by 2 percentage points while improving debt sustainability—analysis central to their RSF arrangement. Beyond individual countries, DIGNAD has achieved institutional mainstreaming: it features in Executive Board discussions, IMF training curricula, and is independently applied by trained officials. This demonstrates how MRLIC research can shape institutional practice.

However, sustaining and deepening these outcomes faces uncertainty without confirmed Phase V funding. The positive trajectory of IMF engagement with LIC-specific issues, built over 13 years, risks losing momentum if the research pipeline diminishes after March 2026. For the year ahead, several strategic actions are planned to consolidate achievements and position for continued impact:

- **External evaluation completion**: An independent evaluation, launched in early 2024, will provide systematic assessment of MRLIC's outcomes and impact over its lifetime, offering evidence and lessons for future programming.
- **Pathfinding papers and conference**: Five commissioned papers across core themes will identify emerging macroeconomic challenges for LICs and research priorities. The November 2025 conference will convene key stakeholders to discuss findings and build consensus on future directions.
- **Knowledge synthesis**: As recommended, the programme will prioritise creating accessible summaries of research findings on key topics, ensuring the 13-year knowledge base remains available and influential beyond the current phase.
- **Strategic engagement**: Leveraging high-level conferences and the external evaluation to engage potential co-funders and build coalition support for continued LIC macroeconomic research, whether through another phase or alternative mechanisms.

These actions aim to maximise impact in the remaining period while creating strong foundations for sustaining the programme's contribution to improved macroeconomic policymaking in LICs.

Justify whether the programme should continue, based on its own merits and in the context of the wider portfolio

The programme should continue through to its current end date of March 2026. Strong performance in Year 13, with targets met or exceeded across all outputs, justifies completing the approved extension period. The remaining year provides opportunity to maximise impact through knowledge synthesis and dissemination while the external evaluation and pathfinding papers will position FCDO to make an informed decision about potential future programming

C. DETAILED OUTPUT SCORING [aim for 1 page per output]

Output Title	High quality, policy relevant research on macroeconomic issues affecting LICs produced.		
Output number:	1	Output Score:	*A+*
Impact weighting (%):	34	Weighting revised since last AR?	[If Yes, up or down?]
Indicator(s)	**Milestone(s) for this review**		**Progress**

1.1 Number of priority research papers produced, on the five research themes of the MRLIC	H (200 papers) M (196 papers) L (190 papers)	209
1.2 Number of research papers accepted for publication in appropriate high-quality peer-reviewed journals	H (117 papers) M (115 papers) L (113 papers)	118

Briefly describe the output's activities and provide supporting narrative for the score.

This output assesses the performance of the programme in producing high quality, policy relevant research on macroeconomic issues affecting LICs. In this review year it scores an A+, though this reflects differential performance across the two indicators. Indicator 1.1 exceeded its high target with 209 papers against a target of 200, representing strong continued productivity. However, indicator 1.2 achieved 118 published papers against a high target of 117, which while meeting the stated target represents a decline from 8 papers published last year to 5 this year, indicating performance at expected rather than exceptional levels. It should be noted that the logframe targets were not updated following last year's review, which would have set more ambitious benchmarks. The overall A+ rating reflects the sustained high quality and policy relevance of outputs, with 18 working papers produced in Year 13 maintaining the programme's strong research productivity.

Output 1.1 -- Working Papers
MRLIC maintained strong performance across all five research themes. Notable contributions include work on monetary policy frameworks, with papers developing Ghana's Quarterly Projection Model for forward-looking policy analysis and examining the pass-through of global price shocks in spatial models of low-income countries. Research on macro-financial linkages explored financial reform contagion and dominant currency pricing in services trade. The programme made significant contributions to building resilience, with four papers examining fiscal tools for disaster resilience, foreign aid responses to shocks, and the macroeconomic benefits of resilience-building in disaster-prone countries. Structural change research was particularly productive with ten papers covering topics from middle-income traps to knowledge diffusion through FDI and the implications of geoeconomic fragmentation. Several papers employed innovative methodologies, including machine learning applications for nowcasting and spatial general equilibrium models.

Output 1.2 -- Published Papers
The programme achieved 5 papers accepted in peer-reviewed journals, meeting expectations. These included papers in the *European Journal of Political Economy* on political institutions and output collapses, the *Journal of International Economics* on changing global linkages amid geopolitical tensions, and a forthcoming paper in *Feminist Economics* on gender complementarities in production functions. A paper on financial reform contagion is forthcoming in *International Economics Review*, and another on connector countries bridging geopolitical fragments will appear in *AEA Papers and Proceedings*. These publications demonstrate the programme's ability to place research in influential journals while maintaining policy relevance for low-income countries. While this represents a strong performance in terms of publication quality, the decrease from the previous year's 8 publications indicates natural variability in academic publication timelines.

Progress on recommendations from the previous AR (if completed), lessons learned this year and recommendations for the year ahead

Output 1: Progress on recommendations from the previous AR (if completed), lessons learned this year and recommendations for the year ahead
The 2024 review recommended that the programme seek to more specifically demonstrate how research outputs influence IMF policy positions and programming decisions as well as the thinking of policymakers in LICs. Good progress has been made on this front. The Year 13 report provides stronger evidence of policy influence, including research integration into WEO chapters that shape global policy discourse, citations in speeches by senior officials such as Gita Gopinath (IMF First Deputy MD) and the Bundesbank President, and direct country applications such as Ghana's monetary policy framework transformation. The programme has better documented these pathways of influence.

Given the limited time remaining in the current phase, recommendations focus on maximising impact and preparing for transition:

Recommendation: In the final year, prioritise synthesis of the substantial body of research produced over 13 years into accessible policy briefs or evidence summaries on key topics, particularly on topics which are not covered by the path finding papers. This would create lasting resources for policymakers while demonstrating the cumulative policy value of MRLIC research, supporting the case for donors to support future research.

Output Title	IMF research products (policy analysis, practical and operational tools and frameworks) produced under this project used by IMF country teams and partner authorities.		
Output number:	2	Output Score:	***A+***
Impact weighting (%):	33	Weighting revised since last AR?	[If Yes, up or down?]
Indicator(s)	**Milestone(s) for this review**		**Progress**
2.1 Application and use of tools and frameworks by country authorities and country teams.	H (233) M (230) L (227)		236
2.2 Courses offered to country authorities and IMF staff	H (53) M (51) L (49)		59

Briefly describe the output's activities and provide supporting narrative for the score.

This output assesses the IMF research products produced under MRLIC which are used by IMF country teams and partner authorities as well as training courses to upskill end users. The output scores an A+. While both indicators exceeded their stated high targets (indicator 2.1 achieved 236 applications against 233; indicator 2.2 delivered 59 courses against 53), these milestones were not updated from last year's review when performance was already above these levels. The A+ rating is justified not by surpassing these understated targets but by the strong quality and impact of the programme's tools and capacity building, particularly the widespread adoption and influence of DIGNAD and the impact on country-level policymaking capacity, particularly the use of MRLIC in the technical assistance mission with the Bank of Ghana.

Indicator 2.1: Applications by IMF country teams and country authorities

The DIGNAD model continued to be widely applied across multiple countries, particularly in the context of Resilience and Sustainability Facility (RSF) programmes. Applications spanned the Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Guinea, Madagascar, Maldives, and Tanzania, with the model helping countries assess the macroeconomic benefits of climate adaptation investments. A particularly notable success was the conclusion of the multi-year IMF technical assistance mission with the Bank of Ghana which utilised MRLIC-supported products, significantly strengthening Ghana's macroeconomic forecasting capabilities through the development of a modern Forecasting and Policy Analysis System (FPAS). The enhanced Quarterly Projection Model now plays a central role in the Bank of Ghana's monetary policy formulation and communications.

Country teams provided strong positive feedback on these applications. The Palau team noted that DIGNAD "provided an invaluable framework to discuss the medium-term fiscal anchor and policies with the authorities." In Rwanda, Executive Board discussions welcomed the use of DIGNAD alongside the Debt Sustainability Analysis as important inputs for RSF programme design. The MIMMI app continued to demonstrate its value in distributional analysis, with applications in Guinea assessing the macroeconomic and social impacts of the Simandou mining project, helping authorities understand the importance of complementary policies in education and infrastructure.

Indicator 2.2: Courses for IMF country teams and country authorities

MRLIC delivered seven high-quality training events reaching diverse audiences across IMF staff, government officials, and academics. The DIGNAD toolkit training received consistently positive feedback, with the November 2024 IMF staff course rating 4.73/5. Participants praised its practical value for operational work. Regional training through partnerships with institutions like the Africa Training Institute proved particularly effective, with the Climate in Macroeconomic Frameworks course in February 2025 bringing together representatives from 36 countries and receiving a 4.7/5 rating.

There are examples of the impact of training extending beyond immediate learning, as demonstrated by a Reserve Bank of Zimbabwe staff member who, following a February 2024 DIGNAD training, independently calibrated the model to Zimbabwe's economic conditions in a policy paper. The workshop at MathWorks Finance Conference expanded reach beyond traditional audiences, attracting approximately 1,400 registrants and showcasing MRLIC tools to private sector and academic communities. Participants consistently highlighted the hands-on nature of the training and its direct relevance to their policy work, with many expressing interest in applying the tools to their country contexts.

Notably, the MRLIC team strengthened engagement with FCDO by delivering a DIGNAD training event for FCDO staff and actively collaborating with FCDO teams working on debt sustainability issues, demonstrating the programme's direct value to FCDO's operational work.

Progress on recommendations from the previous AR (if completed), lessons learned this year and recommendations for the year ahead

The 2024 review noted that while the programme demonstrates academic impact and broader interest, it could more systematically capture shifts in IMF positions or policies based on MRLIC output. Limited progress is evident on developing structured measurement of policy impact. While Year 13 shows strong examples of uptake (Ghana's FPAS transformation, widespread DIGNAD adoption in RSF programmes), these remain illustrative rather than systematically tracked.

Recommendation: External evaluation to assess policy influence pathways and impacts. This should include: (i) systematic follow-up with a sample of training participants to track tool application, (ii) brief surveys of IMF country teams using MRLIC tools to document policy changes influenced, and (iii) creation of a simple database of policy reforms linked to MRLIC research. This would provide evidence for potential future phase design while being achievable within the remaining timeframe.

Output Title	Engagement by senior IMF policymakers on issues affecting LICs strengthened through this project.		
Output number:	3	Output Score:	*A*
Impact weighting (%):	33	Weighting revised since last AR?	[If Yes, up or down?]
Indicator(s)	**Milestone(s) for this review**		**Progress**
3.1 High level policy conferences attended by senior IMF staff reflect findings of research papers funded under this project.	H (60) M (59) L (58)		60
3.2 Results of the research reflected in IMF Board discussions and papers such as IMF Policy Papers, Staff Discussion Notes, policy memos to management etc.	H (67) M (65) L (63)		66

Briefly describe the output's activities and provide supporting narrative for the score.

This output assesses how the level of engagement by senior IMF policymakers on issues affecting LICs is strengthened through this project. It scores an A. Indicator 3.1 met the high target exactly with 60 policy conferences, while indicator 3.2 achieved 66 instances of research reflected in IMF policy papers, exceeding the medium target of 65. The programme continued to influence high-level policy discussions and shape IMF positions on critical macroeconomic issues affecting LICs.

Indicator 3.1: High level conferences

MRLIC organised and contributed to four high-level conferences that advanced macroeconomic research and policy dialogue for LICs. The "Rethinking Economic Policy: Steering Structural Change" conference in April 2024 explored how policy can navigate structural transformations while ensuring inclusive benefits, with particular relevance for developing economies. The AERC-IMF Visiting Scholars Workshop in September 2024 brought together six researchers from Sub-Saharan Africa for presentations and one-on-one mentorship with IMF economists, fostering regional research capacity. The November 2024 conference on "Transforming Industries for Growth in a Fragmented World" disseminated findings from MRLIC's major research on economic diversification strategies in developing countries.

A particularly prominent achievement was the ASSA 2025 session on "Policy Uncertainty and Economic Activity," co-organised with Stanford University. This well-attended session featured four papers analysing global trade and fiscal uncertainty, including applications of the World Uncertainty Index, demonstrating MRLIC's contribution to cutting-edge policy debates at premier academic venues.

Indicator 3.2: Research reflected in IMF Board discussion and other IMF policy papers

MRLIC research achieved visibility in high-level IMF policy documents. The April 2024 World Economic Outlook featured a full chapter on "Slowdown in Global Medium-Term Growth: What Will It Take to Turn the Tide?" analysing key drivers of slowing productivity and growth with important implications for LIC convergence. The WEO also included two MRLIC-contributed boxes on distributional implications of growth prospects and trade fragmentation effects. Additionally, MRLIC research on financial flows to developing countries was prominently featured in the Board paper on the 4th Financing for Development Conference.

The policy influence of MRLIC research extended beyond formal publications, with findings cited in speeches by senior officials including IMF First Deputy Managing Director Gita Gopinath and Bundesbank President Joachim Nagel. This high-level uptake demonstrates how MRLIC research continues to shape global policy discourse on macroeconomic challenges facing LICs, from geoeconomic fragmentation to growth prospects and development financing.

Progress on recommendations from the previous AR (if completed), lessons learned this year and recommendations for the year ahead

The 2024 review recommended revising indicators to focus more clearly on exposure and engagement of senior IMF officials to MRLIC research and capturing how research influences IMF policy. While the indicators remain unchanged, the programme has improved documentation of influence, with clearer examples of how MRLIC research shapes Board papers, flagship publications, and senior management positions on LIC issues.

Recommendation: For the extension period, leverage the high-level conferences and pathfinding papers to strengthen senior stakeholder engagement for a potential Phase V. Focus on: (i) ensuring pathfinding paper authors include influential policy voices who can champion continued LIC macroeconomic research, (ii) using the November 2025 conference to convene senior IMF, FCDO, and potential co-funding partners, and (iii) developing a concise "impact showcase" highlighting 13 years of policy influence to support resource mobilisation efforts. Enhanced digital dissemination of these materials could amplify reach to senior audiences at minimal cost.

D: VALUE FOR MONEY

Key cost drivers and performance

VfM performance compared to the original VfM proposition in the business case

The MRLIC programme continues to deliver good value for money across all dimensions of FCDO's value for money framework. The programme's ability to produce high-quality, policy-relevant research at competitive costs while achieving substantial policy impact demonstrates strong overall cost-effectiveness.

Economy: The programme maintains robust governance on procurement processes through IMF systems and guidelines. All contractual employees undergo competitive selection processes, and the Fund's established procurement procedures ensure cost-effective acquisition of inputs. Travel and conference costs continue to be managed efficiently within IMF guidelines. The one-year extension, including resources for an external evaluation and pathfinding papers, represents prudent investment in ensuring the programme's future strategic direction delivers maximum value.

Efficiency: The programme demonstrates efficiency in research production. The updated figures for Year 13 show the cost per working paper at approximately $70,000 (£53,000), a slight decrease from the previous year's $72,000, while the cost per published paper remains stable at approximately $124,000 (£93,000). Both figures remain significantly below FCDO's benchmark of £150,000 per paper. This efficiency is particularly noteworthy given the programme has maintained high quality standards, with 118 papers published in peer-reviewed journals over 13 years, many in top-tier publications.

Cost per Working and Published Paper during Years 1-13

Total Staff/Contractual/VS Costs[1]	$19,489,336
Research Paper Costs	$14,617,002
Country Applications Costs	$4,872,334
Working Papers[2]	209
Cost Per Working Paper	$69,938
Published Papers[2]	118
Cost per Published Paper	$123,873

[1] Estimated as the sum of the first two lines of Table 3. Note that the first line of Table 3 includes both IMF staff salary and travel expenses. Thus, the estimates we have calculated for working and published paper costs likely overestimate the true cost of research time.

[2] These include commissioned papers.

However, the programme's cost allocation between research papers (75%) and country applications (25%) remains based on estimates rather than detailed time tracking. More granular cost analysis could identify opportunities for further efficiency gains and better demonstrate where resources create the most value.

Effectiveness: The programme's effectiveness is evidenced through multiple channels of impact. In Year 13, DIGNAD applications were implemented across 10 countries, directly informing climate resilience strategies and RSF programme design. The high citation rates (86.3% of publications cited, averaging 23.4 citations per article) and extensive downloads (average 962 per working paper) demonstrate strong academic influence. Moreover, the direct uptake by policymakers—such as Ghana's transformation of its monetary policy framework through MRLIC-supported FPAS development—illustrates tangible policy impact.

While these outputs are well-tracked, there remains scope to strengthen the systematic measurement of how research translates into actual policy changes in LICs. Developing a more robust framework to track and attribute policy reforms to MRLIC research would provide stronger evidence of effectiveness. Additionally, while training is delivered to country officials and IMF staff, more systematic follow-up on how participants subsequently apply tools and knowledge could both improve impact and strengthen the VfM evidence base. The external evaluation underway presents an opportunity to develop such tracking mechanisms.

The programme could enhance its effectiveness through improved knowledge synthesis. Creating more accessible policy briefs or evidence summaries that consolidate findings across multiple studies into digestible formats could increase uptake among time-constrained policymakers at relatively low marginal cost. Similarly, while the programme maintains good traditional dissemination through conferences and quarterly newsletters reaching 1,500+ subscribers, there is potential to amplify impact through enhanced digital strategies. The relatively modest social media engagement compared to the quality of outputs suggests untapped potential for broader reach.

Equity: MRLIC's continued focus on inequality and inclusion enhances its value proposition. Year 13 outputs included groundbreaking research on gender complementarities in production functions, suggesting that gains from gender inclusiveness are substantially larger than standard models estimate. The programme's tools, particularly the MIMMI app, enable detailed distributional analysis of policy impacts, as demonstrated in Guinea's Simandou project assessment. Research on topics ranging from food insecurity to the distributional implications of global growth slowdowns ensures that equity considerations are embedded in macroeconomic policy advice for LICs.

Overall cost-effectiveness: Working through the IMF continues to provide leverage for FCDO resources. The programme benefits from IMF infrastructure, expertise, and convening power while maintaining direct costs at approximately 1% of budget for programme management. The breadth of country coverage (spanning most LICs) and depth of engagement (from research to country applications to capacity building) would be difficult to replicate through alternative delivery mechanisms at comparable cost.

Looking forward, the external evaluation and pathfinding papers commissioned for the extension period represent strategic investments in sustaining and potentially enhancing value for money. These exercises provide opportunities to address identified areas for strengthening VfM evidence, including developing better impact attribution mechanisms and exploring more cost-effective dissemination strategies. However, with Phase V funding uncertain, maximising future value will require concerted efforts to crowd in funding from other donors and development partners. The programme’s strong track record of delivery, demonstrated impact, and alignment with global challenges such as climate change and inequality position it well to attract complementary funding, potentially multiplying FCDO's investment impact through leveraged resources.

The consistently strong performance over 13 years, combined with the programme's ability to adapt to emerging challenges while maintaining cost discipline, confirms that MRLIC continues to represent excellent value for money in addressing critical macroeconomic research gaps for low-income countries. The identified opportunities for improvement would further strengthen an already robust value proposition.

E: RISK

Overview of risk management

The overall risk remains minor. The risk register is regularly updated and was last updated in April 2025. The programme has continued to demonstrate resilient delivery despite the global economic challenges, with MRLIC successfully meeting or exceeding most output targets. The approval of a one-year extension to March 2026, with additional funding of £1.84m, has provided welcome stability and reduced the immediate funding uncertainty that was a key concern in the previous review period.

The main risks for the programme continue to be managed effectively:

- **External context**: Most research is carried out at IMF headquarters using secondary datasets, maintaining limited exposure to context in LICs. The programme has adapted well to global challenges including geopolitical tensions and economic uncertainties. MINOR
- **Delivery**: Established delivery systems continue to demonstrate high performance over the extended programme period. Demand for MRLIC outputs remains strong, with continued uptake by IMF country teams and national authorities. MINOR
- **Operational**: Experienced management teams remain in place at both FCDO and IMF, ensuring continuity and effective programme oversight. MINOR
- **Fiduciary**: All funds continue to be spent directly by the IMF and are subject to extensive IMF financial management controls, providing strong fiduciary assurance. MINOR
- **Reputational**: Research activities and topics continue to pose little or no reputational risk, with outputs maintaining high academic standards and policy relevance. MINOR
- **Safeguarding**: Programme activities rarely involve contact with vulnerable persons, and external researchers continue to be managed in accordance with IMF procedures. MINOR

The December 2021 Central Assurance Assessment (CAA) of the IMF confirming its position as a low-risk partner remains valid. The light-touch due diligence conducted in July 2023 continues to provide appropriate assurance, with no material changes to the IMF's operating procedures or the MRLIC programme's implementation approach.

Climate and environment risk assessment: In alignment with the Paris Agreement, climate and environment risks within the programme remain low. The programme actively contributes to climate resilience through research on natural disasters, climate adaptation, and the development of tools like DIGNAD that help countries assess climate-related macroeconomic risks. This work directly supports LICs in building resilience to climate change.

Equalities considerations: The programme continues to meet its obligations under the Gender Equality Duty and Public Sector Equality Duty. Research on gender and inclusion remains a core theme, with outputs including work on gender complementarities in production functions and the macroeconomic impacts of gender gaps. No adverse impacts on protected characteristics have been identified, and the programme actively contributes to evidence on reducing inequalities.

Due diligence status: All due diligence assessments remain current and valid. The IMF's robust internal controls and governance structures continue to provide appropriate assurance. No material changes have occurred that would require a refresh of existing assessments.

Looking ahead, while the one-year extension to March 2026 provides near-term stability, the programme continues to face medium-term funding uncertainty. The planned comprehensive external evaluation and commissioned pathfinding papers during the extension period will be crucial for shaping a potential Phase V and ensuring the programme's continued relevance and impact. The evolving global context—including geoeconomic fragmentation, declining development assistance, climate change, and rapid technological change—presents both challenges and opportunities that will need to be carefully considered in future programme design.

Overall, the programme continues to operate comfortably within risk appetite across all categories, with effective risk management enabling the delivery of high-quality, impactful research that supports macroeconomic policymaking in LICs.

F: PROGRAMME MANAGEMENT: DELIVERY, COMMERCIAL & FINANCIAL PERFORMANCE

Summarise the performance of partners and FCDO, notably on commercial and financial issues.

The partnership between FCDO and the IMF continues to demonstrate strong performance in programme delivery and financial management. Both partners have maintained effective collaboration throughout the thirteenth year of implementation, ensuring the programme continues to meet its objectives efficiently.

Financial management and reporting: The IMF has maintained high standards in financial reporting, with timely submission of both narrative and financial reports. As of April 2025, $27.5 million has been drawn from the subaccount against the total approved budget of $29.5 million, reflecting appropriate budget utilisation as the programme approaches its conclusion in March 2026. The programme continues to benefit from the IMF's robust financial management systems, with all expenditures subject to the Fund's stringent internal controls.

Programme delivery and coordination: Regular coordination between FCDO and IMF teams has been maintained through regular progress meetings and output summaries. The programme has successfully delivered against its targets, meeting or exceeding high targets for six of seven output indicators. This strong performance demonstrates the effectiveness of established delivery systems and the continued high demand for MRLIC research products.

The approval of the one-year extension to March 2026, including additional funding of £1.84m, was managed efficiently by both partners. This extension has provided valuable continuity for ongoing research projects while creating space for strategic planning for a potential Phase V.

Value for money: The programme continues to demonstrate excellent value for money, with the average cost per working paper at approximately $70,000 (£53,000) and per published paper at $124,000 (£93,000), both remaining well below FCDO's benchmark of £150,000 per paper. Direct project management costs remain minimal at approximately one percent of the total budget, ensuring maximum resources are directed to research outputs.

Quality of outputs: The IMF has maintained rigorous quality control processes, with all outputs meeting Fund publication standards and many achieving publication in high-ranking peer-reviewed journals. The continued strong uptake of MRLIC tools and research by IMF country teams and national authorities demonstrates the sustained relevance and quality of programme outputs.

Areas of strong performance:

- Consistent delivery against ambitious output targets
- Maintenance of low per-paper costs while ensuring high quality
- Effective adaptation to evolving LIC needs and global challenges
- Strong institutional knowledge retention despite funding uncertainties in previous years

Partnership effectiveness: The relationship between FCDO and IMF remains collaborative and productive. The IMF team has been responsive to FCDO priorities while maintaining the academic rigour necessary for credible policy influence. Both partners have worked effectively to position the programme for future success through the planned external evaluation and pathfinding papers that will inform potential future phases.

As this is a grant arrangement rather than a commercial contract, standard commercial contract provisions such as KPIs, Supply Partner Code compliance, and Strategic Relationship Management scorecards are not applicable. The programme continues to operate under IMF policies and procedures, which provide appropriate governance and accountability frameworks.

This evaluation was carried out by the FCDO programme team demonstrating continued strong oversight and engagement from FCDO in programme management.

G: MONITORING, EVIDENCE AND LEARNING

Monitoring and Evaluation
The IMF MRLIC team reports annually to FCDO regarding the outputs included in the log-frame. In addition to this formal reporting requirement, the MRLIC team provides quarterly updates to on the programme's website which hosts up-to-date information on research and progress and open publicly. The team sends out quarterly e-newsletters that reach an audience of more than 1500 academics, policymakers, central bank staff, and government representatives, among others. These e-newsletters are posted on the programme website. All publicly available working and published papers are uploaded to the R4D portal on the FCDO website. To further ensure public access to all outputs produced through the grant, "Gold access" is assigned to journal publications. The IMF and FCDO project members routinely conduct video conference calls to discuss the programme as needed.

Evidence
FCDO conducts a yearly evaluation of the program. In addition, there is an ongoing external evaluation of the program by Shanta Devarajan (Georgetown University) and Stephen A. O'Connell (Swarthmore College), which is expected to be completed before the end of 2025.

Date of last narrative financial report	May 2025	Date of last audited annual statement	August 2024

Annex A: Summaries of working papers and publications under output 1

Output 1.1 – Working Papers

Topic 1. Modelling and understanding policy choices

1. Quarterly Projection Model for the Bank of Ghana: Extensions and Applications
2. Transport Frictions and the Pass-Through of Global Price Shocks in a Spatial Model of Low-Income Countries

Topic 2. Understanding macro-financial linkages

3. Global Contagion of Financial Reforms
4. Bilateral Trade in Services and Exchange Rates: Evidence of Dominant Currency Pricing

Topic 3. Building resilience

5. The Macroeconomic and Welfare Benefits of Building Resilience in Disaster-Prone Developing Countries
6. Foreign Aid and (Big) Shocks: Evidence from Natural Disasters
7. Foreign Aid and Conflicts: The Effects of 9/11 on Donor Behavior
8. The Urgency of Conflict Prevention – A Macroeconomic Perspective

Topic 4. Promoting structural change and institutional development

9. At the Threshold: The Increasing Relevance of the Middle-Income Trap
10. Dynamic Development Accounting and Relative Income Traps
11. Productive Capacities, Economic Vulnerability and Growth Volatility in Sub-Saharan Africa
12. Economic Diversification in Developing Countries: Lessons from Country Experiences with Broad-Based and Industrial Policies
13. Knowledge Diffusion Through FDI: Worldwide Firm-Level Evidence
14. Changing Global Linkages: A New Cold War?
15. Can Mobile Technologies Enhance Productivity? A Structural Model and Evidence from Benin Food Suppliers
16. Regime-Switching Factor Models and Nowcasting with Big Data
17. Shocks and Shields: Macroeconomic Institutions During Commodity Price Swings
18. State Capacity and Growth Regimes

Topic 5. Enhancing inclusion

We have no working papers under this topic this year.

Output 1.2 – Published Papers

Topic 1. Modelling and understanding policy choices

We have no publication under this topic this year.

Topic 2. Understanding macro-financial linkages

1. Policy Contagion: What Do We Learn from Financial Reforms?
   International Economics Review, forthcoming

Topic 3. Building resilience

We have no publication under this topic this year.

Topic 4. Promoting structural change and institutional development

2. Political institutions and output collapses
   European Journal of Political Economy

3. Changing global linkages: A new Cold War?
   Journal of International Economics

4. Changing Global Linkages: Bridging Geopolitical Fragments
   AEA Papers and Proceedings

Topic 5. Enhancing inclusion

5. The Armistice of the Sexes: Gender Complementarities in the Production Function
   Feminist Economics, forthcoming

Annex B: Details of Country Applications under Output 2

Output 2.1 – Country Applications by authorities and IMF Country Teams

FPAS framework - no publication under this topic this year.

1. Ghana – Technical Assistance mission to develop FPAS processes at the Bank of Ghana
2. Ghana – Technical Assistance Report-Report on Developing the Forecasting and Policy Analysis System (FPAS) at the Bank of Ghana (BOG)

Diversification – no publication under this topic this year.

DIG/DIGNAR/Investment scaling up/Debt sustainability – no publication under this topic this year.

Natural disasters/DIGNAD

3. Democratic Republic of Congo – Democratic Republic of Congo: Requests for an Arrangement Under the Extended Credit Facility and an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; and Statement by the Executive Director for the Democratic Republic of Congo
4. Republic of Congo – Republic of Congo: Selected Issues
5. Côte d'Ivoire – Côte d'Ivoire: Request for an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; and Statement by the Executive Director for Côte d'Ivoire
6. Guinea: 2024 Article IV Consultation and Request for Disbursement Under the Rapid Credit Facility-Press Release; Staff Report; and Statement by the Executive Director for Guinea
7. Guinea – Guinea: Selected Issues
8. Madagascar – Republic of Madagascar: Request for an Arrangement Under the Extended Credit Facility and Cancellation of the Current Arrangement Under the Extended Credit Facility and Request for an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; Staff Supplement; Staff Statement; and Statement by the Executive Director for Republic of Madagascar
9. Maldives – DIGNAD results are presented to country authorities

10. Tanzania – United Republic of Tanzania: Third Review Under the Extended Credit Facility Arrangement and Request for Extension of the Extended Credit Facility Arrangement and Rephasing of Access, and Request for an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; and Statement by the Executive Director for the United Republic of Tanzania

Income and Gender Inequality

11. Guinea: 2024 Article IV Consultation and Request for Disbursement Under the Rapid Credit Facility-Press Release; Staff Report; and Statement by the Executive Director for Guinea
12. Guinea – Guinea: Selected Issues

Food insecurity

13. Sierra Leone – Sierra Leone: Selected Issues

Output 2.2 – Courses to authorities and IMF Staff

1. Workshop: Modelling Climate Risks and Policies – July 2024.
2. Workshop: Macro-Climate Modelling with DIGNAD – July 2024.
3. Course: Compilation of Macro-Relevant Environment and Climate Change Statistics – August 2024.
4. The DIGNAD Model: Applications and a New Toolkit - MathWorks Finance Conference 2024 -October 2024
5. Course: DIGNAD: User's Guide to the Model and Toolkit – November 2024
6. DIGNAD Training in Palau – November 2024
7. Course: Climate in Macroeconomic Frameworks – February 2025

Annex C: Engagement by senior IMF policymakers on issues affecting LICs

Output 3.1 – High-level Policy Conferences Attended by IMF Senior Staff

1. Rethinking economic policy: Steering structural change – April 2024
2. Workshop: AERC-IMF Visiting Scholars Workshop 2024 – September 2024
3. Transforming Industries for Growth in a Fragmented World – November 2024
4. Session ASSA 2025: Policy Uncertainty and Economic Activity – January 2005

Output 3.2 –Results of the research reflected in IMF policy papers such as Board papers, SDNs, policy memos to management

1. Chapter: World Economic Outlook: Slowdown in Global Medium-Term Growth: What Will it Take to Turn the Tide?
2. Box: World Economic Outlook: Distributional Implications of Medium-Term Growth Prospects
3. Box: World Economic Outlook: Fragmentation Is Already Affecting International Trade
4. The 4th Financing for Development Conference-Contribution of the IMF to the International Financing for Development Agenda

Outcome Indicator 1 – Thematic areas of IMF policy influenced and made LIC-specific

1. Relationship between foreign aid, big shocks, and conflicts.

Other Outputs

E-newsletters

1. June 2024 Newsletter
2. September 2024 Newsletter
3. December 2024 Newsletter
4. March 2025 Newsletter

Blogs/Article/Press/Other

1. VoxEU Blog – May 2024: Global gender gaps may never close on their own
2. F&D Article – September 2024: Back to Basics: Total Factor Productivity
3. F&D Article – September 2024: Eliminating the Productivity Drag

External presentations

1. The paper 'Changing Global Linkages: A New Cold War' was presented at
   - Peer-to-Peer Workshop for Central Bank Practitioners in CCAMM (June 2024).
   - Conference on Globalization and Fragmentation in Manila, Philippines (July 2024).

- Workshop on Fragmentation in Trade and Financial Flows at the US Federal Reserve Board (September 2024).
- BIS/WTO/PIIE Conference on Fragmentation (October 2024).
- European Commission's Annual Research Conference (November 2024).
- 2024 Global Challenges Workshop on Industrial Policy and Trade Disruption at Bocconi University (November 2024).
- The Annual Meetings of the Southern Economic Association (November 2024).
- The American Economic Association Annual Meeting in San Francisco (January 2025).

2. The paper 'Do Capital Inflows Spur Technology Diffusion? Evidence from a New Technology Adoption Index' was presented at
   - The Barcelona School of Economics Summer Forum (June 2024).
   - George Washington University Economics Department Seminar Series (October 2024)
   - LACEA/LAMES Annual Meeting (November 2024).
   - The Annual Meetings of the Southern Economic Association (November 2024).
   - The American Economic Association Annual Meeting in San Francisco (January 2025).
   - The Research Institute for Development, Growth and Economics (RIDGE) Forum (December 2024)
3. The country application 'Toward a New Revenue Strategy for Vanuatu: The Role of Income Taxes' was presented at the poster session at the IMF Small Developing States Week (November 2024).
4. The Bilateral Trade in Services (BiTS) database was presented to FCDO staff (November 2024).
5. The paper 'Knowledge Diffusion Through FDI: Worldwide Firm-level Evidence' was presented at the
   - European Commission's Annual Research Conference (November 2024).
   - The American Economic Association Annual Meeting in San Francisco (January 2025).
6. The forthcoming working paper 'The Allocation of Talent and Income Differences Across Countries' was presented at the CREI 30th Anniversary Conference (November 2024).
7. The country application 'Scaling Up Investment, Enhancing Growth, Debt Sustainability, and Climate Resilience in Senegal' was presented at the IMF's Institute for Capacity Development, and as part of the African Department Seminar Series (February 2025).
8. The country application "Evaluating Saving-Investment and Resilience Building Strategies for Palau" was presented at the Small Development States Analytical Seminar (March 2025)

Macroeconomic Research in Low-Income Countries
An FCDO/IMF Research Partnership

Thirteenth Year Annual Report to FCDO
(for period April 2024—March 2025)

Prepared by the Staff of the Research (Hites Ahir, Nan Li, and Petia Topalova) and Strategy, Policy and Review (Ana Paola Cepeda Valor, Povilas Lastauskas and Baoping Shang) Departments

June 6, 2025

1. PROGRAM DESCRIPTION

The FCDO and the IMF established the “Macroeconomic Research in Low-Income Countries” as a strategic research partnership, which aims at (a) supporting cutting-edge research on macro critical issues in low-income countries (LICs); (b) ensuring uptake through the design of the research, and its execution in close collaboration with policymakers within and outside the IMF; (c) using the IMF’s catalytic power to expand the network of macroeconomic researchers working on LICs; and (d) achieving this as cost-effectively as possible. The project started in March 2012, with the current phase (Phase IV) to conclude on March 31, 2026 (extended from the original end date of March 31, 2023, reflecting a rephasing of the disbursement schedule and a one-year extension).

Our research agenda encompasses key components of the macroeconomic challenges facing LICs in the current global environment. We leverage the comparative advantage of the IMF, as a leading multilateral financial institution, by designing and implementing analytic tools to address long-standing and emerging macroeconomic issues. We focus on core macroeconomic and development issues that are critical to achieving sustained and inclusive growth. Many of these issues are at the risk of being neglected by the economics profession at large: very few macroeconomists work on LICs; very few development economists work on macroeconomics (outside of structural/growth issues); and central banks and other macroeconomic institutions in LICs face capacity challenges.

The program encompasses five core areas of research in its fourth phase:

(1) Modelling and understanding policy choices
- For example, monetary, exchange rate, fiscal and structural policies

(2) Understanding macro-financial linkages
- For example, capital flows, financial deepening and inclusion, macro-prudential policies, and transmission of macro-financial shocks

(3) Building resilience
- For example, issues related to natural disasters, climate change, migration, and conflict

(4) Promoting structural change and institutional development
- For example, public investment, growth, and debt sustainability, macroeconomic management of natural resource wealth, growth through diversification, structural reforms

(5) Enhancing inclusion
- For example, income inequality, macroeconomic policy and income distribution, gender and macroeconomics

IMF staff members and project-funded researchers collaborate to produce high-quality research papers on these broad themes to better inform the Fund’s policy advice in LICs. To further maximize the policy impact of the project’s research outputs, most papers are freely shared with FCDO and external policy makers through FCDO’s research portal and a dedicated project website maintained by the IMF. In addition to producing research and encouraging its uptake by country authorities as well as the IMF, other crucial components of the IMF-FCDO partnership include designing toolkits and building databases to support IMF policy advice for LICs, presentations at high-level academic and policy conferences, training, commissioning papers, quarterly e-newsletters to a broad network of LIC researchers and policy makers, and organizing conferences and other outreach events.

Start and End Dates:

Phase I: March 2012 to March 2015
Phase II: April 2015 to March 2017
Phase III: April 2017 to March 2020
Phase IV: April 2020 to March 2026 (this includes a one-year extension).

Countries Covered:

The project covers the countries listed in Table 1. These countries are referred to as "low-income countries (LICs)" in this report.

Table 1. Countries Covered in This Project and Their GNI Per Capita[1]

Country	2011 GNI per capita (US $)	Country	2011 GNI per capita (US $)
Afghanistan	410	Maldives	6530
Bangladesh	770	Mali	610
Benin	780	Marshall Islands	3910
Bhutan	2070	Mauritania	1000
Bolivia	2040	Micronesia	2900
Burkina Faso	570	Moldova	1980
Burundi	250	Mongolia	2320
Cambodia	830	Mozambique	470
Cameroon	1210	Myanmar	NA
Cape Verde	3540	Nepal	540
Central African Republic	470	Nicaragua	1170
Chad	690	Niger	360
Comoros	770	Nigeria	1200
Congo, Rep.	2270	Papua New Guinea	1480
Congo, Dem. Rep.	190	Rwanda	570
Côte d'Ivoire	1100	Samoa	3190
Djibouti	1270	São Tomé and Principe	1360
Dominica	7090	Senegal	1070
Eritrea	430	Sierra Leone	340
Ethiopia	400	Solomon Islands	1110
Gambia, The	610	Somalia	NA
Georgia	2860	South Sudan	984
Ghana	1410	St. Lucia	6680
Grenada	7220	St.Vincent and the Grenadines	6100
Guinea	440	Sudan	1300
Guinea-Bissau	600	Tajikistan	870
Guyana	2900	Tanzania	540
Haiti	700	Timor-Leste	2730
Honduras	1970	Togo	560
Kenya	820	Tonga	3580
Kiribati	2110	Tuvalu	5010
Kyrgyz Republic	920	Uganda	510
Lao PDR	1130	Uzbekistan	1510
Lesotho	1220	Vanuatu	2870
Liberia	240	Vietnam	1260
Madagascar	430	Yemen	1070
Malawi	340	Zambia	1160
Memorandum Item			
Zimbabwe	640		

Source: Fund WEO, World Bank, World Development Indicators, and OP 3.10, Annex C, of July 2012. Fund Board decision of April 8, 2013, on Eligibility to Use the Fund's Facilities for Concessional Financing.

[1] The countries included in this table are those that were eligible for the IMF concessional financing under the Poverty Reduction and Growth Trust (PRGT) as of 2013, and the table includes the countries that have graduated since then (e.g., Bolivia and Mongolia) but continue to face policy challenges similar to those in PRGT-eligible countries.

2. OVERVIEW OF THE YEAR

2.1 Progress and achievements

Financial year 2025 (April 2024 to March 2025) marked the 13th year of MRLIC operations. In October 2024, a one-year extension for Phase IV was approved starting in April 2025, offering the opportunity to take stock of the MRLIC program since its launch in 2012 and to prepare for a potential Phase V, while providing continuity for ongoing research projects.

In its 13th year, the strategic partnership continued to advance research on macroeconomic challenges critical for LICs, including weak growth prospects, high public debt levels and debt service burdens, large investment needs including for climate adaptation, tight global financial conditions and declining official flows, and trade and financial fragmentation, including as outlined in the *4th Financing For Development Conference—Contribution of the IMF to the International Financing For Development Agenda*. The program successfully delivered on its targets, meeting or exceeding the high target for six of the seven output indicators and reaching the middle target for one indicator (Table 2[1]).

Contribution to high-level IMF policy papers. MRLIC-supported research featured in several high-level IMF policy documents. A chapter in the April 2024 *World Economic Outlook* (WEO), *"Slowdown in Global Medium-Term Growth: What Will It Take to Turn the Tide?"*, analyzed key drivers of slowing medium-term global growth. A related WEO box, *"Distributional Implications of Medium-Term Growth Prospects",* examined the potential impact of slower growth on global income inequality and convergence, with specific insights across income groups, including LICs. Another box, "*Fragmentation is Already Affecting International Trade*", analyzed trade dynamics across sectors and political blocs since Russia's invasion of Ukraine. Finally, MRLIC-supported research on financial inflows to developing countries is featured in the Board paper, "*4th Financing For Development Conference—Contribution of the IMF to the International Financing For Development Agenda*" focusing on the trends and composition of the different types of flows.

Supporting IMF policy dialogue with its members. MRLIC-supported products contributed directly to IMF country operations through surveillance, lending, and capacity development. Examples included a TA mission on developing the Forecasting and Policy Analysis System (FPAS) at the Bank of Ghana, training and country applications of the Debt, Investment, Growth, and Natural Disaster (DIGNAD) model in Article IV consultations and IMF-supported programs (see section 3, output 2.1), the application of the MRLIC-funded Multisector Incomplete Markets Macro-Inequality (MIMMI) app in Guinea's Article IV consultation, the use of the framework developed in the context of the April 2024 WEO chapter for assessing productivity trends in multiple Article IV reports, and the wide use of the *World Uncertainty Index* dataset (e.g., April 2024 *WEO*, Article IV consultations for Vanuatu and Vietnam, the *2024 Global Debt Monitor*, the *Fiscal Monitor*, and the October 2024 *Global Financial Stability Report)*.

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[1] Please refer to Appendix 3 for a detailed description of MRLIC outputs, which has also been disseminated through the MRLIC quarterly newsletters.

Policy conferences. Four high-level policy-critical conferences helped disseminate MRLIC output and advance macroeconomic research in LICs.

- *Rethinking Economic Policy: Steering Structural Change* (April 2024). The conference explored how policy can navigate structural transformations, while ensuring inclusive benefits and overcoming political economy barriers, including in non-advanced economies.
- *African Economic Research Consortium (AERC)-IMF Visiting Scholars Workshop* (September 2024). The event brought together six researchers from Benin, Cameroon, Senegal, Sierra Leone, and Zimbabwe for paper presentations and one-on-one mentorship sessions with IMF economists, covering topics ranging from tax efficiency to mis-invoicing and exchange rate shocks.
- *Transforming Industries for Growth in a Fragmented World* (November 2024). The event discussed policy lessons from MRLIC research on economic diversification strategies in developing countries, with emphasis on industrial and broad-based policy approaches.
- *ASSA 2025 Meetings—Session*: *Policy Uncertainty and Economic Activity (January 2005)*. Co-organized by the IMF and Stanford University, the session featured four papers analyzing global trade and fiscal uncertainty—including applications of the *World Uncertainty Index*—and their effects on growth, production, and market outcomes.

Paper publications and presentations. MRLIC staff published 18 papers through the IMF Working Paper (WP) series, 5 papers in peer-reviewed academic journals, and three blogs. In addition, MRLIC delivered 21 external presentations at institutions such as the U.S. Federal Reserve Board, the European Commission's Annual Research Conference, as well as other government bodies and prominent academic and policy institutions.

2.2 Highlights of five broad topics

In this section, we summarize research outputs across the five main topics. Description of the research, along with the MRLIC outputs mentioned above, can be found in Appendix 3.

(i) Modeling and understanding policy choices

Two IMF WPs contributed to this area. One focuses on helping enhance the Bank of Ghana's Quarterly Projection Model (QPM) for forward-looking monetary policy and shock simulations. The other develops a model to analyze the welfare impacts of global price shocks on households, underscoring the need for tailored fiscal responses.

(ii) Understanding macro-financial linkages

A paper published in the *International Economics Review* shows that financial reforms in the 1990s were driven by geopolitical influence and learning, while post-crisis reversals following the global financial crisis reflected changing views on growth benefits. In addition, one IMF WP analyzes the drivers of global financial reforms and reversals, while another examines how dominant currency pricing and exchange rates shape trade patterns.

<u>(iii) Building resilience</u>

Four IMF WPs contributed to this theme, covering fiscal tools for disaster resilience, foreign aid responses to disasters, shifts in donor behavior post-9/11, and the conflict prevention role of macroeconomic policies.

<u>(iv) Promoting structural change and institutional development</u>

Three papers published in academic journals and ten IMF WPs explored diverse aspects of the topic.

Two papers, one in the *European Journal of Political Economy* and the other in *Journal of International Economics,* explore respectively the links between political regimes and output collapses, and between political regimes and the fragmentation of global trade. A forthcoming paper in *AEA Papers and Proceedings* shows how 'connector' countries are absorbing redirected trade and investment flows amid U.S.–China trade tensions.

The IMF WPs cover broad topics, including income and poverty traps, key enablers of structural transformation, the role of TFP, institutions and industrial policies, FDI spillovers, digital adoption in Africa, nowcasting methods, and institutional responses to commodity shocks.

<u>(v) Enhancing inclusion</u>

A paper in *Feminist Economics* shows that male and female labor are not perfect substitutes, implying larger gains from gender inclusiveness than standard models suggest.

2.3 Challenges and opportunities

The MRLIC program has played an important role in filling gaps in macroeconomic research in LICs, formulating macroeconomic policies tailored to LIC context, and creating toolkits and facilitating their applications in LICs. The program has focused on the five areas mentioned above, but the challenges facing LICs are rapidly evolving, including escalating geoeconomic tensions, declining development assistance, and structural transformations such as climate change, demographic shifts, and advancement in digitalization and AI. These all have important macroeconomic implications for LICs.

The one-year extension, particularly the planned comprehensive review by two external experts and the commissioned pathfinding papers, provides an opportunity to assess past experiences on the effectiveness and impact of the MRLIC program, to better understand the challenges facing LICs in the current global context, and to identify gaps for macroeconomic research in LICs and priorities for a potential Phase V.

3. LOG-FRAME OUTPUTS

The output of this research project is evaluated across four main categories:

1) Produce high quality, policy-relevant research on macroeconomic issues affecting LICs
2) Promote and increase the usage of IMF research products generated under this project by IMF country teams and partner authorities
3) Strengthen engagement by senior IMF policymakers on issues affecting LICs
4) Strengthen capacity-building by expanding the network of LIC researchers

An overview of the research outputs for the thirteen years of this project is given in Table 2. In FY2025, the program had another year of strong performance, meeting or exceeding the high target for all indicators for year 13 of the program, except for one indicator, where it is above the medium target.

Table 2. Summary of Research Outputs

Type of output	Year 1 Outputs	Year 2 Outputs	Year 3 Outputs	Year 4 Outputs	Year 5 Outputs	Year 6 Outputs	Year 7 Outputs	Year 8 Outputs	Year 9 Outputs	Year 10 Outputs	Year 11 Outputs	Year 12 Outputs	Year 13 Outputs	Total	Targets	
	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025			
Working papers (1.1)	13	17	10	16	20	18	20	16	21	14	13	13	18	209	H	200
															M	196
															L	190
Published papers (1.2)	2	6	8	9	15	10	12	15	13	8	7	8	5	118	H	117
															M	115
															L	113
Instances of uptake by authorities and IMF teams (2.1)	10	14	17	16	23	34	22	25	22	20	10	10	13	236	H	233
															M	230
															L	227
Courses (2.2)	.	.	.	.	.	9	7	4	8	10	5	9	7	59	H	53
															M	51
															L	49
High-level policy conferences attended by senior IMF staff (3.1)	6	4	2	1	9	8	6	4	2	8	3	3	4	60	H	60
															M	59
															L	58
Results of the research reflected in IMF policy papers such as Board papers, SDNs, policy memos to management (3.2)	4	4	3	2	6	10	7	5	8	5	5	3	4	66	H	67
															M	65
															L	63
Thematic areas of IMF policy influenced and made LIC-specific (1)	3	2	0	0	3	2	1	1	4	2	2	1	1	22	H	22
															M	21
															L	20

Log-frame Outputs

Output 1: Produce high quality, policy relevant research on macroeconomic issues affecting LICs

This year our team produced 18 working papers and published 5 papers in academic journals.

Output 1.1 – Working Papers

Topic 1. Modelling and understanding policy choices

1. Quarterly Projection Model for the Bank of Ghana: Extensions and Applications
2. Transport Frictions and the Pass-Through of Global Price Shocks in a Spatial Model of Low-Income Countries

Topic 2. Understanding macro-financial linkages

3. Global Contagion of Financial Reforms
4. Bilateral Trade in Services and Exchange Rates: Evidence of Dominant Currency Pricing

Topic 3. Building resilience

5. The Macroeconomic and Welfare Benefits of Building Resilience in Disaster-Prone Developing Countries
6. Foreign Aid and (Big) Shocks: Evidence from Natural Disasters
7. Foreign Aid and Conflicts: The Effects of 9/11 on Donor Behavior
8. The Urgency of Conflict Prevention – A Macroeconomic Perspective

Topic 4. Promoting structural change and institutional development

9. At the Threshold: The Increasing Relevance of the Middle-Income Trap
10. Dynamic Development Accounting and Relative Income Traps
11. Productive Capacities, Economic Vulnerability and Growth Volatility in Sub-Saharan Africa
12. Economic Diversification in Developing Countries: Lessons from Country Experiences with Broad-Based and Industrial Policies
13. Knowledge Diffusion Through FDI: Worldwide Firm-Level Evidence
14. Changing Global Linkages: A New Cold War?
15. Can Mobile Technologies Enhance Productivity? A Structural Model and Evidence from Benin Food Suppliers
16. Regime-Switching Factor Models and Nowcasting with Big Data
17. Shocks and Shields: Macroeconomic Institutions During Commodity Price Swings
18. State Capacity and Growth Regimes

Topic 5. Enhancing inclusion

We have no working papers under this topic this year.

Output 1.2 – Published Papers

Topic 1. Modelling and understanding policy choices

We have no publication under this topic this year.

Topic 2. Understanding macro-financial linkages

1. Policy Contagion: What Do We Learn from Financial Reforms?
   International Economics Review, forthcoming

Topic 3. Building resilience

We have no publication under this topic this year.

Topic 4. Promoting structural change and institutional development

2. Political institutions and output collapses
   European Journal of Political Economy

3. Changing global linkages: A new Cold War?
   Journal of International Economics

4. Changing Global Linkages: Bridging Geopolitical Fragments
   AEA Papers and Proceedings

Topic 5. Enhancing inclusion

5. The Armistice of the Sexes: Gender Complementarities in the Production Function
   Feminist Economics, forthcoming

<u>Output 2: IMF research produced under the MRLIC project used by authorities and IMF country teams</u>

This year there are 13 uptakes by country authorities and IMF country teams, and 7 courses offered to country authorities and IMF staff.

Output 2.1 – Country Applications by authorities and IMF Country Teams

FPAS framework - no publication under this topic this year.

1. Ghana – Technical Assistance mission to develop FPAS processes at the Bank of Ghana
2. Ghana – Technical Assistance Report-Report on Developing the Forecasting and Policy Analysis System (FPAS) at the Bank of Ghana (BOG)

Diversification – no publication under this topic this year.

DIG/DIGNAR/Investment scaling up/Debt sustainability – no publication under this topic this year.

Natural disasters/DIGNAD

3. Democratic Republic of Congo – Democratic Republic of Congo: Requests for an Arrangement Under the Extended Credit Facility and an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; and Statement by the Executive Director for the Democratic Republic of Congo
4. Republic of Congo – Republic of Congo: Selected Issues
5. Côte d'Ivoire – Côte d'Ivoire: Request for an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; and Statement by the Executive Director for Côte d'Ivoire
6. Guinea: 2024 Article IV Consultation and Request for Disbursement Under the Rapid Credit Facility-Press Release; Staff Report; and Statement by the Executive Director for Guinea
7. Guinea – Guinea: Selected Issues
8. Madagascar – Republic of Madagascar: Request for an Arrangement Under the Extended Credit Facility and Cancellation of the Current Arrangement Under the Extended Credit Facility and Request for an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; Staff Supplement; Staff Statement; and Statement by the Executive Director for Republic of Madagascar
9. Maldives – DIGNAD results are presented to country authorities
10. Tanzania – United Republic of Tanzania: Third Review Under the Extended Credit Facility Arrangement and Request for Extension of the Extended Credit Facility Arrangement and Rephasing of Access, and Request for an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; and Statement by the Executive Director for the United Republic of Tanzania

Income and Gender Inequality

11. Guinea: 2024 Article IV Consultation and Request for Disbursement Under the Rapid Credit Facility-Press Release; Staff Report; and Statement by the Executive Director for Guinea
12. Guinea – Guinea: Selected Issues

Food insecurity

13. Sierra Leone – Sierra Leone: Selected Issues

Output 2.2 – Courses to authorities and IMF Staff

1. Workshop: Modelling Climate Risks and Policies – July 2024.
2. Workshop: Macro-Climate Modelling with DIGNAD – July 2024.
3. Course: Compilation of Macro-Relevant Environment and Climate Change Statistics – August 2024.
4. The DIGNAD Model: Applications and a New Toolkit - MathWorks Finance Conference 2024 - October 2024
5. Course: DIGNAD: User's Guide to the Model and Toolkit – November 2024
6. DIGNAD Training in Palau – November 2024
7. Course: Climate in Macroeconomic Frameworks – February 2025

Output 3: IMF strengthens engagement by senior IMF policymakers on issues affecting LICs

This year our team held and contributed to 4 high-level policy conferences, involving IMF and other senior staff. The team also contributed to 4 outputs that were discussed at the IMF Executive Board.

Output 3.1 – High-level Policy Conferences Attended by IMF Senior Staff

1. Rethinking economic policy: Steering structural change – April 2024
2. Workshop: AERC-IMF Visiting Scholars Workshop 2024 – September 2024
3. Transforming Industries for Growth in a Fragmented World – November 2024
4. Session ASSA 2025: Policy Uncertainty and Economic Activity – January 2005

Output 3.2 –Results of the research reflected in IMF policy papers such as Board papers, SDNs, policy memos to management

1. Chapter: World Economic Outlook: Slowdown in Global Medium-Term Growth: What Will it Take to Turn the Tide?
2. Box: World Economic Outlook: Distributional Implications of Medium-Term Growth Prospects
3. Box: World Economic Outlook: Fragmentation Is Already Affecting International Trade
4. The 4th Financing for Development Conference-Contribution of the IMF to the International Financing for Development Agenda

Outcome Indicator 1 – Thematic areas of IMF policy influenced and made LIC-specific

1. Relationship between foreign aid, big shocks, and conflicts.

Other Outputs

E-newsletters

1. June 2024 Newsletter
2. September 2024 Newsletter
3. December 2024 Newsletter
4. March 2025 Newsletter

Blogs/Article/Press/Other

1. VoxEU Blog – May 2024: Global gender gaps may never close on their own
2. F&D Article – September 2024: Back to Basics: Total Factor Productivity
3. F&D Article – September 2024: Eliminating the Productivity Drag

External presentations

1. The paper 'Changing Global Linkages: A New Cold War' was presented at
    - Peer-to-Peer Workshop for Central Bank Practitioners in CCAMM (June 2024).
    - Conference on Globalization and Fragmentation in Manila, Philippines (July 2024).
    - Workshop on Fragmentation in Trade and Financial Flows at the US Federal Reserve Board (September 2024).
    - BIS/WTO/PIIE Conference on Fragmentation (October 2024).
    - European Commission's Annual Research Conference (November 2024).
    - 2024 Global Challenges Workshop on Industrial Policy and Trade Disruption at Bocconi University (November 2024).
    - The Annual Meetings of the Southern Economic Association (November 2024).
    - The American Economic Association Annual Meeting in San Francisco (January 2025).
2. The paper 'Do Capital Inflows Spur Technology Diffusion? Evidence from a New Technology Adoption Index' was presented at
    - The Barcelona School of Economics Summer Forum (June 2024).
    - George Washington University Economics Department Seminar Series (October 2024)

- LACEA/LAMES Annual Meeting (November 2024).
- The Annual Meetings of the Southern Economic Association (November 2024).
- The American Economic Association Annual Meeting in San Francisco (January 2025).
- The Research Institute for Development, Growth and Economics (RIDGE) Forum (December 2024)

3. The country application 'Toward a New Revenue Strategy for Vanuatu: The Role of Income Taxes' was presented at the poster session at the IMF Small Developing States Week (November 2024).
4. The Bilateral Trade in Services (BiTS) database was presented to FCDO staff (November 2024).
5. The paper 'Knowledge Diffusion Through FDI: Worldwide Firm-level Evidence' was presented at the
    - European Commission’s Annual Research Conference (November 2024).
    - The American Economic Association Annual Meeting in San Francisco (January 2025).
6. The forthcoming working paper ‘The Allocation of Talent and Income Differences Across Countries’ was presented at the CREI 30th Anniversary Conference (November 2024).
7. The country application ‘Scaling Up Investment, Enhancing Growth, Debt Sustainability, and Climate Resilience in Senegal’ was presented at the IMF’s Institute for Capacity Development, and as part of the African Department Seminar Series (February 2025).
8. The country application “Evaluating Saving-Investment and Resilience Building Strategies for Palau” was presented at the Small Development States Analytical Seminar (March 2025)

4. OUTPUTS: ADDITIONAL INFORMATION

Nothing more to report at this time.

5. UPTAKE/ENGAGEMENT WITH BENEFICIARIES

By design, this project continually aims to produce high quality research that is applicable to LICs and usable by country authorities, academics, and IMF staff. Each output captured in the log-frame reflects this overarching goal. Sections 2, 3, and 6 of this report address our uptake and engagement with beneficiaries in greater detail.

6. OUTCOMES AND IMPACTS

In addition to the positive results reflected in the log-frame outputs (Table 2), this section provides evidence of notable research and policy impacts from the MRLIC program.

6.1 Instances of uptake by authorities and IMF teams

This section presents examples of country applications of MRLIC tools, illustrating their uptake by IMF teams and country authorities and their contribution to informed policymaking in LICs.

- **Côte d'Ivoire.** During the Executive Board meeting for Côte d'Ivoire in December 2024, DIGNAD was discussed in the context of supporting climate adaptation efforts as part of the RSF arrangement (see section 3, output 2.1). The Board emphasized the importance of strengthening climate resilience and noted that quantitative models—such as DIGNAD—are expected to effectively support these efforts.

- **Ghana.** With the support by MRLIC under a multi-year Technical Assistance (TA) project, Bank of Ghana (BoG) significantly strengthened its macroeconomic forecasting and policy analysis capabilities through the development and integration of a modern Forecasting and Policy Analysis System (FPAS). The project concluded in 2024 with a mission to further enhance BoG's Quarterly Projection Model (QPM). The project built strong analytical capacity among BoG staff, focusing on model-based analysis and forecasts central to BoG's deliberations, monetary policy formulation, and communications. The project's outcomes were detailed in a TA Report, and a recent IMF Working Paper—co-authored by IMF and BoG staff—documents additional QPM extensions and applications, demonstrating its practical value in supporting policymaking.

- **Guinea.** The Multisector Incomplete Markets Macro-Inequality (MIMMI) app and the IMF's Debt, Investment, Growth, and Natural Resources (DIGNAR) model were applied in the 2024 Article IV, including a selected issues paper. The reports assess the Simandou project's macroeconomic and distributional impacts, a large mining initiative in Guinea. The findings highlight that realizing the project's growth, equity, and climate benefits depends on proactive policies and investment in infrastructure and education. The work also helped enhance the MIMMI app, expanding its capacity to assess multidimensional policy options.

- **Rwanda.** In the context of Rwanda's Executive Board Meeting in December 2024, a joint statement welcomed the use of quantitative analytical tools—specifically noting the DIGNAD framework alongside the Debt Sustainability Analysis (DSA)—as important inputs underpinning the RSF program design and policy assessments.

6.2 Insights from capacity development trainings

As part of its efforts to build capacity on macroeconomic modeling tools, the MRLIC team delivered seven trainings for IMF staff, government officials, and broader audiences, primarily on the policy applications of the DIGNAD model.

IMF staff training: Training for IMF staff plays a key role in equipping economists with the skills to apply MRLIC tools in policy work, including Article IV consultations, Fund-supported programs, and technical assistance. For example, the MRLIC team delivered a DIGNAD training in November 2024, which helped reinforce these capabilities within the IMF. The course was attended by 21 participants and rated 4.73/5, with feedback highlighting its strong relevance and practical value for operational work.

A clear example is Palau, where the application of the DIGNAD model received strong feedback from the country team. As Elif Arbatli (Deputy Division Chief at the Asia Pacific Department and Mission Chief for Palau) notes: “Palau team and authorities benefited greatly from the application of the DIGNAD model to study fiscal policy tradeoffs associated with higher grants under a renewed Compact Agreement, securing debt sustainability, and enhancing resilience to climate risks. The application has provided an invaluable framework to discuss the medium-term fiscal anchor and policies with the authorities.” This illustrates how dissemination efforts can directly support the quality and effectiveness of IMF engagement with countries.

- **Government officials and stakeholders training:** MRLIC-supported trainings help build capacity among government officials to integrate tools like the DIGNAD model into domestic policymaking. The training is particularly effective if it is jointly delivered with the IMF’s Regional Training Centers such as the African Training Institute’s (ATI) which plays a key role in strengthening the capacity of countries in the African region and promoting the use of tools such as DIGNAD in policymaking.

  For example, the 2025 course on Climate in Macroeconomic Frameworks brought together representatives from 36 countries, including 7 LICs. The course received strong feedback (rated 4.7/5), with participants highlighting its relevance to their work at the Ministry of Finance, its complementarity to natural disasters assessment, and the hands-on training of the DIGNAD model.

  More specifically, a staff member from the Reserve Bank of Zimbabwe participated in a DIGNAD related training in February 2024 and calibrated the model to Zimbabwe’s economic conditions in a policy paper, with support from the MRLIC team. This demonstrates how training can directly strengthen country capacity and lead to improvements in policy analysis by the authorities.

- **Dissemination to broader audiences:** Presenting MRLIC-supported tools to wider audiences can further increase the program reach and impact. At the 2024 MathWorks Finance Conference (attended by around 1,400 participants), the MRLIC team showcased the DIGNAD toolkit, highlighting its use for climate and resilience analysis. The event provided an opportunity to engage with private sector experts, academia, and policymakers, expanding awareness and potential uptake beyond the typical IMF audiences.

6.3 Feedback on MRLIC work

Several senior IMF staff and external researchers have highlighted the value and relevance of the MRLIC program in general and some of the toolkits specifically in addressing LICs' macroeconomic challenges.

Andrew Berg (Deputy Director of the IMF's Institute for Capacity Development) noted: "Most academic macroeconomists pay little attention to developing countries, and most development economists focus on microeconomic issues. The FCDO-IMF collaboration continues to bridge this gap, producing high-quality research of immediate usefulness to policymakers in low-income countries and to their IMF partners. And all this in areas of critical importance to the IMF and its members, ranging most recently from the implications of natural disasters for monetary policy and debt sustainability to the role of macroeconomic institutions in shielding countries from the adverse effects of commodity price swings."

Additionally, Rabah Arezki—a collaborator of the MRLIC program as a Visiting Scholar at the IMF, and former Chief Economist of African Development Bank and Chief Economist for the Middle East and North Africa region at the World Bank—noted, drawing on his experience as both a practitioner and a researcher on macroeconomic issues in LICs, that "I see firsthand the value of MRLIC to fill in the gaps in the literature and also in helping operationalize macroeconomic research in low-income countries. Examples include the work on macroeconomic implications of natural disasters and strengthening monetary policy frameworks in low-income countries. The work has really helped enhance the capacity and macroeconomic policymaking in low-income countries. I strongly hope that the program will continue, particularly given the many challenges that low-income countries are facing in the current environment, from geoeconomic and trade tensions, high debt levels, tight global financial conditions, to weak medium-term growth prospect, climate change, and rapid progressing in digitalization and generative AI".

Vimal Thakoor (Resident Advisor on Macroeconomics and Climate, IMF's Africa Training Institute) emphasized that: "While all SSA countries are focused on investing in resilience to manage climate-related risks, elevated debt levels and the constrained external financing have increased the impetus on well-informed and judicious investment decisions. The IMF's DIGNAD model plugs a gap in the analytical toolkit by helping countries consider (standard- and climate-resilient) investment options, different financing mixes (such as grants, loans, domestic revenue mobilization, and debt), and strengthened public financial management to compare macroeconomic outcomes and debt paths under different scenarios. The appeal of the DIGNAD lies in its easy to use excel-based interface and a responsive and dedicated technical team in the IMF's Research Department. The DIGNAD is being used in both Article IV (surveillance) and lending in the context of the Resilience and Sustainability Fund to inform investment and climate finance decisions. It is also extensively used at the IMF's Africa Training Institute, where officials from around 40 SSA countries have been trained in using the model. Some course participants have independently calibrated the DIGNAD for their countries after the training and written working papers. There remains strong interest in the training and technical assistance on the DIGNAD model in the region."

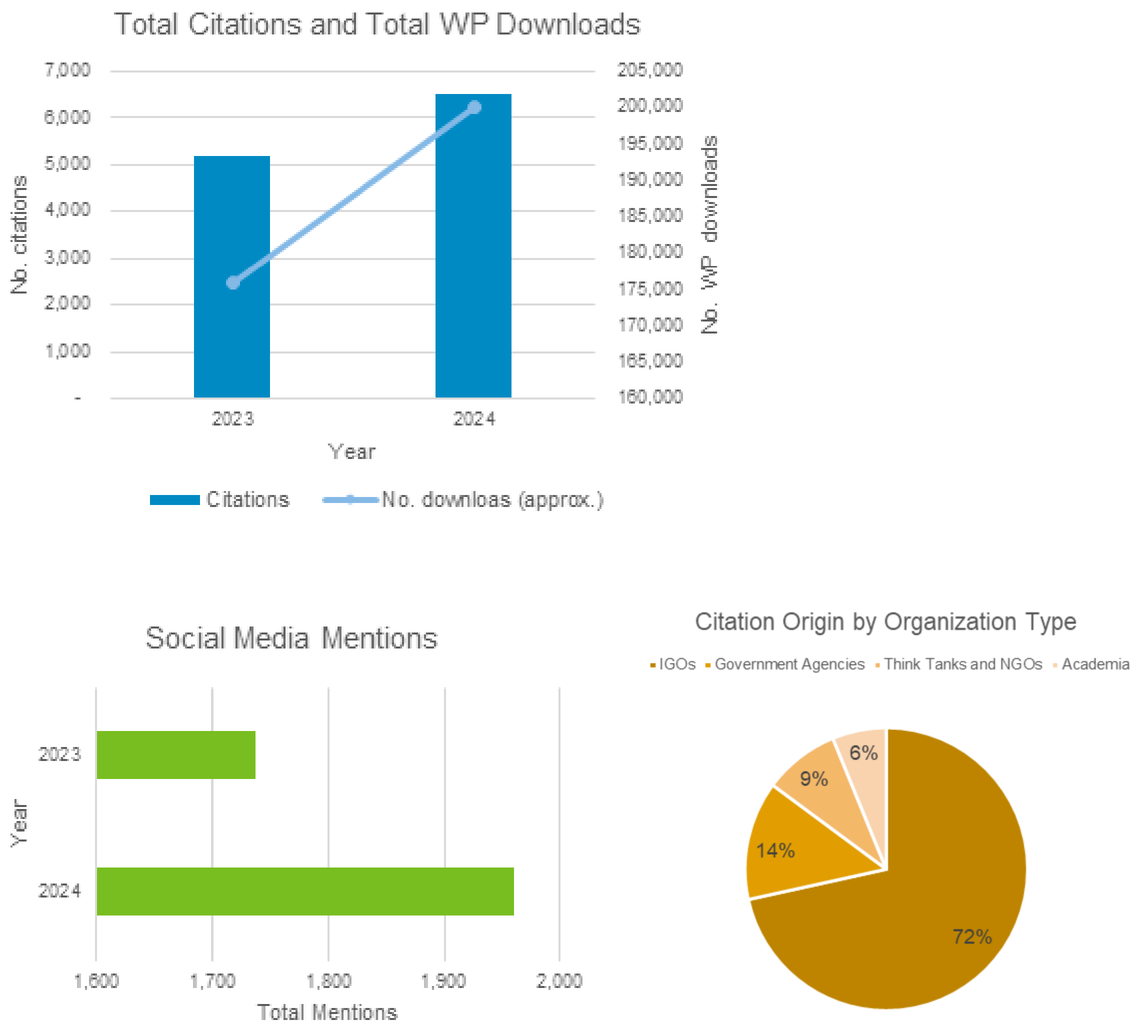
6.4 Citations, downloads, and mentions in social media[2]

The quality of the MRLIC outputs is further demonstrated by the large attention they draw from the research community and on social media:

- 86.3 percent of MRLIC-supported publications have been cited, averaging 23.4 citations per article.
- Publications are relevant to Sustainable Development Goals (SDGs) 1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 13, 15, 16, and 17.
- On social media, the MRLIC-supported product 'Changing Global Linkages: A New Cold War?' generated 61 posts on X (formerly Twitter) from 57 accounts within four months of its January 2025 release, reflecting high interest. It has also been cited in speeches by senior IMF management (see speech by Gita Gopinath—First Deputy Managing Director) and policymakers (see speech by Joachim Nagel—President of the Deutsche Bundesbank).

[2] The IMF Library team (Gladys K. H. Mitchell) conducted the analysis on citations and social media. The number of downloads of the IMF Working Papers was provided by the IMF's Communication Department (Axana Abreu Panfilova, and John Sonnick).

Figure 1: Citations, WP Downloads, Social Media Mentions, and Citation Origins of MRLIC-Related Products for Year 13



Source: IMF Library and authors' calculations.

Note: The average number of downloads of MRLIC-related IMF WPs increased by 14 percent, with an average of 962 downloads per paper.

7. COSTS, VALUE FOR MONEY, AND MANAGEMENT

The approved budget for the project is US$29.5 million.[3]

Appendix 2 provides the project's formal financial reporting, generated by the IMF's accounting system. As of April 2025, $27.5 million has been drawn from the subaccount. These figures reflect a lag of actual expenses of approximately two to three months to enable the requisite verification of expenses before they are charged to donor subaccounts.

The following table provides an indicative breakdown of spending over 13 years of the project. We do not foresee any changes in cost structures due to exchange rates.

Table 3. Project Expenditures in Years 1-13

Activity	**Years 1-13, Cumulative**
HQ led missions including entire mission team	$6,823,847
Research HQ based / Visiting Scholars; Short-term Advisors; Development of CD tools; Development of general CD technical materials; Development of training courses or other learning materials	$12,665,489
Seminars & Study Tours; Interactive learning and workshops	$1,860,727
Project Backstopping	$3,173,599
Project Management	$588,257
Exceptional Expenses	$550,638
Language Services	$2,170
Trust Fund Fee	$1,796,531
Total	**$27,461,258**

Source: Appendix 2.
Note: Activity items are consolidated.

Value for Money:

This project remains highly cost effective, owing to solid governance of the procurement process and the high-quality work by the team. The team strictly follows all Fund guidelines for hiring, travel, and conferences. All contractual employees undergo a competitive process before being hired. Outputs are produced within strict timeframes and must meet Fund requirements for publication. The quality of our papers is further assessed when they are submitted to peer-reviewed publications.

The average cost per paper is lower than the FCDO benchmark of $188,430 (£150,000) per paper.[4] Table 4 shows that the cost per working paper for the 13 years is approximately $70,000

[3] This is based on $23.3 million up to Phase III plus $6.2 million of Phase IV (which is equivalent to £4.7 million based on the exchange rate as of May 15, 2025).

[4] The currency conversion is based on the exchange rate as of May 15, 2025 (U.K. £1 = U.S. $1.33). The FCDO

(£53,000),-down from last year—$72,000 (£54,000) and that the cost per published paper is about $124,000 (£93,000), compared to about $123,000 (£92,000) last year. We estimate that staff, contractual employees, and visiting scholars spend 75 percent of their time on research papers, while the remaining 25 percent is devoted to country applications.[5] The total staff, contractual, and visiting scholar cost is thus split between papers and applications.

The quality of the project outputs is very high despite the low average cost. The total number of journal publications reached 118 over the 13 years. The full list of the publications is available at the project's website (in an excel file under "Outputs" in the middle of the left-side menu section). As noted in a dedicated paragraph in the Progress and Achievements part of Section 2, the papers are published in high-ranked journals and are well cited by external researchers. Our products are also featured in programs of prestigious conferences as noted in Section 6. Strong uptakes by country authorities and IMF country teams also demonstrate the high relevance and usefulness of the project's outcomes in practical policymaking.

Table 4. Cost per Working and Published Paper during Years 1-13

Total Staff/Contractual/VS Costs[1]	$19,489,336
Research Paper Costs	$14,617,002
Country Applications Costs	$4,872,334
Working Papers[2]	209
Cost Per Working Paper	$69,938
Published Papers[2]	118
Cost per Published Paper	$123,873

[1] Estimated as the sum of the first two lines of Table 3. Note that the first line of Table 3 includes both IMF staff salary and travel expenses. Thus, the estimates we have calculated for working and published paper costs likely overestimate the true cost of research time.

[2] These include commissioned papers.

Direct project management costs represent approximately one percent of our total budget. If we include the Trust Fund management fee, program management costs will be about eight percent. This means that most of the funds available to this project have been spent on producing high quality research.

benchmark cost per paper is £150,000, while its value in U.S. dollars is subject to exchange rate fluctuations.

[5] The total research staff costs are estimated as the sum of the first two lines of Table 3. Note that the first line of Table 3 includes both IMF staff salary and travel expenses. Thus, the estimates we have calculated for working and published paper costs likely overestimate the true cost of research time.

8. WORK PLAN AND TIMETABLE

Individual work plans

An overview of our plans for each topic is presented below.

(1) Modelling policy choices

a. A team will work on a paper on *A Monetary Policy Framework for Low Income Countries*. They will present an Open Economy HANK model with relevant features for low-income countries, such as hand-to-mouth consumers and subsistence and calibrate it for an average low-income country. When assessing monetary policy in the presence of a shock to external prices (such as food), they find that a less aggressive monetary policy stance does not make much of a difference for the welfare of poorer households, but fiscal transfers are powerful to address inequality issues.

b. There will be a paper on *Monetary Policy Transmission in the Household Sector: Evidence from Uganda's Credit Registry Data*. The effectiveness of monetary policy transmission remains a central issue in the policy debate for Low Income and Developing Countries. Using granular data on loan amounts and rates from Uganda's credit reference bureau, the authors analyze the impact of monetary policy changes on household credit by isolating credit supply from demand effects at the individual borrower-bank level. Unlike studies based on aggregate data that document a weak bank lending channel, the loan-level analysis, which controls for borrower and bank heterogeneity, suggests that monetary tightening is associated with a significant reduction in new loan amounts and increase in loan interest rates. The authors also find significant evidence that government domestic borrowing crowds out of bank credit to households. The paper is expected to be presented at a conference on “From Micro to Macro: Leveraging Microdata to Address Macroeconomic Issues” to be held in Bogotá, Colombia, on August 5-6, 2025.

c. There will be another paper on *Nowcasting GDP Growth for Kenya*. The paper provides a transparent and flexible dynamic factor model framework to nowcast GDP growth in Kenya. As in many Low Income and Developing Countries, Kenya’s GDP data is typically published with significant delays, thereby making it difficult to assess economic conditions in real time and impeding timely policy responses. By exploiting the timeliness of high frequency economic indicators monitored by monetary authorities, markets, and media, this paper showcases early estimates of Kenya’s economic activity. This analysis serves as an important case study and offers a blueprint for other low-income countries looking to develop their own nowcasting frameworks.

d. There will be a paper on *Climate change and domestic debt costs*. The frequency of extreme weather events increased over the last decades. These disasters have significant macroeconomic consequences, including the deterioration of public finances and debt interest rates. Only few recent studies examine the impact of climate shocks on international debt cost, and none on domestic borrowing cost. Yet, foreign borrowing may often be constrained in the aftermath of a natural disaster, forcing countries to rely heavily on domestic borrowing. Moreover, domestic debt is increasing in the total public debt of many developing countries, and not taking it into account may lead to the avoidance of an important part of debt. In addition, unlike external debt, the domestic one is difficult to restructure. This paper extends the literature and investigates the effect of climate shocks on the cost of domestic debt.

e. A related paper will look at *Who shoulder the burden of rising debt: channels and policy implications*. In this paper, the authors will look at past episodes during which public debt rose substantially during crises and were subsequently reduced, with the aim to better understand debt dynamics and its distributional implications. The analysis will first identify past episodes based on defined criteria. The debt increases and reductions will be decomposed into several factors including growth, real interest rate, exchange rate, fiscal adjustment and other, using similar methodologies as in the DSA. The distributional implications from each of the components will then be assessed. Particularly, the fiscal adjustment could be examined in great details, at the levels of specific spending and tax items. The distributional impacts of the spending and tax items could be drawn from the incidence analyses from EURO-MOD (for advanced economies) and from CEQ and the World Bank (for developing and emerging economies). Lastly, the paper will discuss how countries could tackle the high debt levels after COVID-19 while addressing inequality and supporting growth. There could be an important role for taxation.

f. There will be country work to examine distributional impacts of various structural and fiscal policy reforms.

g. There will also be a project on fiscal multipliers. This project develops a toolkit to extract and classify discretionary fiscal actions from narrative sources such as Economist Intelligence Unit (EIU) reports, using natural language processing and large language models. The resulting database will provide quarterly time series of fiscal policy measures—disaggregated by instrument (e.g., taxes vs. spending) and classified by intent and exogeneity—across a broad set of countries. The objective is to enable the estimation of fiscal multipliers, including instrument-specific and state-contingent effects (e.g., in recessions vs. expansions). Understanding such multipliers is critical for designing effective fiscal policy, yet empirical evidence remains scarce, especially for low-income countries. The database will initially cover at least 60 countries with a balanced representation of advanced, emerging, and low-income economies, and could eventually be extended to over 100 countries. The project's outputs will support both applied policy research and operational work, including a toolkit designed for use by country authorities and IMF staff.

h. There will be another project on *Fiscal Guardrails against High Debt and Looming Spending Pressures*. Elevated public debt and spending pressures pose risks and tradeoffs for governments. While fiscal rules can help rebuild buffers, compliance has been uneven. Large deviations and a lack of supportive fiscal institutions undermine credibility and reduce resilience of fiscal rules against shocks. The analysis shows that a risk-based framework with robust correction mechanisms can mitigate sovereign spreads and improve compliance. Supportive fiscal institutions—such as linking fiscal rules to medium-term frameworks and ensuring independent fiscal council oversight—help incentivize compliance. Given rising spending needs, governments must balance accommodation with debt sustainability. The analysis suggests that excluding expenditures from fiscal rules is not advisable. Low-debt countries could relax tight rules within debt-stabilizing limits to meet additional investment, while high-debt countries with limited fiscal space should adjust to contain the buildup of debt. The SDN includes fiscal rule data for over 120 economies, including multiple LICs.

i. Finally, there will a project on *Applying the Integrated Policy Framework (IPF) to Low Income Countries (LICs): Shocks, Frictions, and Policy Considerations*. This note produced by an interdepartmental team and provides overarching considerations in applying the IPF to LICs. The IPF assists IMF staff in providing advice on the joint use of foreign exchange intervention, macroprudential measures, and capital flow management measures, alongside standard monetary and fiscal policies. The framework emphasizes that the policy mix depends on the interaction of shocks with the following country characteristics: shallow foreign exchange markets, currency mismatches in borrowing, and weakly-anchored inflation expectations. The framework has already been applied in the Article IV consultations of a range of countries. This new note highlights how the policy advice for LICs should take into account additional factors that are especially relevant in the LIC context, including the exchange rate regime, coherence of policy frameworks, limits to FX reserves, institutional capacity constraints, and the medium-term development agenda. The note aims to provide guidance for the use of the IPF in the Article IV consultations of LICs, thereby improving the quality of the IMF's policy advice for these countries and enhancing the discussions between IMF staff and country authorities.

(2) Understanding macro-financial linkages

a. There will be a paper on *Capital Allocation and Firm Dynamics in Small Open Economies*. The paper examines the consequences of large capital inflows for aggregate output, productivity, and the allocation of resources across firms. Using balance of payments data, the paper identifies capital inflow booms in 85 countries between 1975 and 2019, finding that these episodes are associated with persistent increases in private credit and transient output booms, yet coincide with sustained declines in total factor productivity (TFP). Firm-level data for 30 countries reveal that while individual firms experience robust, short-lived booms following these episodes, there is a significant reallocation of capital and debt toward high marginal revenue product of capital (MRPK) firms. The paper interprets these findings with a small open economy firm dynamics model featuring heterogeneity and financial frictions, demonstrating that general equilibrium adjustments—through shifts in firm entry and exit—are crucial to replicating the observed aggregate TFP response.

b. There will be work on understanding the impact of remittances on Rwanda's economy. This joint analysis with the National Bank of Rwanda (henceforth NBR) would explore novel transaction-level remittances data. A primary interest would be to analyze remittances patterns and their effects on Rwanda's economy, and on investments in particular.

c. There will be another paper on *Global Financial Flows Revisited: Trends and Dynamic Interaction*. The authors introduce FIMIDa, a new database covering 181 countries to analyze the evolving composition of global financial inflows, highlighting remittances' growing role as private and official flows decline post-2011–12. Their findings reveal increasing segmentation in global finance, necessitating tailored policies to manage external inflow dynamics across income groups.

d. Another related paper will be on *Global Financial Inflows: Introducing Financial Inflows, Macroeconomic, and Institutional Database (FIMIDa)*. The authors present FIMIDa, a harmonized panel of financial-inflow, macroeconomic, and institutional variables for 181 countries (1960-2023), enabling consistent cross-source comparisons and crisis-period analysis. Researchers and policymakers can leverage it to disentangle different impacts of various types of financial inflows, trace crisis-driven flow dynamics, link governance quality to capital composition, and power interactive dashboards for evidence-based analysis.

e. A separate paper will be on *Counting Aid: How Measurement Choices Shape Evidence on Official Finance to Developing Countries*. This paper juxtaposes two dominant aid concepts: OECD-defined Official Development Assistance (ODA), built on face-value commitments and grant equivalents, and balance-of-payments (BoP) proxies that register the cash-flow component of official inflows. The authors analyze the properties and macroeconomic impacts of these two versions of aid and document that measurement choice alters empirical and policy conclusions.

f. There will be a paper on *Bilateral Financial Flows to LICs: A Multi-Country Analysis of Frictions and Margins*. We build a triple-indexed (source–destination–time) panel and structural gravity model to quantify how distance, information asymmetries, taxes, and institutional quality jointly shape both the extensive and intensive margins of FDI, portfolio, official flows, and remittances toward low-income countries. Since zero-investment frictions dominate in LICs, we focus on counterfactual reductions in information and institutional barriers among low-income countries, offering policy targets for deeper financial integration.

g. There will also be a paper on *Remittance Costs Around Natural Disasters*. This paper investigates how natural disasters impact the pricing of remittance services by remittance service providers (RSPs). While remittances are typically countercyclical—rising when home countries experience shocks—basic supply and demand would suggest an increase in remittance costs. However, some RSPs appear to exercise corporate social responsibility by reducing or waiving fees during natural disasters. The paper explores whether remittance costs rise, fall, or remain stable following disasters, and whether effects vary by disaster type, provider characteristics, transaction speed, market competition, media coverage, and country income levels. The empirical model of the paper will follow the literature explaining the determinants of remittance costs and will then augment it with natural disaster data.

h. There will be another project on *Drivers of Exchange Rates in EMDEs – Implications for Foreign Exchange Intervention*. Amidst the uncertain global outlook, EMDE central banks face the challenge of when to intervene in foreign exchange (FX) markets to stabilize their currencies. The project outlines three use cases for intervention, focusing on one: FX intervention is warranted when exchange rate movements are amplified by frictions in currency markets, even when domestic policies settings and fundamentals are sound. At the extreme, illiquid—or "shallow"—currency markets can spillover into other segments and economic activity. Distinguishing between premia changes driven by frictions or fundamentals is difficult but imperative to determine the need for intervention. This project studies the drivers of exchange rate movements drawing on country experiences, including a LIC case. It proposes Uncovered Interest Rate Parity (UIP) premia as key diagnostic tool to assess whether exchange rate movements stem from financial distortions or fundamentals. It explores how UIP premia behave across countries and over time, and lessons from past UIP spikes. Despite their conceptual appeal, UIP premia are challenging to measure in the data, especially in real time, as they rely on expectations of future exchange rates. The project notes these limitations and discusses more accessible alternatives such as Covered Interest Rate Parity (CIP).

(3) Building resilience

a. There will be a paper on a macroeconomic framework of climate adaptation. The authors build a small open economy model to analyze climate adaptation needs in developing economies. They model slow moving climate risks, such as the slow-moving depletion of natural resources and include includes various frictions (financial frictions, labor market frictions, etc.) that are relevant for emerging markets and low-income countries. Their model features endogenous entry and adaptation choice in the land-intensive agricultural sector, while firms are neoclassical in the manufacturing and services sectors. They model explicitly the private sector's endogenous climate adaptation decisions, such as adopting green technology, and study how government policies can help achieve the first-best level of private adaptation.

b. There will be another paper on *The Macroeconomic Effects of Climate Change and Policies in Developing Countries: The Case of Niger*. This will be an application of a macroeconomic framework of climate adaptation to the case of Niger, dealing with how to incorporate into macro-framework.

c. Another paper will look at energy resilience and debt sustainability in developing countries. The authors incorporate energy production into the DIGNAD model, the IMF workhorse model to analyze the debt-investment-growth nexus and natural disasters in developing countries. Firms in the energy sector endogenously choose between using brown and green technology, based on the price of each type of energy, their own productivity, and the fixed cost of adopting green technology. The model can be used to analyze the debt sustainability requirements under several energy scenarios. The authors study the tradeoffs between investment in energy security and investing in resilience, for a representative developing country.

d. There will be a series of DIGNAD applications: Gambia, Kiribati, Marshall Islands, Micronesia, Liberia, Palau, Sao Tome and Principe, and Vietnam.

- **Gambia** (Article IV Annex): *Fiscal Reform for Climate Resilience*. The annex highlights that pre-emptive investments in resilient infrastructure, as indicated by the IMF-DIGNAD model, can positively affect post-disaster output growth and public debt in The Gambia. It also emphasizes the importance of enhancing public investment and tax collection efficiencies to sustain the country's macroeconomic stability.

- **Kiribati** (Selected Issues Paper): *Building Resilience to Natural Disasters*. Kiribati is particularly susceptible to the impacts of natural disasters, including rising sea levels and extreme weather events, which threaten its fragile ecosystems and livelihoods. Strengthening resilience against these challenges is critical for protecting its communities, ensuring food security, and promoting sustainable development in the face of climate change.

- **Marshall Islands** (Article IV Annex): The Marshall Islands face significant climate vulnerability due to rising sea levels, which threaten approximately half of buildings in the capital, Majuro, and put most of the city at risk of frequent flooding. Additionally, the country's low-lying geography and high population density exacerbate its susceptibility to climate-related hazards, making it essential to implement effective resilience-building measures.

- **Micronesia** (Article IV Annex): Enhancing public investment management can boost efficiency and support economic growth, particularly as Federal States of Micronesia (FSM) increases public investment through foreign grants. Investing in climate-resilient infrastructure is crucial for minimizing GDP loss and facilitating quicker recovery from natural disasters. In this upcoming analysis, several issues pertinent to FSM are calibrated using the DIGNAD model with illustration of simulation-based policy effectiveness to study natural disasters along with potential additions of topics like labor migration and remittances and structural reforms.

- **Liberia** (Selected Issues Paper): *Building resilience to natural disasters*. Liberia is highly vulnerable to natural disasters such as floods and storms, which can exacerbate existing challenges in infrastructure and public health. Building resilience against these events is essential to safeguard communities, promote sustainable development, and enhance the country's capacity to recover from future shocks.

- **Palau** (Working Paper): *Evaluating Saving-Investment and Resilience Building Strategies for Palau*. The paper analyzes the impact of climate-resilient infrastructure investments using the IMF DIGNAD model, finding that prioritizing climate adaptation investments is more beneficial for growth and fiscal sustainability than other strategies. Additionally, it warns that easing the fiscal stance in favor of household transfers and tax cuts could lead to significant long-term output losses and increased debt, making early adaptation investments a more prudent choice.

- **Sao Tome and Principe** (STP): is highly exposed to natural hazards, its infrastructure and public service provision are fragile, and fiscal space is highly constrained in undertaking needed climate-resilient investment. To illustrate the macro-fiscal implications of climate change adaptation and reforms for São Tomé and Principe, DIGNAD model is calibrated to simulate a one-time flooding on the islands and several key policy options are simulated to illustrate how investing in climate-resilient investment and strengthening public investment efficiency could increase STP's resilience to natural disasters.

- **Vietnam** (Selected Issues Paper): *Structural and Market Reforms for Enhancing Growth*. Scaling up public infrastructure investments and accompanying this by structural and market reforms in Vietnam are crucial for enhancing economic growth by increasing efficiency, competitiveness, and innovation within various sectors. Implementing these reforms will not only attract foreign investment but also create a more resilient economy capable of adapting to global changes and challenges.

e. There will also be a course on DIGNAD: *Introduction to Debt-Investment-Growth and Natural Disasters (DIGNAD) Model and Toolkit*. DIGNAD is a Dynamic General Equilibrium model used to capture the challenges of closing infrastructure gaps in low-income developing countries that frequently face natural disasters. The toolkit, built on the DIGNAD model, allows a user to run the model through a user-friendly Excel-based interface, is widely used by economists and policymakers looking to develop tailored analysis of the macro-fiscal impacts of natural disasters and investments in resilience.

f. There will be a paper on *How Does Climate Uncertainty Impact the Macroeconomy?* This project aims to develop a Global Vector Autoregressive (GVAR) model incorporating climate uncertainty through stochastic volatility. By incorporating temperature risk into the GVAR framework, the project will analyze the impact of temperature volatility on economic growth, inflation, exchange rates, and other macroeconomic variables. The project explores heterogeneity between low-income and other countries, helps better understand the channels through which temperature volatility affects different economies, identifies key factors driving these effects, and sheds light on different adaptive strategies.

g. There will also be a paper on *Private sector investment response to low frequency large natural disasters*. The aim of this project is to explore how the private sector reacts to large natural disasters in terms of investment. Using both country and enterprise level data, the authors will analyze the effect of climate shocks on private investment and the role played by public investment.

h. Another paper will look at *On the Frequency and Saliency of Natural Disasters and Consequences on Foreign Aid*. This paper aims to test for the existence of a trend increase in natural disasters at different levels of economic development, while also documenting the saliency of natural disasters in the media. The study will further assess the relative contribution of the increase in frequency and saliency of natural disasters in driving the allocation of foreign aid.

i. A related paper will be on *Natural Disasters and Cost of External Borrowing*. This paper explores the impact of natural disasters on the cost of external borrowing, focusing on the mediating role of governance and the influence of initial conditions, fiscal frameworks, and financial arrangements. The findings will provide policy recommendations for developing countries aiming to maintain access to capital markets amid increasing natural disasters, while enhancing resilience and governance structures to mitigate adverse effects on borrowing costs. By examining the interplay between natural disasters, governance, and borrowing costs, this research will contribute to a deeper understanding of how countries can navigate financial challenges in an era of heightened climate risk.

(4) Promoting structural change and institutional development

a. There will be a paper on *Trade (Dis-)Integration and the Trade Balance*. The team develops a neoclassical model suitable for studying the impact of trade barriers on the trade balance, both in the long and short run. They show that at prevailing levels of trade integration, very large increases in trade barriers would be required to dent trade imbalances.

b. There will be a paper that will accompany the launch of a new dataset—*BiTS: A New Database on Bilateral Trade in Services*. This project assembles a new dataset of bilateral services trade flows at different levels of BPM6-compatible aggregation, covering the period 1985-2023 and up to 245 countries and geographic entities. The dataset can be used to analyze: i) the drivers of services trade across different service-sector categories; ii) the relationship between services-trade integration and economic growth; iii) the role of dominant currencies in services trade; and iv) the impact of geoeconomic fragmentation on services trade.

c. There will be a chapter on *Geoeconomic Fragmentation in Services? Evidence from a New Database* in VoxEU e-book *The State of Globalization*. The chapter uses the new *Bilateral Trade in Services database (BiTS)* to investigate whether the influence of foreign policy alignment on services trade patterns has intensified in recent years. The chapter shows that, in contrast with goods trade, this has not been the case – but that the service-sector categories most sensitive to geopolitical alignments are fast-growing modern services, suggesting geopolitics could come to play a larger role going forward.

d. There will be a paper on growth strategies and diversification for Pacific Island Countries (PIC). The authors examine growth strategies for the PICs by focusing on the effects of tourism and diversification. First, they quantify the contribution of tourism to growth using panel regressions and they compute how much additional tourism would be needed by PICs to sustain the growth rate of comparators. They then identify diversification spurts in the PICs and quantify its benefits using the synthetic control method. Finally, they outline a framework for designing growth strategies in the PICs, focusing on how to detect PICs' binding constraints and work around its limitations.

e. There will also be a paper on *Industrial Policies in a Quantitative Model with Knowledge Creation and Diffusion*. The paper studies optimal trade and industrial policy in a dynamic environment with knowledge diffusion; also consider fiscal implications and optimal debt.

f. There will be a working paper on *Eastern Caribbean migrations in the XXIth Century*. This work will provide an empirical overview of patterns of flows of migrants and remittances before and after the pandemic.

g. There will also be work on *Migration, Knowledge Diffusion, and Development in Small Open Economies*. Migration can deplete economies from scarce skilled labor. At the same time, it also provides benefits -- learning opportunities abroad, remittances, and knowledge diffusion -- which can be sizeable for small open economies. To understand how these multiple channels interact, the authors build a semi-endogenous growth model where diasporas can bring both financial and "social" remittances, in the form of knowledge transfers, and can help narrow the gap with the knowledge frontier. The authors solve analytically the model's equilibrium and balance growth path and determine under which conditions the dynamic benefits of migration outweigh the brain drain effect and support development.

h. Another paper will look at *Does climate change lead to structural transformation? Empirical evidence from developing countries*. The occurrence of climate shocks and natural disasters affects different economic sectors and may have larger impact on agricultural one, leading to reallocation of labor force to industry and services. This change in sectoral employment structure is similar to traditional structural transformation, except that it is caused by productivity loss in agriculture and not improvement in other sectors. The project explores this atypical structural change caused by climate shocks using relevant measures of structural transformation and sectoral disaggregated dataset.

i. A paper will look at *The Economic Impacts of Firms' and Households' Access to Data*. This study focuses on data centers' physical locations where content owners store their data. In Africa, access to data was predominantly reliant on overseas data centers due to the limited number and capacity of local centers. However, as internet connectivity and economic activity on the continent have grown, more data centers have been constructed. The research aims to assess the economic impact of these centers, analyzing how firms and households benefit from data access. The study will utilize information about the network connecting users to data centers and incorporate data on the location and launch dates of African data centers, as well as geo-coded data on economic activity by firms and households.

j. There will be a paper on *Forging Strength: Exploring the Dynamic Interplay between Institutions and State Capacity*. This paper examines the distinct and interactive effects of state capacity and institutional quality on economic growth across 110 countries for the period 1970–2015, highlighting their individual and complementary roles. Policy insights emphasize tailored strategies: low-income countries should prioritize simultaneous state capacity and institutional quality reforms to address foundational governance gaps, while advanced economies should focus on fine-tuning governance to minimize overregulation. These findings provide actionable guidance for designing effective, context-sensitive reforms to foster sustainable economic growth globally.

k. There will also be a paper on *Growth Interrupted: How Crisis Delay Global Convergence*. This paper introduces a Markov chain framework to study how crises affect income convergence dynamics. Findings show that conflict and debt crises may help to explain the persistence of low relative income, and that the convergence process has changed over time. The recent evidence of faster global convergence can be attributed partly to fewer and shorter crises and so may prove short-lived.

l. Another paper will look at the *Impact of Artificial Intelligence on Low-Income Countries: Bridging the Developmental Divide with Advanced Economies*. This paper explores how artificial intelligence may widen or narrow inequality and the development gap between low-income countries and advanced economies, focusing on access, labor markets, productivity, among other macroeconomic dimensions. It aims to link relative development to AI and show where AI can be harnessed for sustainable development and inclusive growth.

(5) Enhancing inclusion

a. There will be a paper on *The Allocation of Talent and Income Differences Across Countries*. The authors derive a theoretically grounded, outcomes-based measure of discriminatory labor market barriers facing women and ethnic minorities. They demonstrate that the removal of these barriers would lead to significant income and productivity gains in major emerging and developing economies.

b. Another paper will revisit the relationship between GDP growth and inequality. Motivated by the diverse patterns of correlation between growth and inequality among low-income economies, emerging economies and advanced economies over the past two decades – growth had no relation with inequality for low-incomes economies, was associated with decrease in inequality in emerging economies and an increase in inequality in advanced economies – the authors examine the joint evolution of inequality, structural change and their underlying drivers through the lens of a heterogeneous agent model of structural transformation based on Comin, Lashkari and Mestieri (2021).

c. There will also be work on *Demography, Female Labor Force Participation and Growth in Latin America*. An expanding labor force has fueled Latin America's economic growth for decades, however, demographic shifts, including population aging, threaten to diminish this contribution. This paper explores how increasing female labor force participation can effectively mitigate these challenges. Using microdata from several Latin American household surveys, the authors document key patterns in labor market participation and then build a model to quantify how dependency ratios and children shape households' labor supply decisions.

d. There will be a paper on *The Economic Dimensions of Digitalization*. Recognizing digitalization as both an economic and technological phenomenon, this paper aims to provide insights into its link with productive dynamics and its broader economic consequences through a literature review. Key connections include its role in generating economies of scale, productivity gains, market efficiencies, and market expansion – particularly in trade, investment, cross-border flows, and digital finance. The paper will also highlight gaps in theoretical literature for modelling its macroeconomic implications.

e. There will also be work to support country teams in modeling and recalibration of tools (DIG-Labor and MIMMI App) to address specific policy questions.

9. RISK

Budgetary uncertainties, including cuts, disbursement delays, and overall funding unpredictability, pose a very high risk to the program, affecting its ability to deliver key outputs, attract and retain competitive staff, and engage in effective short to medium-term planning. These financial instabilities undermine the program's operational integrity, hindering its capacity to meet objectives and maintain a high level of performance. Another risk relates to potential changes in strategic priorities of the IMF in the aftermath of elections in major economies, which may not be as well aligned with the strategic direction of the program.

10. MONITORING AND EVALUATION

Monitoring

IMF reports to FCDO annually regarding the outputs included in the log-frame. In addition to this formal reporting requirement, we provide quarterly updates to our website so that FCDO and the public in general have up-to-date information on our research and progress. The team sends out quarterly e-newsletters that reach an audience of more than 1500 academics, policymakers, central bank staff, and government representatives, among others. These e-newsletters are posted on the project website. We also upload all publicly available working and published papers to the R4D portal on the FCDO website so that FCDO staff members can easily search and retrieve our outputs. To further ensure public access to all outputs produced through the grant, we provide "gold access" to journal publications. When deemed necessary by the IMF and FCDO project members, we conduct video conference calls to discuss the project.

Evaluation

FCDO conducts a yearly evaluation of the program. In addition, there is an ongoing external evaluation of the program by Shanta Devarajan (Georgetown University) and Stephen A. O'Connell (Swarthmore College), which is expected to be completed before the end of 2025.

11. FURTHER INFORMATION

Our team has started brainstorming on a Phase V proposal to improve the analytical and policy tools to bolster the economic resilience of LICs amid increasingly frequent and large shocks. The proposal will be informed by several pathfinding papers across 5 broad themes commissioned to leading academic researchers in the respective fields. The pathfinding papers will be presented at an IMF-FCDO conference in November 2025.

APPENDIX 1. LOG-FRAME

PROJECT NAME	**Macroeconomic Research in Low-Income Countries (LICs)**								
IMPACT	**Impact Indicator 1**		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	**Milestone 4**	**Target (March 2025)**	
Better macroeconomic policymaking in LICs leading to faster economic growth, job creation and poverty reduction.	Proportion of people living in extreme poverty in LICs	**Planned**	(2018) MRLIC countries: 28.5%						
		Achieved							
		Source							
		World Bank, Poverty and Equality dataset, Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population), Simple average of MRLIC countries (Table 1 of Annual Report).							
	Impact Indicator 2		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	**Milestone 4**	**Target (March 2025)**	
	Economic growth rates in LICs	**Planned**	(2019) MRLIC countries: 4.0%						
		Achieved							
		Source							
		IMF WEO data, Real GDP growth, Annual percent change, Simple average of MRLIC countries (Table 1 of Annual Report).							

OUTCOME	Outcome Indicator 1		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)	Assumptions
Better engagement by IMF policy-makers on LIC-specific macroeconomic issues, leading to improved policy-making in specific project thematic areas.	Evidence of Improved IMF policymaking and **integration of LIC-specifics in project thematic areas**.	**Planned**	March 2020 (12)	By March 2021: H (16) M (14) L (12)	By March 2022: H (18) M (16) L (14)	By March 2023: H (20) M (19) L (18)	By March 2024: H (21) M (20) L (19)	By March 2025: H (22) M (21) L (20)	Specific context: the average per year (Yr 1 - 8) is 2. So medium case is one per year for Yr 11-13. High case one additional, low case one fewer.
		Achieved		16	18	20	21	22	
		Source							
		IMF Reporting - board papers, policy papers, conference reports/papers, pilot applications of country teams, refs in staff docs, or internal policy memos.							

INPUTS (£)	FCDO (£)	Govt (£)	Other (£)	Total (£)		FCDO SHARE (%)	Memorandum
	£5.1 million		**£1.0 million**	**£6.1 million**		**84**	"Other" is USD 1.2 million for FY2022 from the IMF's COVID-19 Crisis Capacity Development Initiative (CCCDI), which is an external funding vehicle (with U.K. £1 = USD 1.219950, as of May 13, 2022). "Other" does not include the cost-sharing from the IMF's internal budget. The outputs of the CCCDI-funded project are counted towards the output targets for the MRLIC, only when the outputs are assessed to be within the aims and scope of the MRLIC. For Yr 11 - 13, the annual disbursement is rephased and the output target levels are adjusted accordingly.

OUTPUT 1	Output Indicator 1.1		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)	Assumptions
High quality, policy relevant research on macroeconomic issues affecting LICs produced.	Number of **priority research papers** produced, on the **five research themes of the MRLIC** (see Assumptions)	**Planned**	March 2020 (130)	By March 2021: H (151 papers) M (146 papers) L (141 papers)	By March 2022: H (167 papers) M (160 papers) L (155 papers)	By March 2023: H (176 papers) M (172 papers) L (168 papers)	By March 2024: H (196 papers) M (192 papers) L (188 papers)	By March 2025: H (200 papers) M (196 papers) L (190 papers)	**Specific context**: the average output per year (Yr 1 – 8) is 16. So medium case is 8 per year for Yr 11-13. High case 3 additional, low case 3 fewer. **High-level context**: 1) No major global challenge was initially assumed, such that IMF staff can devote time to the project as committed, but two global shocks (COVID-19 pandemic, war in Ukraine) required adjustments. 2) IMF are able to identify high-quality academics working on specific research topics, and agreeable to IMF terms and conditions. 3) Academic researchers are able to deliver contracted inputs consistent with timeframes envisaged for the project. 4) Counterpart inputs 41aterialize as anticipated. **Five research themes of the MRLIC**: (1) Modelling and understanding policy choices (2) Understanding macro-financial linkages (3) Building resilience (4) Promoting structural change and institutional development (5) Enhancing inclusion
		Achieved		151	162	178	191	209	
		Source							
		IMF publications							

	Output Indicator 1.2		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)	Assumptions
	Number of **research papers accepted for publication** in appropriate high-quality peer-reviewed journals	**Planned**	March 2020 (77)	By March 2021: H (90 papers) M (86 papers) L (82 papers)	By March 2022: H (99 papers) M (95 papers) L (91 papers)	By March 2023: H (105 papers) M (103 papers) L (101 papers)	By March 2024: H (112 papers) M (110 papers) L (108 papers)	By March 2023: H (117 papers) M (115 papers) L (113 papers)	Specific context: the average output per year (Yr 1 – 8) is 9. So medium case is 5 per year for Yr 11-13. High case 2 additional, low case 2 fewer.
		Achieved		90	98	105	113	118	
IMPACT WEIGHTING (%)		**Source**							
34		IMF to provide details of academic publications and acceptances							

OUTPUT 2	**Output Indicator 2.1**		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	**Milestone 4**	**Target (March 2025)**	**Assumptions**
IMF research products (pollicy analysis, practical and operational tools and frameworks) produced under this project used by IMF country teams and partner authorities.	Application and use of tools and frameworks by country authorities and country teams.	**Planned**	March 2020 (161)	By March 2021: H (181) M (174) L (167)	By March 2022: H (199) M (194) L (189)	By March 2023: H (214) M (211) L (208)	By March 2024: H (225) M (222) L (219)	By March 2025: H (233) M (230) L (227)	Specific context: the average output per year (Yr 1 - 8) is 21, including cources that are now separated to new output indicator 2.2. Medium case is 8 per year for Yr 11-13. High case is 3 additional, low case is 3 fewer.
		Achieved		183	203	213	223	236	
		Source							
		IMF reporting on evidence of number of country teams applying policy tools and frameworks							
	Output Indicator 2.2		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	**Milestone 4**	**Target (March 2025)**	**Assumptions**
	Courses offered to country authorities and IMF staff	**Planned**	March 2020 (20)	By March 2021: H (28) M (25) L (22)	By March 2022: H (35) M (32) L (30)	By March 2023: H (44) M (42) L (40)	By March 2024: H (49) M (47) L (45)	By March 2025: H (53) M (51) L (49)	Specific context: Newly separated from output indicator 2.1. Medium case is 4 per year for Yr 11-13. High case 2 additional, low case 2 fewer.
		Achieved		28	38	43	52	59	
IMPACT WEIGHTING (%)		**Source**							
33		IMF reporting evidence of number of country authorities applying policy tools and frameworks							

OUTPUT 3	**Output Indicator 3.1**		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	**Milestone 4**	**Target (March 2025)**	**Assumptions**
Engagement by senior IMF policymakers on issues affecting LICs strengthened through this project.	High level policy conferences attended by senior IMF staff reflect findings of research papers funded under this project.	**Planned**	March 2020 (40)	By March 2021 H (45) M (43) L (41)	By March 2022: H (48) M (46) L (44)	By March 2023: H (54) M (53) L (52)	By March 2024: H (57) M (56) L (55)	By March 2025: H (60) M (59) L (58)	Specific context: the average output per year (Yr 1 - 8) is 5. Medium case is 2 per year for Yr 11-13. High case is 1 additional, low case is 1 fewer.
		Achieved		42	50	53	56	60	
		Source							
		IMF reporting on number of policy conferences drawing on outputs from the project							
	Output Indicator 3.2		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	**Milestone 4**	**Target (March 2025)**	**Assumptions**
	Results of the research reflected in IMF Board discussions and papers such as IMF Policy Papers, Staff Discussion Notes, policy memos to management etc.	**Planned**	March 2020 (41)	By March 2021: H (48) M (45) L (42)	By March 2022: H (53) M (52) L (50)	By March 2023: H (59) M (57) L (55)	By March 2024: H (64) M (62) L (60)	By March 2025: H (67) M (65) L (63)	Specific context: the average output per year (Yr 1 - 8) is 5. Medium case is 3 per year for Yr 11-13. High case is 2 additional, low case is 2 fewer.
		Achieved		49	54	59	62	66	
IMPACT WEIGHTING (%)		**Source**							
33		IMF reporting on number of IMF Board discussions and IMF Policy Papers drawing on outputs from the project							

APPENDIX 2. FINANCIAL REPORTS

International Monetary Fund
United Kingdom - Project on Macroeconomic Research in LICs
Bilateral - Cash Flow Statement
As of April 30, 2025
(In U.S. Dollars)

	Cumulative FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Contributions[1/]	23,681,362	2,270,441	-	2,116,823	2,333,672	30,402,298
Interest Earned	163,154	1,438	54,253	107,273	127,831	453,949
Total Cash Available	**23,844,516**	**2,271,879**	**54,253**	**2,224,096**	**2,461,503**	**30,856,247**
Expenses Paid[2/]	22,572,036	1,093,151	1,253,384	1,322,198	1,220,489	27,461,258
Cash Balance	**1,272,480**	**2,451,208**	**1,252,077**	**2,153,975**	**3,394,989**	**3,394,989**

1/Contributions are net of transfers and return of funds.

2/Expenses paid include the 7% TFM.

International Monetary Fund
United Kingdom - Project on Macroeconomic Research in LICs
Bilateral - Detailed Progress Report
As of April 30, 2025
(In U.S. Dollars)

Region/Country	Project ID	Project Description	Status	Start Date	End Date	Latest Approved/ Proposed Budget	Expenses	Remaining Balance 1/	Execution (%)
International Monetary Fund	IMF_IMF_2012_01	DFID Macro Research 1&2	Closed	5/1/2012	3/31/2017	12,451,409	12,451,410	-	100%
		HQ led missions including entire mission team				6,411,796	6,411,796	-	-
		Short-term Advisors - CD delivery				477,102	477,102	-	-
		Research HQ based / Visiting Scholars				2,235,765	2,235,765	-	-
		Seminars & Study Tours				1,273,384	1,273,384	-	-
		Project Backstopping				1,911,379	1,911,379	-	-
		Project Management				141,984	141,984	-	-
International Monetary Fund	SPR_IMF_2017_04	DFID Macro Research 3	Closed	4/1/2017	3/31/2020	6,991,674	6,991,674	-	100%
		HQ led missions including entire mission team				389,849	389,849	-	-
		Short-term Advisors - CD delivery				48,460	48,460	-	-
		Research HQ based / Visiting Scholars				4,677,110	4,677,110	-	-
		Seminars & Study Tours				400,115	400,115	-	-
		Project Backstopping				1,054,899	1,054,899	-	-
		Project Management				84,611	84,611	-	-
		Exceptional Expenses				335,282	335,282	-	-
		Language Services				1,348	1,348	-	-
International Monetary Fund	SPR_IMF_2020_02	DFID-4 Macro Research	Approved	4/1/2020	4/30/2026	7,131,767	6,221,643	910,124	87%
		HQ led missions including entire mission team				22,202	22,202	-	-
		Research HQ based / Visiting Scholars				1,185,909	1,185,909	-	-
		Project Backstopping				207,321	207,321	-	-
		Project Management				20,668	20,668	-	-
		Exceptional Expenses				215,356	215,356	-	-
		Language Services				822	822	-	-
		CD project management 2/				785,604	340,994	-	-
		Development of CD tools 2/				143,181	96,779	-	-
		Development of general CD technical materials 2/				4,138,151	3,856,499	-	-
		Development of training courses or other learning materials 2/				214,399	87,865	-	-
		Field-Based work 2/				-	-	-	-
		Interactive learning and workshops 2/				198,154	187,228	-	-
Sub Total						**26,574,850**	**25,664,727**	**910,124**	
Trust Fund Management Fee						1,860,240	1,796,531	63,709	
Grand Total						**28,435,090**	**27,461,258**	**973,833**	

Agreement Summary	
Contributions to date	30,402,298
Net Transfers	-
Interest Earned	453,949
Total Inflows(A)	**30,856,247**
Expenses	27,461,258
Remaining Budget (including projects pending approval)	973,833
Total Outflows(B)	**28,435,091**
Future Contributions (based on signed agreements)(C)	-
Total Available & Future Contributions(A-B+C)	**2,421,156**

1/ The remaining balance for closed projects is zeroed out upon project completion.

2/ The expenses shown do not inculde costs related to Long-Term Experts.

APPENDIX 3. RESEARCH OUTPUTS

Output 1.1 – Working Papers

Topic 1. Modelling and understanding policy choices

1. Quarterly Projection Model for the Bank of Ghana: Extensions and Applications
   Philip Abradu-Otoo, Joseph K. Acquah, James Attuquaye, Simon Harvey, Francis Loloh, Shalva Mkhatrishvili, Valeriu Nalban, Daniel Ngoh, Victor Osei, and Michael Quansah

   Summary: The paper documents the latest extensions of the Bank of Ghana's Quarterly Projection Model (QPM), used regularly to produce policy analysis and forecasts in support of the Bank's policy processes. The decomposition of GDP allows to separate the agriculture and oil sectors, driven by exogenous and international developments, from non-agriculture non-oil activities, which are more relevant from the central bank's perspective of assessing the business cycle position. Inter-sectoral price spillovers and their role in the formation of inflation expectations are explicitly accounted, with important policy implications. Specific model applications – including impulse response functions and simulations of shocks that affect agricultural production, e.g., those caused by climate disruptions; and counterfactual simulations to evaluate recent policy choices – highlight the usefulness of the extended QPM in providing a more detailed account of the economic developments, enhance forecast coverage, and broaden its underlying narrative, thus strengthening the BOG's forward-looking policy framework.

2. Transport Frictions and the Pass-Through of Global Price Shocks in a Spatial Model of Low-Income Countries
   Lisa Martin, Christopher S Adam, and Douglas Gollin

   Summary: We develop a spatial dynamic general equilibrium model of a small open agricultural economy to study the impact of global food, fuel and fertilizer price shocks on consumption patterns of heterogeneous households located in different regions, under alternative fiscal responses, including direct price subsidies and household transfers. We show strong spatial heterogeneity in response to shocks, with associated implications for welfare. In particular, while urban households' consumption baskets are more exposed to the direct effects of global food price shocks, remote rural households' production and consumption are more exposed to supply-side dislocations associated with shocks to fuel and fertilizer prices.

Topic 2. Understanding macro-financial linkages

3. [Global Contagion of Financial Reforms]
   Nan Li, Chris Papageorgiou, Tong Xu, and Tao Zha

   Summary: We construct an extensive database of domestic financial reforms spanning 90 countries from 1973 to 2014. Utilizing this dataset, we estimate a structural model that incorporates various factors identified in the existing literature to explain the global contagion of financial reforms. Our findings reveal that (1) geopolitical influence and cross-country learning were the primary drivers behind the marked increase in financial reforms globally during the 1990s, and (2) the observed reversals of financial reforms in developing countries after the global financial crisis were driven by shifts in beliefs about the impact of these reforms on growth.

4. [Bilateral Trade in Services and Exchange Rates: Evidence of Dominant Currency Pricing]
   Nan Li, and Sergii Meleshchuk

   Summary: This paper estimates, for the first time, the exchange rate elasticity of bilateral trade in services, providing indirect evidence of both producer currency pricing and dominant currency pricing in services trade. We developed a novel dataset of bilateral trade flows in services, covering twelve broad service sectors across 245 countries from 1985 to 2022. We find that, similar to manufacturing trade, the value of services trade is more closely associated with US dollar exchange rates than with bilateral exchange rates, although this relationship varies by service category. Zeroing in on tourism, where proxies for trade volume (such as tourist arrivals and hotel stays) are available, we find that bilateral exchange rates play a larger role on tourism volume compared to the dollar exchange rates. In addition, in the context of global supply chain, we find that downstream dollar exchange rate movements, rather than downstream bilateral exchange rates, affect the demand for service imports via forward linkages.

Topic 3. Building resilience

5. [The Macroeconomic and Welfare Benefits of Building Resilience in Disaster-Prone Developing Countries]
   Yehenew Endegnanew, Rafael D Goncalves, Samuel Mann, Marina Mendes Tavares, and Harold Zavarce

   Summary: Natural disasters often have high economic costs, setting back years of investment in developing countries. This paper develops a multi-sector DSGE model to study the macroeconomic and welfare implications of financing resilience-building using different fiscal instruments. The model includes developing countries' macroeconomic and distributional features, such as a large unproductive rural sector, an incomplete credit market, and an informal sector. The results indicate that investing in resilience capital in a disaster-prone country improves welfare despite its high economic cost, but the financial instrument used to mobilize revenue matters.

6. Foreign Aid and (Big) Shocks: Evidence from Natural Disasters
   Rabah Arezki, Youssouf Camara, Patrick A. Imam, and Kangni R Kpodar

   Summary: We explore the effect of (big) shocks on the allocation of (bilateral) aid using natural disasters as natural experiments. We find that aid commitment statistically significantly increases following natural disasters, and that humanitarian aid precedes structural aid. While we find that the average effect is quantitatively significant, poorest countries or countries faced with most damaging natural disasters do not receive the most aid. We find no evidence that foreign aid commitment disburses faster following natural disasters. Further explorations into the mechanisms driving aid in disaster countries point to the importance of political alignment with (major) donors in recipient countries with low state capacity.

7. Foreign Aid and Conflicts: The Effects of 9/11 on Donor Behavior
   Rabah Arezki, Youssouf Camara, Patrick A. Imam, and Kangni R Kpodar

   Summary: We explore the changing relationship between armed conflicts and non-military foreign aid. We find that the sign of the relationship linking (bilateral) aid commitments to the onset of armed conflicts in aid recipient countries is statistically significant and goes from negative to positive after the year 2001. We also find that our results are driven by grants rather than loans and by aid for health and humanitarian purposes. The results are robust to a myriad of checks including substituting armed conflicts with terror attacks, accounting for debt relief initiatives and using different estimators. We interpret our results as stemming from a shift in donors' preferences induced by 9/11 attacks toward supporting conflict affected countries, confirming the primacy of donors' interests over recipient needs.

8. The Urgency of Conflict Prevention – A Macroeconomic Perspective
   Hannes Mueller, Christopher Rauh, Benjamin R Seimon, and Raphael A Espinoza

   Summary: Can macroeconomic policy effectively help prevent armed conflicts? This paper contends that two key criteria need to be satisfied: the long-term benefits of prevention policies must exceed the costs associated with uncertain forecasts, and the policies themselves must be directly able to contribute to conflict prevention. This paper proposes policy simulations, based on a novel method of Mueller et al (2024a) that integrates machine learning and dynamic optimization, to show that investing in prevention can generate huge long-run benefits. Returns to prevention policies in countries that have not suffered recently from violence range from $26 to $75 per $1 spent on prevention, and for countries with recent violence, the rate of return could be as high as $103 per $1 spent on prevention. Furthermore, an analysis of the available data and results in the literature suggest that sound macroeconomic policies and international support for these policies can play key roles in conflict prevention. Based on these findings, this paper proposes actionable recommendations, for both global and domestic policymakers as well as international financial institutions and multilateral organizations, to promote peace and stability through macroeconomic policy.

Topic 4. Promoting structural change and institutional development

9. At the Threshold: The Increasing Relevance of the Middle-Income Trap
   Patrick A. Imam, and Jonathan R. W. Temple

   Summary: We investigate the existence of a middle-income trap using finite state Markov chains, constant growth thresholds, and mean passage times. As well as studying output per head, we examine the dynamics of its proximate determinants: TFP, the capital-output ratio, and human capital. We find upwards mobility for the capital-output ratio and human capital, but not for relative TFP. The lack of upwards mobility in relative TFP, at least from an intermediate level, suggests that escaping the middle-income category can take many years, and such traps may become increasingly apparent in the years to come.

10. Dynamic Development Accounting and Relative Income Traps
    Patrick A. Imam, and Jonathan R. W. Temple

    Summary: Previous research suggests that economy-wide poverty traps are rarely observed in the data. In this paper, we explore a related hypothesis: low-income countries rarely improve their position relative to the US. Using finite state Markov chains, we show that upwards mobility is indeed limited. Since capital-output ratios are similar across countries, and human capital is also converging, the persistence of low relative income seems to originate in the persistence of low relative TFP. We study the dynamics of relative TFP and how they interact with absolute levels of human capital, casting new light on the future of convergence.

11. Productive Capacities, Economic Vulnerability and Growth Volatility in Sub-Saharan Africa
    Aminou Yaya

    Summary: Sub-Saharan Africa (SSA) countries, like most developing countries, face major challenges to achieve strong, sustainable, and inclusive growth with the view to reduce significantly persistent poverty and inequality. Many of these challenges results from a high level of economic vulnerability due to simultaneous shocks, notably the Covid-19 pandemic, climate change and the multiplicity of armed conflicts. Hence the need to study policies and means of strengthening economic resilience to shocks. This paper analyzes the effects of productive capacities on the volatility of economic growth in SSA countries when faced with significant vulnerability. The study covers the period 2000-2018 for 43 SSA countries. Using Generalized Method of Moments (GMM), the results show that economic vulnerability contributes to growth volatility in SSA. However, this effect varies according to the performance of productive capacities. Countries with high productive capacities have greater opportunities to mitigate the effect of economic vulnerability on growth volatility. Some specific dimensions of productive capacities (Institutions, ICT) seem to matter more than others. The results of this study provide important recommendations to policy makers.

12. Economic Diversification in Developing Countries: Lessons from Country Experiences with Broad-Based and Industrial Policies

    Corinne C Delechat, Giovanni Melina, Monique Newiak, Chris Papageorgiou, and Nikola Spatafora

    Summary: This paper examines the significance and impact of broad-based and industrial policies on economic diversification in developing economies, supported by a literature review, case studies, and IMF analyses. Economic diversification entails shifting from traditional sectors, like agriculture and mining, to a variety of high-quality services and sectors. This transition is crucial for adapting to global market fluctuations and promoting sustainable growth and improved living standards. A literature review, including many IMF contributions, reveals a strong correlation between economic diversification and improved macroeconomic performance in developing countries, such as faster economic growth and higher incomes per capita. Factors influencing economic diversification include macroeconomic stability, infrastructure quality, workforce skills, credit access, regulatory environment, and income equality. Six case studies highlight the experiences of Costa Rica, Gabon, Georgia, India, Senegal, and Vietnam, demonstrating that successful diversification strategies require a long-term commitment and effective broad-based policies. Industrial policies can support diversification by addressing market failures, but they must be well-designed and effectively implemented. Common lessons include the necessity of maintaining macroeconomic stability, investing in human capital, and fostering competition. Sector-specific mechanisms like Special Economic Zones should be used cautiously, emphasizing underlying bottlenecks and minimizing fiscal costs. Country-specific insights include Costa Rica's strategic policy shift towards export orientation, Gabon's reduced dependence on oil, Georgia's market-friendly policies, India's skilled labor and software clusters, Senegal's infrastructure and business environment improvements, and Vietnam's transition from an agrarian to an industrial economy. The IMF's engagement in diversification emphasizes improving human capital, infrastructure, reducing trade barriers, and promoting international trade integration. Policymakers, researchers, and international organizations increasingly recognize the importance of economic diversification for resilient, sustainable, and inclusive growth, requiring nuanced policy interventions tailored to each country's context and capabilities.

13. Knowledge Diffusion Through FDI: Worldwide Firm-Level Evidence
    JaeBin Ahn, Chan Kim, Nan Li, and Andrea Manera

    Summary: This paper examines the impact of Foreign Direct Investment (FDI) on knowledge diffusion by analyzing the effect of firm-level FDI activities on cross-border patent citations. We construct a novel firm-level panel dataset that combines worldwide utility patent and citations data with project-level greenfield FDI and crossborder mergers and acquisitions (M&A) data over the past two decades, covering firms across 60 countries. Applying a new local projection difference-indifferences methodology, our analysis reveals that FDI significantly enhances knowledge flows both from and to the investing firms. Citation flows between investing firms and host countries increase by up to around 10.6% to 13% in five years after the initial investment. These effects are stronger when host countries have higher innovation capacities or are technologically more similar to the investing firm. We also uncover knowledge spillovers beyond targeted firms and industries in host countries, which are particularly more pronounced for sectors closely connected in the technology space.

14. Changing Global Linkages: A New Cold War?
    Gita Gopinath, Pierre-Olivier Gourinchas, Andrea F Presbitero, and Petia Topalova

    Summary: Global linkages are changing amidst elevated geopolitical tensions and a surge in policies directed at increasing supply chain resilience and national security. Using granular bilateral data, this paper provides new evidence of trade and investment fragmentation along geopolitical lines since Russia's invasion of Ukraine, and compares it to the historical experience of the early years of the Cold War. Gravity model estimates point to significant declines in trade and FDI flows between countries in geopolitically distant blocs since the onset of the war in Ukraine, relative to flows between countries in the same bloc (roughly 12% and 20%, respectively). While the extent of fragmentation is still relatively small and we do not know how longlasting it will be, the decoupling between the rival geopolitical blocs during the Cold War suggests it could worsen considerably should geopolitical tensions persist and trade restrictive policies intensify. Different from the early years of the Cold War, a set of nonaligned 'connector' countries are rapidly gaining importance and serving as a bridge between blocs. The emergence of connectors has likely brought resilience to global trade and activity, but does not necessarily increase diversification, strengthen supply chains, or lessen strategic dependence.

15. Can Mobile Technologies Enhance Productivity? A Structural Model and Evidence from Benin Food Suppliers
Pierre Nguimkeu, and Cedric I Okou

Summary: This paper analyzes the drivers of digital technologies adoption and how it affects the productivity of small scale businesses in Africa. We use data collected from two semi-rural markets in Benin, where grains and legumes are key staple foods and one-third of the population has internet access. We develop a structural model to rationalize digital technologies adoption—defined as the use of mobile broadband internet connection through smartphones—as well as usage patterns and outcomes observed in the data. The model's implications are empirically tested using both reduced-form and structural maximum likelihood estimations. We find that younger, wealthier, more educated grains and legumes suppliers and those closely surrounded by other users are more likely to adopt digital technologies. Adopters perform 4-5 more business transactions each month than non-adopters on average, suggesting that digital technologies adoption could raise the monthly frequency and amounts of trades by up to 50%. Most adopters are women, but their productivity gains are lower than their male counterparts. Counterfactual policy simulations with the estimated model suggest that upgrading the broadband internet quality yields the largest improvement in adoption rate and productivity gains, while reducing its cost for a given connection quality only has a moderate effect. Improving access to credit only increases the adoption rate of constrained suppliers.

16. Regime-Switching Factor Models and Nowcasting with Big Data
Omer Faruk Akbal

Summary: This paper shows that the Expectation-Maximization (EM) algorithm for regime-switching dynamic factor models provides satisfactory performance relative to other estimation methods and delivers a good trade-off between accuracy and speed, which makes it especially useful for large dimensional data. Unlike traditional numerical maximization approaches, this methodology benefits from closed-form solutions for parameter estimation, enhancing its practicality for real-time applications and historical data exercises with focus on frequent updates. In a nowcasting application to vintage US data, I study the information content and relative performance of regime-switching model after each data releases in a fifteen year period, which was only feasible due to the time efficiency of the proposed estimation methodology. While existing literature has already acknowledged the performance improvement of nowcasting models under regime-switching, this paper shows that the superior nowcasting performance observed particularly when key economic indicators are released. In a backcasting exercise, I show that the model can closely match the recession starting and ending dates of the NBER despite having less information than actual committee meetings, where the fit between actual dates and model estimates becomes more apparent with the additional available information and recession end dates

are fully covered with a lag of three to six months. Given that the EM algorithm proposed in this paper is suitable for various regime-switching configurations, this paper provides economists and policymakers with a valuable tool for conducting comprehensive analyses, ranging from point estimates to information decomposition and persistence of recessions in larger datasets.

17. Shocks and Shields: Macroeconomic Institutions During Commodity Price Swings
    Rabah Arezki, Patrick A. Imam, Kangni R Kpodar, and Dao Le-Van

    Summary: Countries facing commodity (net) export price shocks tend to implement fiscal rules and to financially close their economies, demonstrating "macroeconomic prudence". These effects are (unsurprisingly) asymmetric between import and export price shocks. The impact of commodity (net) export prices on macroeconomic institutions is influenced by the intensity of shocks and income levels of the countries, with higher-income countries driving the main results. These findings remain robust across various checks, including different estimators and additional control and dependent variables. These findings suggest that macroeconomic institutions are reactive to terms of trade shocks stemming from commodity price fluctuations.

18. State Capacity and Growth Regimes
    Patrick A. Imam, and Jonathan R. W. Temple

    Summary: Can high levels of state capacity protect countries from slow growth and deepening output collapses? Using data for 108 developing countries, we classify five-year periods using a two- dimensional state space based on growth regimes and levels of state capacity. We model transitions between them using a finite state Markov chain, and then extend this to take political institutions into account. We find that high state capacity helps to sustain growth and limit output collapses, but these effects are sometimes less striking than the benefits of democracy.

Topic 5. Enhancing inclusion

We have no publication under this topic this year.

Output 1.2 – Published Papers

Topic 1. Modelling and understanding policy choices
We have no publication under this topic this year.

Topic 2. Understanding macro-financial linkages
We have no publication under this topic this year.

1. Policy Contagion: What Do We Learn from Financial Reforms?
   Nan Li, Chris Papageorgiou, Tong Xu, and Tao Zha
   International Economics Review, *forthcoming*
   Summary: We use financial reforms as a case study to understand the temporal clustering of policy changes across countries, shedding light on the broader phenomenon of global policy contagion. To this end, we construct a comprehensive database of domestic financial reforms spanning 90 countries from 1973 to 2014. Using this dataset, we estimate a semi-structural model that incorporates key factors identified in the literature and uncover two main findings: (1) geopolitical influence and cross-country learning drove the global surge in financial reforms during the 1990s, and (2) partial reversals of financial reforms in developing countries after the global financial crisis were shaped by shifts in beliefs about their growth effects

Topic 3. Building resilience
We have no publication under this topic this year.

Topic 4. Promoting structural change and institutional development

2. Political institutions and output collapses
   Patrick A. Imam, and Jonathan R.W. Temple
   European Journal of Political Economy

   Summary: This paper examines whether major output collapses are more likely under autocracy. Using data on 123 developing countries over 1971–2016, we model the joint evolution of output growth and political institutions as a finite state Markov chain with a two-dimensional state space. We study how countries move between states. We find that growth is more likely to be sustained under democracy than under autocracy; output collapses are more likely to deepen under autocracy; and stagnation under autocracy can give way to outright collapse. Democratic countries appear to be more resilient.

3. Changing global linkages: A new Cold War?
   Gita Gopinath, Pierre-Olivier Gourinchas, Andrea F. Presbitero, and Petia Topalova
   Journal of International Economics

Summary: Global linkages are changing amidst elevated geopolitical tensions and a surge in policies directed at increasing supply chain resilience and national security. Using granular bilateral data, we provide new evidence of trade and investment fragmentation along geopolitical lines and compare it to the early years of the Cold War. Gravity model estimates point to significant declines in trade, FDI, and portfolio flows between countries in geopolitically distant blocs since the onset of the war in Ukraine, relative to flows between countries in the same bloc. While the extent of fragmentation is still relatively small, the decoupling between the rival geopolitical blocs during the Cold War suggests it could worsen considerably should geopolitical tensions persist and trade restrictive policies intensify. Different from the early years of the Cold War, a set of nonaligned 'connector' countries are rapidly gaining importance and serving as a bridge between blocs.

4. Changing Global Linkages: Bridging Geopolitical Fragments
   Gita Gopinath, Pierre-Olivier Gourinchas, Andrea F. Presbitero, and Petia Topalova
   AEA Papers and Proceedings

   Summary: Since the rise of trade tensions between the United States and China in 2018, a reallocation of trade and investment flows across countries is taking place, increasingly reflecting geopolitical considerations. A set of "connector" countries have stepped up their exports to the United States, substituting for declining US imports from China. These nonaligned countries have also increased their imports from China and received substantial more Chinese FDI. Yet, while anecdotes of tariff-jumping FDI abound, no empirical study has systematically examined whether these patterns are already discernible in the data since the surge in trade restrictive measures, how broad-based FDI relocation in response to trade restrictive measures has been, and which countries are benefiting the most from FDI relocation. Using bilateral sectoral FDI data and the number of trade restrictions in a global sample of countries, we establish that over the past decade, countries have indeed responded to trade restrictions imposed on their exports by moving production abroad to locations that could be considered nonaligned and whose exports face few import restrictions from their trading partners. Our findings are thus in line with recent anecdotal and empirical evidence of FDI flows fragmenting along geopolitical lines (Aiyar, Malacrino, and Presbitero 2024) but also responding to trade restrictions by relocating to countries that can serve as producers and "connectors."

Topic 5. Enhancing inclusion

5. The Armistice of the Sexes: Gender Complementarities in the Production Function
   Raphael A. Espinoza, Jonathan D. Ostry and Chris Papageorgiou
   Feminist Economics

Summary: Most macroeconomic and growth accounting models assume that male and female workers are perfectly substitutable in the aggregate production function. Whether this assumption is valid is an empirical question that this paper aims to answer by estimating the elasticity of substitution (ES) between female and male labor. We apply linear and non-linear techniques to firm-level data, cross-country sectoral data, and cross-country aggregate data. We find that women and men are far from being perfect substitutes in production, a result that is consistent with much microeconomic evidence, but has not permeated to macroeconomics. The failure to account for imperfect gender substitutability has far-reaching implications. In particular, standard growth accounting exercises are likely to attribute to technological progress gains that are more properly attributable to the impact of greater gender inclusiveness in the labor force over time. Put differently, the gains from gender inclusiveness are likely to be much larger than standard economic models estimate.

Output 2.1 – Country applications with Authorities and IMF Country Teams

FPAS framework

1. Ghana – Technical Assistance mission to develop FPAS processes at the Bank of Ghana

   Summary: From April 22 to May 3, 2024, IMF's Institute for Capacity Development conducted a technical assistance (TA) mission in Ghana under the Forecasting and Policy Analysis Systems (FPAS) TA project. The mission focused on building further analytical capacity and developing FPAS processes at the Bank of Ghana (BoG). The BoG's Quarterly Projection Model (QPM) was refined and extended with a detailed fiscal sector satellite, distinguishing between domestic and foreign debt, and featuring a fiscal authority concerned with debt stabilization and countercyclical support. Additional analytical tools broadened the coverage of model-based assessments. Historical shock decompositions helped identify the driving forces behind recent dynamics in key variables, while counterfactual simulations highlighted the major monetary policy trade-offs between price stability and economic growth during the recent period. Overall, the TA supported FPAS-based analytical work, which plays a key role in supporting the BoG's forward-looking monetary policy formulation.

2. Ghana – Technical Assistance Report-Report on Developing the Forecasting and Policy Analysis System (FPAS) at the Bank of Ghana (BOG)

   Summary: The Technical Assistance (TA) report presents the outcomes of the multi-year Bank of Ghana (BOG) Forecasting and Policy Analysis System (FPAS) macroframeworks TA project, conducted between late 2019 and mid-2024 over a total of seven missions. Four sessions were held virtually and three took place in person. The project aimed to enhance and build new institutional capacity for model-based policy analysis and macroeconomic forecasting, integrating these capabilities into monetary policy processes and external communications. The project has contributed to building strong analytical capabilities among BOG staff to support policymakers. Model-based analysis plays an important role in BOG's internal deliberations and serves as a key input in forward-looking monetary policy formulation, including regular external communications. Remaining recommendations focus on ensuring the sustainability of the FPAS framework and further streamlining external communications.

Diversification

We have no publication under this topic this year.

DIG/Investment scaling up/Debt sustainability

We have no publication under this topic this year.

Natural disasters/DIGNAD

3. Democratic Republic of Congo – Democratic Republic of Congo: Requests for an Arrangement Under the Extended Credit Facility and an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; and Statement by the Executive Director for the Democratic Republic of Congo

   Summary: The impact of ex-ante climate adaptation investments on growth and public debt were analyzed using the Debt-Investment-Growth and Natural Disasters (DIGNAD) model, as featured in The Benefit of Investment in Adaptation: Results from DIGNAD Simulations (Box 2) in the IMF Country Report for the Democratic Republic of Congo. The simulations demonstrate that while greater investment in resilient infrastructure initially results in a similar trajectory for real GDP and public debt during the years of the RSF program, it leads to better outcomes once an exogenous natural disaster occurs. Adaptation capital enhances economic resilience by mitigating the disaster's impact on output, reducing the decline by 0.8 percentage points of steady-state GDP through more contained damage to physical assets. Additionally, these investments contribute to a sustained increase in GDP over the long term by maintaining a higher level of capital.

4. Republic of Congo – Republic of Congo: Selected Issues

   Summary: In face of increasingly severe natural disasters, Congo's economy faces rising costs in terms of potentially forgone economic activity, lost consumption, increasing debt levels due to the need to replace lost capital, and rising inequality, which may add to food insecurity. Early adaptation by investing in climate change resilient infrastructure can mitigate such adverse effects. Suitable investment areas for adaptation investment include food security, sanitation, health, and basic infrastructures, but also sustainable forestry, renewable energy production, and climate-smart agriculture. Continued fiscal consolidation and the need to reduce public debt levels, however, limit the government's capacity to contribute to additional adaptation investments over the medium term, if reform progress in public financial management would not be able to free up substantial resources. Alternatively, adaptation investments could be funded through grants or private funding sources, including entirely privately managed and owned investments.

5. Côte d'Ivoire – Côte d'Ivoire: Request for an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; and Statement by the Executive Director for Côte d'Ivoire

   Summary: To assess the macro-fiscal implications of strengthening resilience to climate change, several Debt, Investment, Growth, and Natural Disaster (DIGNAD) model scenarios were run as part of an IMF Country Report for Côte d'Ivoire. The DIGNAD model is a dynamic general equilibrium model designed to study the effects of public investment on economic growth and debt sustainability in the context of natural disasters. Through its simulations, the model presents macro-fiscal outcomes associated with public adaptation investment, economic growth, and debt, relative to those at steady state. The modeling scenarios highlight that Côte d'Ivoire would benefit from investments in resilient infrastructure and greater revenue mobilization to attenuate the negative effect of natural disasters on debt sustainability.

6. Guinea: 2024 Article IV Consultation and Request for Disbursement Under the Rapid Credit Facility-Press Release; Staff Report; and Statement by the Executive Director for Guinea

   Summary: This annex focuses on adaptation issues in Guinea, while providing a data-driven and largely descriptive analysis of the mitigation issues. In addition to examining Guinea's exposure to natural disasters, the annex simulates their macroeconomic effects, presents the financing gap for achieving resilience to natural disasters, and explores options for closing the financing gap using the IMF's Debt, Investment, Growth, and Natural Disasters (DIGNAD) model.

7. Guinea – Guinea: Selected Issues

   Summary: Natural disasters (especially floods) have become more frequent and severe in Guinea, and its large mining sector might push up carbon emissions significantly over time. This Selected Issues Paper focuses on adaptation issues and provides a data-driven analysis of the mitigation issues. Simulations show that ex ante resilience investment, financed by grants and complemented with public investment efficiency reforms, yields best macroeconomic outcomes after natural disasters. Accelerating the implementation of recent TA recommendations on C-PIMA, as well as improving the collaborations between Ministry of Environment and other project planning/implementation ministries, are crucial for enhancing the country's resilience. The authorities should also reduce emissions from the agriculture sector, slow down or reverse deforestation, and continue their ongoing efforts to mitigate emissions, while ensuring the sustainable expansion of Guinea's renewable energy sector.

8. Madagascar – Republic of Madagascar: Request for an Arrangement Under the Extended Credit Facility and Cancellation of the Current Arrangement Under the Extended Credit Facility and Request for an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; Staff Supplement; Staff Statement; and Statement by the Executive Director for Republic of Madagascar

   Summary: DIGNAD simulations8 show that natural disasters have a significant short run impact on the balance of payments and the fiscal deficit, and a long-term impact on debt. Natural disasters are expected to damage physical capital and reduce productivity in the tradable and non-tradable sectors, leading to a calibrated loss of 6 percent in real GDP in the year of the shock. As a result of the reconstruction cost of the destroyed physical capital and lower real GDP, the fiscal deficit to GDP ratio is expected to increase by 2.5 percentage points one year later. The current account deficit to GDP ratio is projected to increase by about 1.4 percentage points due to larger imports of goods and services for the reconstruction with a simultaneous increase in external debt to finance the fiscal deficit. While the twin deficits − fiscal deficit and current account deficit – are projected to gradually revert to pre-disaster levels over 12 years, persistent high public debt poses a risk for debt sustainability.

9. Maldives – DIGNAD results are presented to country authorities

   Summary: DIGNAD results are presented to country authorities by IMF Maldives team during the staff visit in February 2025. The Maldives is highly vulnerable to natural disasters due to its low-lying geography and exposure to tropical storms, sea level rise, and flooding. Building resilience against these threats is crucial for the country's sustainability and safety which was reiterated by participants.

10. Tanzania – United Republic of Tanzania: Third Review Under the Extended Credit Facility Arrangement and Request for Extension of the Extended Credit Facility Arrangement and Rephasing of Access, and Request for an Arrangement Under the Resilience and Sustainability Facility-Press Release; Staff Report; and Statement by the Executive Director for the United Republic of Tanzania

    Summary: On June 25, 2024, in the context of the Resilience and Sustainability Facility (RSF), the IMF published a Staff Country Report for Tanzania, featuring the Debt, Investment, Growth, and Natural Disaster (DIGNAD) model, an FCDO-financed product. The report includes several scenario simulations that illustrate Tanzania's vulnerabilities to climate change and the benefits of ex-ante adaptation investments on key macroeconomic variables (see Annex IV of the report for details). The results demonstrate that investing in adaptation infrastructure can improve Tanzania's economic resilience against natural disaster shocks, limiting post-disaster economic losses, recovery costs, and increases in public debt. Additionally, reforms that enhance public investment efficiency and domestic resource mobilization can further amplify the benefits of adaptation investments and strengthen long-term debt sustainability.

Income and Gender Inequality

11. Guinea: 2024 Article IV Consultation and Request for Disbursement Under the Rapid Credit Facility-Press Release; Staff Report; and Statement by the Executive Director for Guinea

    Summary: The Simandou iron ore mining project could potentially change Guinea's economic trajectory. We combine two IMF models (DIGNAR and MIMMI) to assess the project's potential medium and long-term economic and social impact. If production began in 2025, the level of real GDP would be 26 to 55 percent higher by 2030, depending on how potential tax revenues are spent. This is compared to a baseline scenario without the project. Spending the potential tax revenues on education and infrastructure could result in higher growth and stronger poverty reduction. This annex summarizes the Staff's Selected Issues Paper with the same title.

12. Guinea – Guinea: Selected Issues

    Summary: This paper examines the potential medium and long-term effects of the Simandou iron ore project on Guinea's economy and income distribution. The paper uses two complementary macroeconomic models. If production began in 2025, the level of real GDP would be around 26 percent by 2030 compared to a baseline scenario without the project. The project would induce a currency appreciation of around 3 percent in 2025 and 2 percent in 2030. It would lead to an increase in employment, but the positive impact on private consumption and inequality could be limited without active policies. Different policy scenarios suggest that spending the potential tax revenues on education and infrastructure results in higher growth and stronger poverty reduction.

IAPOC Toolkit – An Assessment Toolkit for Monetary Policy Frameworks
We have no publication under this topic this year.

Food Insecurity

13. Sierra Leone – Sierra Leone: Selected Issues

    Summary: Sierra Leone is among the most vulnerable countries in the world to the hazards of climate change. The interlinkages between climate shocks, elevated levels of poverty and food insecurity, and high dependency on rain fed agriculture suggest that climate strategies will need to be integrated with the social protection framework. Our simulations suggest that while a strategy of cash transfers to affected households, external trade liberalization or lowering the cost of mobility are good standalone policy responses to food insecurity, a combination of all three as a package is likely to be most effective.

Output 2.2 – Courses offered to Authorities and IMF staff

1. Workshop: Modelling Climate Risks and Policies – July 2024.

   Summary: From July 22 to 26, 2024, a workshop on Modelling Climate Risks and Policies was held in Johannesburg, South Africa, featuring training on climate-related tools, including the Debt, Investment, Growth, and Natural Disaster (DIGNAD) model, an FCDO-financed product. The event was organized in collaboration with the IMF's Institute for Capacity Development (ICD), the Research Department (RES), and the Fiscal Affairs Department (FAD). The workshop, requested and hosted by the South African Reserve Bank, provided hands-on training with Excel-based tools and models to integrate and assess climate considerations in policy formulation. Nearly 40 participants attended, including 24 from the Regional Capacity Development Center for Southern Africa (AFRITAC South – AFS) countries, which include low-income countries such as Comoros, Lesotho, Madagascar, Mozambique, Zambia, and Zimbabwe. Participants greatly appreciated the lectures and hands-on practice sessions, with many expressing interest in applying the tools, particularly the DIGNAD model, in their climate policy work.

2. Workshop: Macro-Climate Modelling with DIGNAD – July 2024.

   Summary: The Debt, Investment, Growth, and Natural Disaster (DIGNAD) model and toolkit were taught during a virtual workshop at the University Network at SOAS (School of Oriental and African Studies, University of London) from July 29 to 31, 2024. The event aimed to enhance the technical skills of academics and officials in macroeconomic modeling through country cases and hands-on training sessions. Prof. Johannes Pfeifer from the University of the Bundeswehr Munich provided a review of dynamic (stochastic) general equilibrium models as an introduction to the toolkit, focusing on practical applications using MATLAB/Octave. On the following days, Dr. Azar Sultanov from the IMF Research Department and Dr. Vimal Thakoor from the IMF Institute for Capacity Development/Africa Training Institute led sessions on the DIGNAD toolkit, covering its main components, country use cases, model calibration, incorporation of natural disasters, and evaluation of adaptation investments. The workshop was attended by 35 participants, primarily from academia, but also included policymakers from Zambia, Ethiopia, Tanzania, Nigeria, Uganda, Rwanda, Ghana, South Africa, Kenya, and Jamaica.

3. Course: Compilation of Macro-Relevant Environment and Climate Change Statistics – August 2024.

   Summary: From August 19 to 30, 2024, the IMF's Statistics Department (STA) and the Institute for Capacity Development (ICD) jointly organized a course on the Compilation of

Macro-Relevant Environment and Climate Change Statistics. A session on the Debt, Investment, Growth, and Natural Disaster (DIGNAD) toolkit, which focused on assessing the macro-fiscal effects of natural disasters and adaptation infrastructure, was a key component of the course. Attended by 35 participants from 30 countries, including several low-income countries, the course aimed to enhance participants' ability to support climate-relevant discussions and policy decisions by using IMF tools and resources. It covered methods, frameworks, and tools for compiling macro-relevant climate indicators and their application in policy formulation, emphasizing the need for an institutional framework for the climate data ecosystem and the importance of collaboration between agencies at both the national and international levels to ensure the availability of accurate data for climate-related macroeconomic analysis.

4. The DIGNAD Model: Applications and a New Toolkit - MathWorks Finance Conference 2024 -October 2024

   Summary: Azar Sultanov and Zamid Aligishiev presented the Debt, Investment, Growth, and Natural Disaster (DIGNAD) model and its applications at the MathWorks Finance Conference 2024. They introduced a new toolkit designed to analyze the macro-fiscal implications of climate shocks and emphasized the role of economic policies in mitigating risks by fostering resilience-building in developing economies. The conference, held in a virtual format, attracted approximately 1,400 registrants, and was widely promoted on social media platforms.

5. Course: DIGNAD: User's Guide to the Model and Toolkit – November 2024

   Summary: On November 1, a course introducing the FCDO-financed product Debt, Investment, Growth, and Natural Disaster (DIGNAD) model and toolkit was delivered to IMF staff. The toolkit enables users to evaluate debt sustainability risks in the aftermath of natural disasters, while addressing the need to rebuild public infrastructure within a robust general equilibrium framework. It also enables analysis of ex-ante policies, such as building climate adaptation infrastructure, enhancing fiscal buffers, or improving public investment efficiency. This makes it a valuable tool for economists conducting tailored analyses of macro-fiscal impacts of natural disasters and resilience-building investments. The half-day course was attended by 35 IMF economists and received highly positive feedback.

6. DIGNAD Training in Palau – November 2024

   Summary: There were three trainings of the DIGNAD toolkit in Palau during November 12-14, 2024: (i) DIGNAD toolkit workshop at ADB office in Koror, Palau, (ii) DIGNAD application to Palau workshop at Asian Development Bank office in Palau, and (iii) DIGNAD presentation at the Graduate School USA in Palau.

7. Course: Climate in Macroeconomic Frameworks – February 2025

   Summary: As part of the Climate in Macroeconomic Frameworks course, Azar Sultanov delivered a training on the Debt, Investment, Growth, and Natural Disaster (DIGNAD) model—also known as the DIGNAD toolkit—on February 6, 2025, at the IMF headquarters in Washington, D.C. The toolkit, an FCDO-financed product, helps users assess debt sustainability risks in the aftermath of natural disasters while addressing the need to rebuild public infrastructure within a robust general equilibrium framework. It also facilitates the analysis of ex-ante policies, such as investing in climate adaptation infrastructure, enhancing fiscal buffers, and improving public investment efficiency. This makes it a valuable tool for analysts conducting tailored assessments of macro-fiscal impacts related to natural disasters and resilience building investments. This was the first pilot delivery of the course in a blended format, combining virtual and in-person instruction. The blended format included a two-week self-paced virtual component, equipping 38 participants from 36 countries with essential skills in Financial Programming and Policies as well as the Debt Dynamic Tool, followed by a one-week in-person session focused on Climate in Macroeconomic Frameworks. Participants provided positive feedback, emphasizing the high quality of the course content.

Output 3.1 – High-level Policy Conferences Attended by IMF Senior Staff

1. Rethinking economic policy: Steering structural change – April 2024

   Summary: With societies bound to undergo massive structural changes in the context of the green energy transition, technological advances, and turbulent geopolitical relations, the "Rethinking economic policy: Steering structural change" conference takes stock of the challenges ahead, and rethinks how policies can support and steer the looming transformations and overcome political economy obstacles, and ensure broadly shared benefits. The conference included a series of engaging panels with a stellar cast of speakers and moderators.

2. Workshop: AERC-IMF Visiting Scholars Workshop 2024 – September 2024

   Summary: On September 25, the IMF Research Department hosted a workshop for six researchers from the African Economic Research Consortium (AERC) network, representing Sub-Saharan Africa (SSA). The researchers, hailing from Benin, Cameroon, Senegal, Sierra Leone, and Zimbabwe, presented their research on a diverse range of topics: (i) Microfinance Institutional Size and Trade-off between Financial Performance and Outreach: A Quantile Regression Approach. (ii) A Stochastic Frontier Estimation of Tax Efficiency in the Economic Community of West African States (ECOWAS). (iii) Natural Resources and Economic Growth in Sub-Saharan Africa: Does Corruption Matter? (iv) Is Exchange Rate a Shock Absorber or a Source of Shocks: Evidence from South Africa. (v) Mis-invoicing in Benin's International Trade: An Analysis from Mirror Statistics. (vi) Investigating the Sources of Asymmetric Growth and Inflation Shocks in the WAEMU Region Following the presentations, each AERC researcher was paired with an economist from the IMF Research Department for one-on-one discussions to provide further feedback and guidance on their work.

3. Transforming Industries for Growth in a Fragmented World – November 2024

   Summary: Economic diversification is essential in promoting sustainable growth and improving living standards in developing economies. A recently released IMF Departmental Paper, "Economic Diversification in Developing Countries: Lessons from Country Experiences with Broad-Based and Industrial Policies", analyzes various countries' diversification experiences, and highlights key ingredients of successful diversification strategies. This high-level seminar elaborated on policy options to tackle barriers to diversification, including both broad-based and industrial policies.

4. [Session ASSA 2025: Policy Uncertainty and Economic Activity]

Summary: The IMF's Fiscal Affairs Department and Research Department, together with Stanford University organized this prominent session at the ASSA 2025 meetings, chaired by Nicholas Bloom (Stanford University). The well-attended session (approximately 50 audience members) explored the macroeconomic consequences of various forms of uncertainty—global, fiscal, and trade-related—through four papers. The first paper introduced the World Uncertainty Index, a novel measure capturing uncertainty across countries, revealing that uncertainty shocks are associated with declines in output, particularly in countries with weaker institutions. The second paper focused on regional trade policy uncertainty in the U.S., showing that states more exposed to tariff volatility experience greater economic downturns, with effects magnified by regional trade openness and potentially exacerbated by expansionary monetary policy. The third paper examined how tariff rate uncertainty influences the structure of global supply chains, demonstrating that stable trade expectations foster long-term importer-exporter relationships and contribute significantly to welfare. Finally, the fourth paper developed a cross-country index of fiscal policy uncertainty, finding that elevated fiscal uncertainty depresses industrial production and widens spreads worldwide, even after accounting for U.S. monetary policy. Together, these papers underscore how different types of uncertainty—be it global, fiscal, or trade-related—play a critical role in shaping economic performance and policy outcomes across regions. The session benefited from thoughtful commentary by both policymakers and academics, and was further animated by an engaging and dynamic discussion with the audience.

Output 3.2 –Results of the research reflected in IMF policy papers such as Board papers,

Fiscal Monitor/WEO/REO/SDN

1. Chapter: World Economic Outlook: Slowdown in Global Medium-Term Growth: What Will it Take to Turn the Tide?

   Summary: The April 2024 edition of the World Economic Outlook, the IMF's flagship publication, included an analytical chapter that delves into the drivers behind the projected Slowdown in Global Medium-Term Growth. In this chapter, N. Li, C. Maggi, D. Noureldin, C. Okou, A. B. Sollaci, and R. Zymek identify a significant and widespread slowdown in total factor productivity, partly driven by increased misallocation of capital and labor between firms within sectors, as a key factor dragging down medium-term growth. Demographic pressures and a slowdown in private capital formation further depressed growth prospects. Absent policy action or technological advances, medium-term growth is projected to fall well below pre-pandemic levels. To bolster growth and turn the tide, urgent reforms are necessary to improve resource allocation to productive firms, boost labor force participation, and leverage artificial intelligence for productivity gains. Addressing these issues is critical, given the additional constraints that high public debt and geoeconomic fragmentation may impose on future growth.

2. Box: World Economic Outlook: Distributional Implications of Medium-Term Growth Prospects

   Summary: The April 2024 edition of the World Economic Outlook featured a research box in chapter 3 (Slowdown in Global Medium-Term Growth: What Will It Take to Turn the Tide?) titled “Distributional Implications of Medium-Term Growth Prospects”. In this box, G. Cugat and C. v. Hombeeck examine how the medium-term growth slowdown could affect global income inequality and convergence between countries. The research provides estimates for cross-country income convergence using a broad sample of countries and includes global inequality estimates. The box also presents an analysis of GDP and welfare drivers across different income groups, including advanced economies, emerging markets, and low-income countries.

3. Box: World Economic Outlook: Fragmentation Is Already Affecting International Trade

   Summary: Geoeconomic fragmentation is already affecting global trade, with trade between politically distant blocs slowing more than within-bloc trade since Russia’s invasion of Ukraine. Strategic sectors like chemicals and machinery are particularly impacted. The trend is evident even when excluding major players like China and the U.S. Additionally, U.S.–

China trade ties have weakened since 2017, leading to longer, less efficient supply chains. If fragmentation deepens, it could significantly reduce global efficiency, specialization, and economic gains.

4. The 4th Financing for Development Conference-Contribution of the IMF to the International Financing for Development Agenda

   Summary: The Fourth Financing for Development (FfD4) conference will aim to shape the international financing framework to support development in the coming years. The paper, the 4th Financing for Development Conference: Contribution of the IMF to the International Financing for Development Agenda, presents IMF staff's assessment of the economic context, financing needs, and policy agenda that could support the international financing for development agenda. It also provides an overview of the main areas for the Fund's role in support of this agenda. P. Lastauskas provided input on the trends and composition of financial flows to LICs, while B. Shang helped coordinate the companion paper on IMF-World Bank collaboration.

Other outputs

Newsletters

1. June 2024 Newsletter
2. September 2024 Newsletter
3. December 2024 Newsletter
4. March 2025 Newsletter

Blogs/Article/Press/Other
1. VoxEU Blog – May 2024: Global gender gaps may never close on their own
2. F&D Article – September 2024: Back to Basics: Total Factor Productivity
3. F&D Article – September 2024: Eliminating the productivity Drag

External presentations

1. The paper 'Changing Global Linkages: A New Cold War' was presented at
    - Peer-to-Peer Workshop for Central Bank Practitioners in CCAMM (June 2024).
    - Conference on Globalization and Fragmentation in Manila, Philippines (July 2024).
    - Workshop on Fragmentation in Trade and Financial Flows at the US Federal Reserve Board (September 2024).
    - BIS/WTO/PIIE Conference on Fragmentation (October 2024).
    - European Commission's Annual Research Conference (November 2024).
    - 2024 Global Challenges Workshop on Industrial Policy and Trade Disruption at Bocconi University (November 2024).
    - The Annual Meetings of the Southern Economic Association (November 2024).
    - The American Economic Association Annual Meeting in San Francisco (January 2025).
2. The paper 'Do Capital Inflows Spur Technology Diffusion? Evidence from a New Technology Adoption Index' was presented at
    - The Barcelona School of Economics Summer Forum (June 2024).
    - George Washington University Economics Department Seminar Series (October 2024)
    - LACEA/LAMES Annual Meeting (November 2024).
    - The Annual Meetings of the Southern Economic Association (November 2024).
    - The American Economic Association Annual Meeting in San Francisco (January 2025).
    - The Research Institute for Development, Growth and Economics (RIDGE) Forum (December 2024)
3. The country application 'Toward a New Revenue Strategy for Vanuatu: The Role of Income Taxes' was presented at the poster session at the IMF Small Developing States Week (November 2024).
4. The Bilateral Trade in Services (BiTS) database was presented to FCDO staff (November 2024).

5. The paper 'Knowledge Diffusion Through FDI: Worldwide Firm-level Evidence' was presented at the
    - European Commission's Annual Research Conference (November 2024).
    - The American Economic Association Annual Meeting in San Francisco (January 2025).
6. The forthcoming working paper 'The Allocation of Talent and Income Differences Across Countries' was presented at the CREI 30th Anniversary Conference (November 2024).
7. The country application 'Scaling Up Investment, Enhancing Growth, Debt Sustainability, and Climate Resilience in Senegal' was presented at the IMF's Institute for Capacity Development, and as part of the African Department Seminar Series (February 2025).
8. The country application "Evaluating Saving-Investment and Resilience Building Strategies for Palau" was presented at the Small Development States Analytical Seminar (March 2025)