Annual Review Template – from April 2020

Title: Macroeconomics Research in Low-Income Countries (MRLIC)		
Programme Value £ (full life): £19,835,983		**Review date:** July 2020
Programme Code: 202960	**AMP start date:** Feb 2012	**AMP end date:** Mar 2023

Summary of Programme Performance

Year	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	**2019/20**
Overall Output Score	A++	A++	A++	A++	A++	A++	A+	**A+**
Risk Rating	Low	Low	Low	Low	Low	Minor	Minor	**Minor**

DevTracker Link to Business Case:	http://iati.dfid.gov.uk/iati_documents/56217735.odt
DevTracker Link to results framework:	http://iati.dfid.gov.uk/iati_documents/52760908.xls

A. SUMMARY AND OVERVIEW

Description of programme

Macroeconomic stability is critical for economic growth. Low income countries (LICs) are particularly vulnerable to shocks that cause periods of macroeconomic instability, low growth and deeper poverty. During crises (financial crisis of 2007/08, collapses in commodity prices, current covid-19 pandemic) LICs experience acute macroeconomic pressures. However, research has generally focussed on the situation in developed countries. There are not many economists producing good quality, policy relevant macroeconomic research for LICs. Much academic macroeconomics at the high-end is opaque, mathematical and hard to relate to policy. Not much covers LICs. Similarly, capacity within LICs to use the evidence for better macroeconomic policymaking is limited.

These LIC topics do not present a systemic challenge to the global financial system and are therefore unlikely to be sufficiently covered by IMF research. **Macroeconomic Research in Low Income Countries (MRLIC)** is a strategic partnership between DFID and the International Monetary Fund (IMF) which seeks to address these issues. DFID is providing £19.8m over 11 years (2012-23) to the IMF to undertake and utilise research into critical macroeconomic issues affecting LICs. Supporting this partnership allows DFID to influence the IMF's work on core macroeconomic issues in LICs (traditional IMF topics) and on work which breaks new ground for the IMF. Deeper understanding of LICs will improve IMF advice to country governments – an important and influential route for setting macroeconomic policy in the countries where DFID works.

The aim of MRLIC is that "*Better macroeconomic policy-making in LICs leads to faster economic growth, job creation and poverty reduction in LICs*". This is delivered through four core activities:
- Using IMF staff and external academics to produce high quality, policy relevant research on LIC macroeconomic issues;
- Working through IMF country operations to ensure that research products are used by IMF country teams and partner authorities;
- Shaping IMF policy positions and strengthening engagement by senior IMF policymakers on LIC issues; and
- Expanding the network of researchers and policymakers working on LIC macroeconomics.

MRLIC's research is conducted by IMF staff and external academics. It focuses on five core areas:

- Modelling and understanding policy choices (e.g. monetary, exchange rate, fiscal, structural policies).
- Understanding macro-financial linkages (e.g. capital flows, financial deepening and inclusion, macro-prudential policies, and transmission of macro-financial shocks).
- Promoting structural change and institutional development (e.g. public investment, growth and debt sustainability, macroeconomic management of natural resource wealth, growth through diversification, structural reforms).
- Enhancing inclusion (e.g. income inequality, macroeconomic policy and income distribution, gender and macroeconomics).
- Building resilience (e.g. natural disasters, climate change, migration, conflict).

Research is used to generate policy change through active engagement on IMF country missions, training for IMF staff and country authorities, and engagement with the IMF Board and academic economists. Linking the IMF Research Department (RES), the Strategy, Policy and Review Department (SPR), and the Institute for Capacity Development (ICD), helps ensure that the research agenda remains relevant to the Fund's policy activities and is disseminated across Fund operations.

The programme began as a three-year partnership in March 2012, was extended for a further two years (to March 2017) in late-2014. A third phase was approved in July 2016, extending the programme by a further three years (to March 2020) with a budget of £5.13m. This Annual Review covers the final year of the third phase.

A fourth phase of the programme (£5.1m) was approved in 2019 and runs for three years from April 2020.

Summary supporting narrative for the overall score in this review

This programme overall scores an A+ for this year. Three outputs have scored A+, one has scored A. This continues the strong performance for MRLIC.

Output 1 – covering the publications from the programme – has performed to expectations. MRLIC research produces working papers (129 to date) on topics relevant to macroeconomics in LICs. Many of these go on to be published in respected peer-reviewed journals (70 to date). In previous years there have been publications in some top flagship economics journals (American Economic Review (AER), Journal of Economic Literature (JEL)), but these are largely lacking this year (except one paper in the Journal of Monetary Economics). It is worthwhile continuing to pursue some top publications in the future to ensure the academic credibility and influence of the programme.

Outputs 2, 3 and 4 – covering use of research, engagement of IMF senior staff, and research networks respectively – have all exceeded expectations. Over time, the tools and research produced by MRLIC have been increasingly integrated into internal IMF processes and analysis. There is evidence of IMF country teams using the products in their day to day work, and there is evidence of training – of both IMF staff and country government staff – to use toolkits and models for policy analysis.

The research products are discussed at academic conferences (influencing broad discourse) and by senior IMF leadership, including at the IMF Board (influencing the organisation as a whole). Research on LICs is regularly included in some of the IMF's flagship publications.

There is also evidence of the programme achieving at the outcome level. Some examples are set out in Section B. For instance, the MRLIC programme has developed a family of models

based on the Debt Investment and Growth (DIG) model. These have been applied to over 70 countries. The model is widely used by the IMF in the analysis of the macroeconomic impacts of public investment. A version of the model incorporating natural resources (a key element of the economy in many LICs) – the DIGNAR model – has been produced, and widely used. The newest version – the DIG-Labour model – better incorporates LIC-specific features labour markets (e.g. informal sector). Using these models in the IMF's regular monitoring and conversations with country authorities improves understanding of the impacts of policy choices, allowing for more informed decisions.

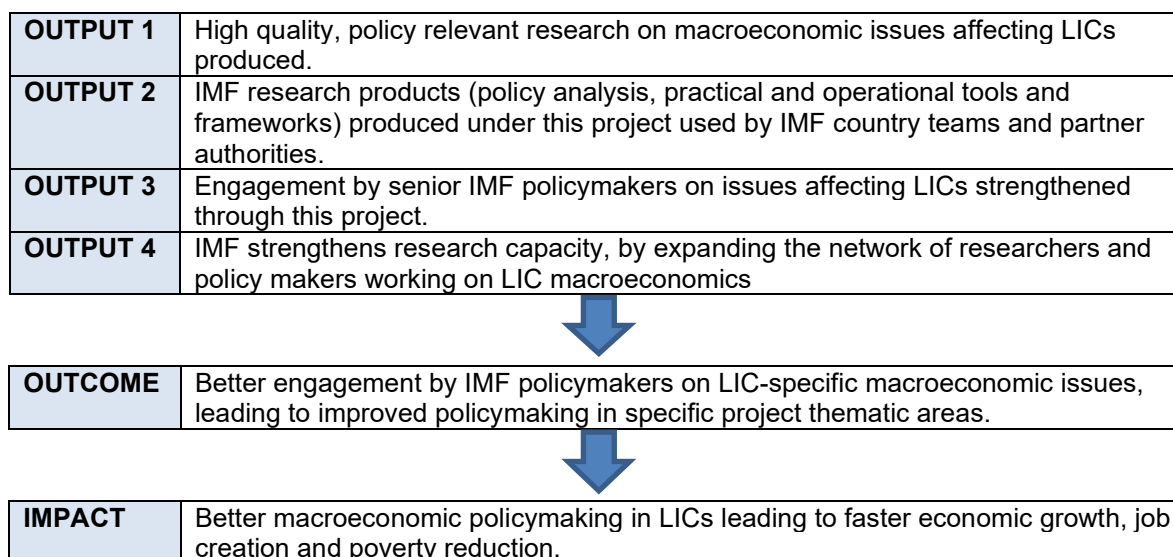**Major lessons and recommendations for the year ahead**

The final few months of phase three were severely disrupted by covid-19 (see below). Nonetheless, phase 3 as a whole has been a success, and MRLIC has moved into a fourth phase. Key tasks for the near future include:
- Finalising the phase 4 logframe (based on learning from indicators in phase 3).
- Finalising the role of the advisory group.
- Continually considering how the programme should adapt to covid-19.
    - o To date the focus has been on immediate-term advice and modelling that has been mostly internal to the IMF (because this sensitive work has had to be delivered very quickly). It is important to consider how best to publish and publicise this work, where feasible.
    - o If IMF missions remain suspended for a long time, then it will be necessary to consider how best to ensure the research influences IMF operations.
    - o Similarly, in the short-term country authorities are likely to be focussed on the management of the public health crisis.
    - o New research topics will emerge which were not envisioned in the initial proposal for phase 4. It is important to ensure that these emerging areas are aligned with the broad aims of MRLIC.

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 Business Case does not specify a formal Theory of Change (ToC). The implicit ToC for the program is summarised in its logical framework:

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.

The ToC for this programme remains valid, and there have been no major changes over the past year. A decision was taken to partner directly with the IMF to maximise the early engagement of potential users of the research and ensure that the research agenda was shaped by demand for policy advice. The IMF have unique advantages in these areas and the programme's management arrangements (jointly run in the Fund by RES, SPR and ICD) ensures that the research agenda is relevant for the Fund's policy activities and is disseminated across Fund operations. The IMF's role in policymaking in LICs is often crucial, they monitor macroeconomic developments and – especially where IMF financial programmes are in place – influence policy. By increasing IMF engagement with LIC-specific issues, the ultimate impact is improved macroeconomic policy in LICs – which results in real-world benefits (economic growth, job creation, reduced inequality, reduced poverty).

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 at the end of phase 3 has met the expected outcome: *Evidence of improved IMF policymaking and integration of LIC-specifics in project thematic areas*.

The MRLIC programme is making substantial strides in engaging wider IMF staff on its research on LICs. In the early years of the programme MRLIC staff were proactively engaging and disseminating their research, for example by going on missions and demonstrating the usefulness of toolkits and analytical products. As the programme has matured this has changed. The MRLIC programme has built a brand name across working level staff in the Fund. MRLIC staff receive requests for input into country missions, funded by country teams. MRLIC models and analyses stand the test of time by maturing into the regular analytical toolbox of IMF desk economists and country authorities and being used directly in IMF Article

IV[1] country reports and reviews of IMF lending programmes, thus feeding directly into policy recommendations to member states.

The programme has produced numerous practical products (models, data toolkits, how-to notes) on which IMF staff are trained. This is a key channel for ensuring that the high-quality research has impact on Fund operations. It is also a more efficient way of operating offering improved value for money. There are few concerns around quality assurance: MRLIC staff stay involved (often supporting analysis or jointly writing papers with country teams), and the IMF maintains rigorous internal-QA processes.

A substantial number of country authorities have been trained on the use of MRLIC models and uptake by country authorities is also a strength of the programme. However, as MRLIC staff are less directly involved in IMF missions, use of research products is increasingly done through working with IMF country teams. There are two areas where this has been particularly strong: monetary policy (a traditional area of expertise for the IMF) and gender equality (a new area where MRLIC research has shaped the IMF's position).

Much of the detail is contained in Section C, but some examples of outcome delivery across the different themes are:
- The success of the family of models based on the Debt Investment and Growth (DIG) model. This is used to analyse the macroeconomic impact of public investment in Article IV consultations (this year in Madagascar and Cameroon). The version featuring natural resources – the DIGNAR model – was this year applied to four countries (Mozambique, Gabon, Guyana and Republic of Congo). The latest incarnation of the model – the DIG-Labour model which better incorporates labour markets – has been launched in an IMF working paper.
- The Forecasting and Policy Analysis System (FPAS) continued to be used in the IMF's surveillance work (this year in Uganda, Honduras, Malawi and Zambia). The influence of the FPAS was extended through an online course (Model-based Monetary Policy Analysis and Forecasting) to introduce the concepts to country authorities and researchers.
- Years of work on gender budgeting and the macroeconomic perspective of gender equality were collated in an IMF Staff Discussion Note (SDN) on Women in the Labour Force: The Role of Fiscal Policies. This was launched by the IMF Managing Director at the Global Women's Forum in February 2020.
- There have been various influential outputs on structural change. Work on the political economy of structural reforms (SDN: The Political Costs of Reforms: Fear or Reality?) featured a high-profile panel discussion Making the Case for Reform at the 2019 Annual Meetings. The World Economic Outlook, the IMF's flagship publication, featured research findings on the gains in growth from structural reforms.

There remains strong evidence of senior engagement within the IMF on LICs issues, for example from the Managing Director's engagement on some of the events above. More generally the IMF's Deputy Managing Director noted that "*the IMF-DFID project has been instrumental in this endeavour by providing much needed support to country teams in the formulation of sound policy advice to our poorest member countries. In the period ahead, I look forward to the contributions of the project in facilitating the delivery of our mandate, more importantly as the Covid-19 pandemic is threatening to wipe out the hard-won development gains LICs have achieved in recent years.*" Within the IMF there is recognition that this programme has practical applications and fills an important gap, the Director of the SPR Department stated: "*The IMF-DFID project continued to provide strong analytical underpinning*

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[1] The IMF undertakes (annual) consultations with countries. These are known as "Article IV consultations". IMF economists visit a country, assess economic and financial developments and discuss economic and financial policies with government and central bank officials. They also consult parliamentarians, business representatives, labour unions and civil society. The reports of these consultations ("Article IV reports") are discussed to the IMF Executive Board.

to the Fund's policy advice for low income countries in key policy areas, including inequality, gender, climate change, fiscal and monetary policy. LICs are facing daunting development challenges amid the Covid-19 pandemic, and the need for tailored policy advice is even stronger. The IMF-DFID project will play an important role in that regard."

As the programme moves into a fourth phase it will be important to continue to consider the issue of funding. There is value in DFID funding the programme, for the reasons set out at the end of this Section below. However, in the longer-term we should test the likelihood of the IMF self-funding (or expanding the donor base for) work on LICs. Ideally the work of MRLIC successfully proves that LICs issues are important and can help create a culture shift within the IMF. There is clearly support from senior Fund staff, and this needs to be built upon throughout the current phase.

The covid-19 pandemic was disruptive to planned research in the final months of phase 3. Planned publications were delayed, events were cancelled, and the research team were diverted into "crisis mode" in the IMF. The team undertook work providing an evidence base for the likely impacts, specifically in LICs. These highlighted four concurrent macro shocks on LICs: health impact of covid-19, falling commodity prices, falling capital flows, and decreasing remittances/trade and tourism revenue.

Covid-19, and the ongoing indirect impacts, will remain macro-critical for LICs for the foreseeable future. There is a need for a workstream to focus on this covering (amongst other things):
- The impact on debt in LICs
- How economies recover from crises (learning from the past)
- Monetary policy options in LICs during crises
- Inflationary impacts
- How monetary policy and regulation, in response to the covid-19 crisis, has differing impacts for lower income groups.

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

The programme should continue. MRLIC continues to perform well, achieving output and outcome targets and to have tangible impact within the IMF.

The MRLIC programme's exclusive focus on macroeconomics makes it a unique programme within the portfolio of the Growth Research Team (GRT) and Research and Evidence Department (RED). This adds value to the remainder of the portfolio which examines largely microeconomic issues. The decision (taken in late-2019) to extend the programme for another three years remains correct. The justifications for that decision remain valid, including:
- MRLIC has a strong historic performance record, consistently scoring A++ or A+.
- MRLIC will build on previous work, and examine new, emerging challenges. It covers both core macroeconomic research on LICs (traditional IMF topics) and work which breaks new ground within the IMF.
- MRLIC will build continue to influence the IMF by increasing internal understanding of LICs.
- DFID's research funds are leveraging other IMF funds. IMF country and operational teams are now requesting and "buying in" analysis and expertise from MRLIC's team members.
- In the absence of DFID support this work would not happen as LICs do not present a systemic challenge in the global financial system.
- DFID cares about, and is committed to delivering, global public goods.
- MRLIC fills a clear gap in the academic world where few economists produce good quality, policy-relevant macroeconomic research for LICs.
- MRLIC helps to demonstrate the UK's global leadership on LICs.

C. DETAILED OUTPUT SCORING

Note on scoring: the scores are based on the targets set at the start of phase 3 (2017). DFID scores outputs on a range from C to A++. For this programme, scores are related to low, medium and high indicator targets as follows:

Target reached	Score
<L	C
L	B
M	A
H	A+
>H	A++

Output Title	High quality, policy relevant research on macroeconomic issues affecting LICs produced.		
Output number:	1	Output Score:	A
Impact weighting (%):	30%	Weighting revised since last AR?	No

Indicator(s)	Milestone(s) for this review	Progress
1.1 Number of priority research papers produced, on the following research topics: 1) Monetary and exchange rate policies; 2) Public investment, growth, and debt sustainability; 3) Macroeconomic management of natural resources; 4) Macroeconomic policies and income distribution; 5) Financial deepening for macroeconomic stability and sustained growth; 6) Growth through diversification; 7) Gender and macroeconomics. 8) Capital flows.	By March 2020: H (128 papers) M (124 papers) L (120 papers)	129 cumulative (16 in 2019/20) *Met high target*
1.2 Number of research papers accepted for publication in appropriate high-quality peer-reviewed journals	By March 2020: H (65 papers) M (63 papers) L (61 paper)	70 (12 in 2019/20) *Exceeded high target*
1.3 Number of freely available books	By March 2020: 3 books	2 (0 in 2019/20) *Missed target*

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

One indicator has exceeded the high target, one has met the high target, and one has not met the target. This output scores an A.

Indicator 1.1: Working papers (WPs)
MRLIC produced 16 WPs in the past year[2], bringing the total to 129 over the programme to date. This meets the high target. This is a substantial body of work produced by the programme. IMF WPs are high quality and go through a strict quality assurance process within the Fund. The IMF WP series is ranked in the top 25 for economics.[3]

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[2] Four of the WPs (# 5, 6, 9, 15 in the list in Annex A) were produced in the reporting year (i.e. they had been internally reviewed, finalised, and sent for posting on the IMF website) but not published as the IMF put a hold on publications that were not related to Covid-19 from mid-February 2020.
[3] IDEAS/RePEc Aggregate Rankings for Working Paper Series, accessed 18th June 2020. IMF Working Papers ranked number 23. Equivalent ranking in 2019 was 20.
https://ideas.repec.org/top/top.wpseries.all.html

The WPs produced in the past year cover all five of the MRLIC themes. These themes were agreed at the start of this phase of the programme as representing the most policy-relevant areas ripe for LIC macroeconomic research. The specific papers are chosen through the IMF's decision processes within the RES and SPR departments, sticking closely to the MRLIC phase 3 plan.

WPs in the past year cover a broad range of topics. Some examples include:
1. Investigating the capacity of countries to expand public investment efficiently. Finds that unit costs begin to increase once public investment is close to 10% of GDP, but this is lower for countries with low investment efficiency. (Gurara et al.).
2. Extending the debt-investment-growth (DIG) model to incorporate more complex labour markets which reflect the situation in LICs (e.g. segmented labour markets, efficiency wages, involuntary unemployment, and an informal sector). (Buffie et al.).
3. Using Senegalese data to examine the combination of being in the informal sector and gender. It finds that (i) in urban areas, being female increases the probability of being an informal worker by 8.5%; (ii) education is usually more relevant for women; (iii) having children reduces men's probability of being informal but increases the probability for women. (Malta et al.).
4. Gains from anti-corruption reforms in the Republic of the Congo could be substantial: additional growth of 0.8% – 1.8% p.a., and reduced debt falls of 2.25% – 3% of GDP p.a. over the next decade. (Melina, Selim, Verdugo-Yepes).

Further summaries are in Annex B. A full list of the WPs produced this year is in Annex A.

The MRLIC team are able to track the use of research outputs (working papers and published papers). From 175 products there are more than 1,400 citations (up from 800 last year). The analysis shows that 80% of publications have been cited, with an average citation of 11 per article cited (ten citations is a recognised benchmark). Three-quarters of the citations are non-self (i.e. no connection to the IMF or MRLIC programme). Downloads of IMF working papers are also tracked. MRLIC working papers have been downloaded over 110,000 times (up from 75,000 last year), approximately 900 downloads per paper.

Indicator 1.2: Peer-reviewed published papers
This year MRLIC had 12 papers accepted for publication in peer-reviewed journals, bringing the total over the life of the programme to 70. This exceeds the (cumulative) high target of 65. Some of the publications are in high-quality and well-known journals (European Economic Review, World Development, Journal of Monetary Economics). There are also some publications in lower impact journals. This is something that, in order to ensure the widespread impact of MRLIC work, should be addressed in the future. The papers published in the past year cover four of the five MRLIC themes. Some examples include:
1. Looking at the "twin deficits" in developing economies finds that 1% of GDP unanticipated increase in the government budget balance improves the current account balance by 0.8 percentage points of GDP. The effect tends to be larger during recessions, with more openness to trade, with less flexible exchange rates, and at lower levels of public debt. (Furceri, Zdzienicka).
2. Examining the aggregate and distributional effects of policies to liberalise international capital flows. Results suggest that these policies have led to limited output gains, yet contributed to significant increases in inequality. Findings suggest that suggests that liberalisation episodes reduce the share of labour income, particularly for industries with higher external financial dependence, higher natural propensity layoffs workers, and higher elasticity of substitution between capital and labour. (Furceri, Loungani, Ostry).

Further summaries are in Annex B. A full list of the peer-reviewed papers published this year is in Annex A.

Indicator 1.3: Book publications
One book has been completed this year: Macroeconomic Policy in Fragile States. It has not, however, been published. The plan was to launch this in March 2020, but the event was postponed due to covid-19. Publication is planned to shift to December 2020/January 2021, with a conference to launch the book. However, it will not (initially) be open access and, while the content is largely available in the form of working papers, does not count towards this indicator.

The book comprises 20 chapters by experts in the design and practice of macroeconomic policy in fragile countries. The authors are from academia, international organisations (e.g. IMF and World Bank), and thinktanks around the globe. The book is aimed at practitioners, policymakers and programmes looking to understand the challenges of designing and implementing macroeconomic policies in fragile situations. The book will also be used to develop training modules for IMF economists interested in working on fragile states, and to inform IMF capacity development activities.

Assess the VfM of this output compared to the proposition in the Business Case, based on performance over the past year

VfM metrics under this output are based on *efficiency* indicators (i.e. unit costs of outputs): the cost per Working Paper, and cost per published paper.

Cost per Working and Published Paper

Total Staff/Contractual/VS Costs[4]	$14,221,507
Research Paper Costs	$10,666,130
Country Applications Costs	$3,555,377
Working Papers	155
Produced	129
Commissioned	26
Cost Per Working Paper	$68,814
Published Papers	77
Produced	70
Commissioned	7
Cost per Published Paper	$138,521

The average cost per paper is lower than the DFID benchmark of $190,000 (£156,000) per paper.[5] Table 5 shows that the cost per working paper for the eight years is approximately $69,000 (£56,000), broadly maintained as low as in the last year. The above table also shows that the cost per published paper is $138,000 (£119,000), down from around $158,000 (£130,000) reported last year. This is in line with the expectation that as more working papers get accepted for publication, the cost per published paper will decrease. We estimate that staff, contractual employees, and visiting scholars spend 75% of their time on research papers, while the remaining 25% is devoted to country applications work.[6] The total staff, contractual, and visiting scholar cost is thus split between papers and applications.

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[4] Estimated as the sum of "HQ led missions", "Short-term Advisors", and "Research HQ based/Visiting Scholars". Note that the category "HQ led missions" 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.
[5] The currency conversion is based on the exchange rate as of May 15, 2020.
[6] The total research staff costs are estimated as the sum of "HQ led missions", "Short-term Advisors", and "Research HQ based/Visiting Scholars" from Table 4. The category "HQ led missions" 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.

The quality of the project outputs is very high, even with the low average cost. The total number of publications reached 70 for the eight years, including the ones at the highly ranked journals such as Journal of International Money and Finance, The World Bank Economic Review, Economic Inquiry and Journal of Monetary Economics, among others.

Describe any changes to this output during the past year, and any planned changes as a result of this review.

There were no changes to the output or indicators in the past year. Following the previous Annual Review targets for 1.1 and 1.2 were revised (upwards) to ensure they remained sufficiently stretching in the final year of phase 3.

A logframe for phase 4 is in development and will be finalised soon after this Annual Review is complete (end August 2020).

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

Recommendations:
- Discuss how to track the quality of published outputs (possibly proxied by the quality of journals) as well as the quantity.
- Ensure that recent important (but mainly internal) work on covid-19 is turned into useful, high-quality papers and publications where possible.
- Ensure that synthesis products produced in phase 3 but delayed by covid-19 are published and publicised.
- Examine how books (in particular) can

The progress on last year's recommendations is set out in the table below.

Recommendation	Progress
IMF and DFID should agree the format and dissemination plan for synthesis products summarising the key themes of research from the MRLIC programme. This will include organising a stocktaking conference (currently planned for March 2020) to disseminate the outcomes of the MRLIC research to a policy and academic audience. This will also seek to shape the direction of macro research on LICs more widely by allowing for an exchange of views on key policy priorities that could benefit from being further explored through research.	Synthesis products have been produced on the following topics: Debt-Investment-Growth Nexus; Income Inequality; Gender Equality; and Economic Diversification. Unfortunately, the dissemination of these articles and the stocktaking conference were disrupted by covid-19.
Whilst the "high-quality" element of this output is straightforward to assess, the "policy-relevant" element is harder. In a future phase of work the programme should establish a programme advisory committee. This small group (made up of IMF, DFID, and senior external advisors from academia and thinktanks) will add value, in part, by advising on the relevance to wider policy debates of the research work and suggesting areas for future work and collaboration opportunities.	This is planned for phase 4.
The IMF-DFID logframe discussion (by end July 2019) should include: - Review targets for 1.1 and 1.2 to see whether it is appropriate to increase targets for 2019/20 to account for overachievements.	Done. - Targets were revised upwards for 1.1 and 1.2. - The books indicator (1.3) will be reconsidered for the phase 4 logframe as getting books (as opposed to the

- Review 1.3 to assess the likelihood of getting books freely available. - Review targets under 1.3 to see whether low/medium/high is appropriate for an indicator with a small number of outputs.	individual papers contained therein) freely available is hard. - Low/medium/high targets were changed for 1.3.

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 (%):	30%	Weighting revised since last AR?	No

Indicator(s)	Milestone(s) for this review	Progress
2.1 Application and use of tools and frameworks by country teams.	By March 2020, evidence of number of country teams applying policy tools and frameworks: H (107) M (104) L (102)	115 cumulative (17 in 2019/20) *Exceeded high target*
2.2 Application and use of tools and frameworks by country authorities.	By March 2020, evidence of number of country authorities applying policy tools and frameworks: H (46) M (43) L (40)	46 cumulative (8 in 2019/20) *Met high target*
2.2.1 Courses offered to country authorities	By March 2020, evidence of courses offered to country authorities: H (20) M (18) L (17)	20 (4 in 2019/20) *Met high target*

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

One indicator has exceeded the high target, two have met the high target. This output scores an A+.

Indicator 2.1: Applications by country teams
There were 17 instances of uptake[7] of MRLIC work by IMF country teams, bringing the total to 115 over the lifetime of the programme. This exceeds the high target for the indicator.

In contrast to previous years – where much of the work under this indicator was related to the MRLIC work on the FPAS – the work in the past year with country teams has been across three broad areas.

  i.   The *diversification toolkit* has been developed under the MRLIC programme. In the past year it has been used by IMF country teams as an analytical input to Article IV consultations in Nigeria and Uganda. In Nigeria IMF staff highlighted the need to overcome constraints to economic diversification by strengthening the business environment, increasing public investment efficiency, accelerating the Power Sector Recovery Plan, implementing the government's financial inclusion strategy, and improving education and health outcomes. In Uganda, the analysis focussed on trade diversification: export product quality has increased (although remains lower than that demanded by importers, which suggests more scope for improvement). Imports are driven by private sector imports, along with oil imports and machinery imports

  ii.   The *debt-investment-growth (DIG) and debt-investment-growth and natural resources (DIGNAR) models* have been adapted by MRLIC used to inform IMF country work. The models have been used to provide analytical input to Article IV consultations in Guyana (efficiency gains from structural reforms), and to reviews of IMF programmes

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[7] These instances are generally defined as (i) research being used in analysis that produces papers (such as Article IV reports, selected issues papers, IMF programme reviews) or (ii) training courses.

in the [Republic of the Congo](assessing macroeconomic gains from anti-corruption reforms) and [Cameroon](measuring the gains from public investment reforms). The models have also been used to produce "selected issues" papers on [Mozambique](macro effects of alternative scenarios of scaling-up public investment), [Gabon](macro and fiscal effects of governance reforms) and [Madagascar](growth and other macroeconomic impacts of a planned public investment scale-up).

iii. MRLIC work on *inequality* continues to have impact. Country teams used analytical tools developed under the MRLIC programme in:

- Article IV discussions in [Laos]: Labour force participation rates are relatively equitable, yet gender gaps persist in formal employment and hourly wages. The 20% gender wage gap is partly associated with females' lower educational attainment. The study quantified the effects of policies promoting girls' education and reducing gender barriers in the labour market.
- Selected issues paper for [Senegal]: Focussing on the Free Quality Education for All programme. This study finds that the gains from providing each child with at least lower secondary education could, in the long-term, boost GDP by 40%, substantially lower income inequality, and generate additional fiscal revenues through higher individual incomes. In addition, closing gender gaps in education across income groups or increasing the quality of education could yield gains of 8% and 27% of GDP, respectively.
- Article IV discussions in [Moldova]: Using the inequality toolkit finds that replacing tax expenditures with efficient public investment would yield large growth dividends. Tax expenditures result in significant revenue losses and are an inefficient way to provide support. They are also distortive, as they impair the level playing field for businesses.

Another channel through which MRLIC work is operationalised in the IMF is through training courses on toolkits provided to IMF staff through the ICD. Staff from country and regional teams undertake training and then can apply toolkits on mission and in-country. In the past year there have been training courses and clinics on inclusive growth, distributional impacts of policy reforms, diversification and structural transformation, and labour market reforms.

These training courses, delivered at IMF HQ, are evaluated by the ICD. This found very high satisfaction of participants for training from the MRLIC programme. The average rating was 4.7 (out of 5) on questions relating to the topics covered, effectiveness of presenters and overall usefulness of the training.

Indicator 2.2: Applications by country authorities
(sub indicator 2.2.1): Courses offered to country authorities
There have been eight incidences of MRLIC toolkits and frameworks being used by, and training courses delivered to, policymakers in-country. The cumulative high target (46) is met.

Efforts to ensure take-up of MRLIC work by country authorities are key to the success of the programme. Training is a key channel to induce uptake of MRLIC products by IMF country teams and country authorities. As would be expected given the IMF's mandate, most interaction is with staff from Central Banks, Ministries of Finance and other economic policymaking institutions.

Monetary policy has again been a focus. The FPAS has been further developed in Central Banks in Uganda (working with the Bank of Uganda (BoU) to develop a FPAS manual for internal BoU use), Ghana, Zambia, Honduras, Malawi and Vietnam. There have also been training courses on monetary policy analysis and forecasting, both in-person and [online].

Unfortunately, the ICD system for evaluating training is not used for the more customised training held in-country. There is no standardised feedback collected. Anecdotal feedback (e.g. from senior Central Bank staff to IMF Country Directors) is that training is well-received and there is consistent demand from country authorities.

Assess the VfM of this output compared to the proposition in the Business Case, based on performance over the past year

There are no VfM metrics specifically relating to this output in the Business Case. Nonetheless this output contains an important mechanism for ensuring VfM within this programme. On *efficiency*, the use of research products (policy analysis, tools and frameworks) by IMF country teams and partner authorities is critical to improving macro advice to LICs (by IMF staff) and macro policymaking (by country governments).

On *equity*, the content of the MRLIC work that has gained a lot of traction is on gender inequality, income inequality and distributional analysis of policy changes. This is enhancing the IMF's ability to assess the differential impact on different groups (women, income groups) of their work and policy recommendations to country governments.

Describe any changes to this output during the past year, and any planned changes as a result of this review.

There were no changes to the output or indicators in the past year. Following the previous Annual Review targets for all targets were revised (upwards) to ensure they remained sufficiently stretching in the final year of phase 3.

A logframe for phase 4 is in development and will be finalised soon after this Annual Review is complete (end August 2020).

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

Recommendations:
- Work out how to assess (either through ongoing monitoring or through the Annual Reporting process) the usefulness of training delivered in-country.

The progress on last year's recommendations is set out in the table below.

Recommendation	Progress
As delivering training on toolkits and models becomes an increasingly important channel for MRLIC to influence IMF operations there should be a systematic plan established for (a) the topics to be offered, (b) the audiences to be targeted, and (c) the impact of the training at a country level. Whilst there should remain scope for demand-led requests for training, having a clear training or dissemination plan will allow better monitoring of the effectiveness of this approach.	Ongoing.
The IMF should establish a plan for how to best assess the usefulness and quality of customised training conducted in-country.	IMF systems make this difficult to assess uniformly. Something to be explored further in phase 4.
The IMF-DFID logframe discussion (by end July 2019) should include: - Review targets for 2.2 and 2.2.1 to see whether it is appropriate to increase targets for 2019/20 to account for overachievements.	Done. - Targets were revised upwards for 2.2 and 2.2.1. - Will consider adding a sub-indicator for the phase 4 logframe.

- Consider adding a sub-indicator for 2.1 to capture training as a way of rolling out the work of MRLIC across the IMF.	

Output Title	Engagement by senior IMF policymakers on issues affecting LICs strengthened through this project.		
Output number:	3	Output Score:	A+
Impact weighting (%):	25%	Weighting revised since last AR?	No

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.	By March 2020, number of policy conferences drawing on outputs from the project: H (40) M (39) L (38)	40 (4 in 2019/20) *Met high target*
3.2 Results of the research papers produced reflected in IMF board discussions.	By March 2020: H (20) M (19) L (18)	20 (2 in 2019/20) *Met high target*
3.3 Results of the research papers produced reflected in IMF policy papers such as Staff Discussion Notes, policy memos to management, and the like	By March 2020: H (40) M (39) L (38)	41 (5 in 2019/20) *Met high target*

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

All three indicators met the high target. This output scores an A+.

Indicator 3.1: Conferences
Research from the MRLIC programme was presented and discussed at four conferences in the past year. The cumulative high target (40) has been met.

These conferences covered a wide range of topics within the MRLIC's areas of work. Two examples:
- Making the Case for Reform: A panel at the Annual Meetings discussed structural reforms. In particular, it discussed different views on reform priorities, how to implement reforms (including the importance of timing, distributional issues, and public narrative) and the political economy challenges.
- Sustainable development & debt: This conference, jointly organised by the IMF and the Government of Senegal in partnership with the United Nations (UN) and Cercle Des Économistes, engaged a wide group of stakeholders – including top-level officials such as the IMF's Managing Director, the UN Deputy Secretary General, along with Presidents of the Eight WAEMU[8] countries and the President of the Republic of Congo – in a dialogue on supporting sustainable development in sub-Saharan Africa.

Further summaries are in Annex B.

Indicator 3.2: IMF Board discussions
MRLIC research was reflected in two IMF Board papers this year. The cumulative high target (20) has been met.

There is scope for increasing the focus on this for the programme in the future. A large body of research has been built up and should be influencing the most senior discussions within the Fund (i.e. at Board level).

In May 2019 a Board paper reviewing the IMF's commitments in support of the SDGs included lots of work undertaken by the MRLIC programme in the past: the DIG and DIGNAR models

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[8] West African Economic and Monetary Union. Consisting of Benin, Burkina Faso, Côte D'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo.

being developed and applied to 70 countries; the work on economic inclusion in developing models to analyse distributional impact of policies, income inequality, research into the role of gender equality, gender budgeting, etc.; and work with vulnerable countries to integrate the risks posed by natural disasters and climate change into economic frameworks and policy analysis. This paper shows that there has been a large scaling up of IMF support for the 2030 development agenda, and that this has impacts in developing countries.[9] This has been supported by MRLIC research, and

In November 2019 the Board discussed a paper on [macroeconomic developments and prospects in low-income developing countries](#) (LIDCs). This is the IMF's annual analytical product on the macroeconomic developments and prospects of LIDCs. It featured a chapter drawing heavily on previous findings and country applications of the distributional impact of value-added taxes done by the MRLIC team.

Indicator 3.3: IMF policy papers
MRLIC research has been reflected in three further IMF publications and policy papers in the past year, bringing the total for the programme to 41 (meeting the high target).

These included two staff discussion notes on the [political costs of reform](#), and the [role of fiscal policy for women in the labour market](#). There was also a chapter in the IMF's flagship global publication, the [World Economic Outlook](#), in October 2019 on the role for structural reforms in reigniting growth in LICs and emerging market economies. This uses a new database on reforms produced by MRLIC and argues that a reform push in areas such as governance, domestic and external finance, trade, and labour and product markets could deliver sizable output gains. A comprehensive reform package might double the speed of convergence of the average emerging market and developing economy. Gains from reforms are higher when governance and access to credit are strong, and labour market informality is higher. This work is influencing IMF policy positions and, by extension, the advice to country governments. It has also been presented in outreach missions around the world, including to high-level public officials, academia, the private sector, and civil society.

Assess the [VfM](#) of this output compared to the proposition in the Business Case, based on performance over the past year

There are no VfM metrics specifically relating to this output in the Business Case. Nonetheless, similar to Output 2, this output is an important mechanism for ensuring VfM. On *efficiency*, the use of research products (policy analysis, tools and frameworks) to inform and influence IMF policy is a key way that the MRLIC programme delivers outcomes and has impact. The IMF is a major player in macroeconomic policymaking in developing countries, providing programmes and policy advice, by successfully influencing policy and practice (through Board papers, policy papers, etc.) MRLIC demonstrates both its *efficiency* and *effectiveness*.

Again, on *equity*, in previous years MRLIC work on gender inequality, income inequality and distributional analysis has been influential. Policy papers on how to operationalise gender and income inequality analysis in IMF work were largely influenced by MRLIC work.

Describe any changes to this output during the past year, and any planned changes as a result of this review.

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[9] The IMF support includes: (i) strengthening national tax systems; (ii) tackling large infrastructure gaps; (iii) promoting economic inclusion; (iv) the development of domestic financial markets; (v) intensifying engagement in fragile and conflict-affected states; (vi) improving economic statistics; (vii) expanding the financial safety net for developing countries; and (viii) addressing macroeconomic aspects of climate change.

There were no changes to the output or indicators in the past year. Following the previous Annual Review all targets were revised (upwards) to ensure they remained sufficiently stretching in the final year of phase 3.

A logframe for phase 4 is in development and will be finalised soon after this Annual Review is complete (end August 2020).

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

Recommendations:
- Ensure that MRLIC work maintains a strong pipeline of opportunities to be discussed at the highest levels in the IMF (Board, etc.).

The progress on last year's recommendations is set out in the table below.

Recommendation	Progress
Whilst there are numerous channels to influence IMF policy and positions, there has been a drop in the use of MRLIC analysis in discussions at the IMF Board level. The MRLIC team and DFID should discuss (a) why this is the case, (b) whether more senior buy-in would be beneficial and how to achieve this, and (c) set out a plan for ensuring that research is taking place in the right areas to influence at the highest levels of the Fund.	This year has seen good performance on MRLIC analysis being discussed at IMF Board level and appearing in IMF flagship publications.
The IMF-DFID logframe discussion (by end July 2019) should include: - Review all indicator targets to see whether it is appropriate to increase targets for 2019/20 to account for overachievements.	Done. All targets were revised upwards.

Output Title	IMF strengthens research capacity, by expanding the network of researchers and policy makers working on LIC macroeconomics		
Output number:	4	Output Score:	A+
Impact weighting (%):	15%	Weighting revised since last AR?	No

Indicator(s)	Milestone(s) for this review	Progress
4.1 Number of commissioned research papers from new researchers[10] produced on thematic areas.	By March 2020, number of commissioned research papers produced: H (32) M (29) L (26)	30 cumulative (4 in 2019/20) *Met medium target*
4.1.1 A data toolkit is a new dataset that is put in a format that is accessible and applicable to the work of IMF country teams and country authorities.	By March 2020, number of produced: H (8) M (7) L (6)	9 (0 in 2019/20)
4.2 Attendance of external researchers and policy makers at high-level policy conferences.	By March 2020, number of high-level policy conferences attended by external researchers: H (118) M (115) L (112)	124 (16 in 2019/20) *Exceeded high target*
4.3 Project Outputs disseminated in e-newsletter and up-dated public web-page and R4D (DFID web portal). Number of updates of e-newsletter and/or web-page:	By March 2020, number of up-dates: H (30) M (27) L (24)	30 (4 in 2019/20) *Met high target*

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

One indicator met the medium target. Two met the high target and one exceeded it. This output scores an A+.

Indicator 4.1: Commissioned papers from new researchers
Seven papers were commissioned from external researchers and delivered in the past year. Of these, two have been published in the *Open Economies Review* and five were commissioned as part of the "Macroeconomic Policy in Fragile States" book. A full list of the papers is in Annex A.

There have been challenges for the MRLIC programme in delivering relevant, high-quality, timely papers through commissioning external researchers. In discussion with DFID the model of engaging external researchers has largely shifted to focussing on adding value through contributions at conferences and events, rather than through commissioning papers. Nonetheless, the calibre of researchers delivering papers for the forthcoming book on macro in fragile states is impressive for the programme.

Whilst seven papers would meet the high target, this indicator is aimed at bringing <u>new</u> researchers into working on macroeconomic issues on LICs. The indicator specifically defines this (see footnote). Only four of the papers fit this definition (#2, 3, 5 & 7 in the list in Annex A) as the other authors had previously extensively worked on development, or macroeconomics, or both. Therefore, the indicator meets the medium cumulative target.

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[10] Researchers are "new" if they have not worked substantively in the field of LIC macroeconomics, especially with respect to sub-Saharan Africa. Researchers count as "new" even if they may have had one paper or so on LICs, if the vast bulk of their work has been on other topics, such as emerging market countries and advanced economies. This applies to graduate students, too.

Indicator 4.1.1: Data and toolkits
The MRLIC programme released no further toolkits this year. The target should have been revised after the previous Annual Review. Toolkits developed in previous years have been extensively used across IMF activities (see output 2).

Indicator 4.2: Attendance at conferences
The MRLIC team presented at 16 conferences in the past year. This brings the total for the programme to 124, exceeding the high target.

Some notable examples include presentations at the ASSA Annual Meeting (American Economic Association) and the Northwestern University Conference, as well as events at the Spring and Annual Meetings of the World Bank and IMF. This well-targeted dissemination at competitive, high-quality conferences is a good way of disseminating research work to policymakers and, particularly, academics.

A full list of the conferences attended this year is in Annex A.

Indicator 4.3: Project outputs disseminated
The four quarterly newsletters from the programme ensure that this indicator meets the high target (cumulatively 30). These newsletters are distributed to a broad network of over 1500 academics, policymakers, central bank staff, and government representatives. They highlight working papers, conferences, and other activities completed over previous quarter.

A forward look of upcoming outputs, events and presentations is provided to DFID quarterly. This allows for targeted dissemination to relevant DFID policy teams and to the UK delegation at the IMF.

Further dissemination of the research was achieved through:
- Blogs: this year on education in Nigeria, economic reform and elections, and structural reforms. These are widely disseminated to policymakers and researchers inside and outside the IMF.
- Articles on specialised websites such as VoxEU.

Assess the VfM of this output compared to the proposition in the Business Case, based on performance over the past year

There are no VfM metrics specifically relating to this output in the Business Case. On economy, over phase 3 the VfM of using commissioned authors to produce papers has been variable. It has proved challenging for MRLIC to incentivise authors to deliver original, relevant outputs. As the programme has developed it has changed how it engages external researchers. It has proven better VfM (*economy* and *effectiveness*) to use external researchers in a more selective way: commissioning few papers where they can add most value (e.g. for a book) and be original work, and at events, conferences and seminars to add to discussions around macro LIC issues.

Describe any changes to this output during the past year, and any planned changes as a result of this review.

There were no changes to the output or indicators in the past year. Following the previous Annual Review, the target for 4.2 was revised (upwards) to ensure it remained sufficiently stretching in the final year of phase 3.

A logframe for phase 4 is in development and will be finalised soon after this Annual Review is complete (end August 2020).

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

Recommendations:

- Continue to refine the process for engaging and commissioning work from external researchers in order to meet the programme target of expanding the field of economists working on macro in LICs.

The progress on last year's recommendations is set out in the table below.

Recommendation	Progress
As preparation for a future phase of work, IMF and MRLIC teams should discuss and agree the best way to engage external researchers and for them to add value to the programme.	External researchers can be used in two ways: (i) as part of the advisory committee, (ii) in discussions and presentations at events, conferences and seminars. MRLIC should still take opportunities to work with new, early-career researchers where they arise, and to commission work from established researchers where they can add most value (e.g. for the macro policy in fragile states book).
The IMF-DFID logframe discussion (by end July 2019) should include: - Review indicator 4.1 to ensure it is capturing the most important aspects of working with external researchers. - Review indicator 4.1.1 wording to consider whether all toolkits need to be "new". - Review targets for 4.2 to see whether it is appropriate to increase targets for 2019/20 to account for overachievement.	Done. - Decided to defer changing 4.1 to a new logframe for phase four. - Decided to defer changing 4.1.1 to a new logframe for phase four. - Revised target for 4.2 upwards.

D: RISK

Overview of risk management

The overall risk rating for this project remains Minor, with each risk category also rated as minor:

- External context: Most research is carried out at IMF headquarters using secondary datasets, so has limited exposure to context in LICs.
- Delivery: Established delivery systems are in place and have demonstrated high delivery over an extended period. Demand for MRLIC outputs remains high.
- Operational: Experienced management teams are in place at both DFID and IMF.
- Fiduciary: All funds are spent directly by the IMF and are subject to extensive IMF financial management controls.
- Reputational: Research activities and topics pose little or no reputational risk.
- Innovation: Research activities and topics are not subject to substantial innovation risks.
- Safeguarding: Programme activities rarely, if ever, involve contact with vulnerable persons, and external researchers are managed in accordance with IMF procedures.

A Central Assurance Assessment (CAA) (of the IMF as a whole) was conducted by DFID in March 2019 which confirmed the IMF's position as a low risk partner for DFID. This CAA also covered enhanced areas of due diligence including safeguarding procedures. A light touch due diligence was conducted in November 2019 ahead of commencement of Phase 4. This was largely drawn from the CAA, and it was only necessary to assess any programme-specific differences to the IMF's standard operating procedures. There is little that is different about how the MRLIC programme operates than how the IMF operates as a whole. Hence the CAA findings also hold true for the MRLIC programme.

The overall risk remains minor, as all residual risks are now reduced to minor with the maturity of the programme. The risk register has been updated as part of the response to covid-19. The recommendations and lessons are set out at the end of Section A. The risks include: inability to publish work already done on covid-19; IMF missions remaining suspended for a long time and research not being able to influence operations; country authorities focussing on the management of the public health crisis and not on macroeconomic implications; and incorporating new, important research topics in MRLIC.

The previous DFID Annual Review raised a new risk around changing accounting processes within the IMF budget office. MRLIC investigated the impact of this and found that it would be a negligible change to per-unit staffing costs.

Update on partnership principles
Partnership principles are not applicable. MRLIC is a global research programme managed by the IMF. No funding is passed to country governments or similar bodies. All funds are held and managed by the IMF and are subject to strict financial controls under IMF policies and in accordance with the rules applied to donor sub-accounts, in this case the United Kingdom Selected Fund Activities (SFA) sub-account. These rules are set at Board level and are not subject to negotiation by the team.

E: PROGRAMME MANAGEMENT: DELIVERY, COMMERCIAL & FINANCIAL PERFORMANCE

Summarise the performance of partners and DFID, notably on commercial and financial issues, and including consideration of VfM measures of economy and efficiency.

This programme continues to be highly cost effective. The programme adheres to solid governance on the procurement process together with the high-quality work by the team. The programme team strictly follow all Fund guidelines for hiring, travel, and conferences. All contractual employees undergo a competitive process before being hired. Outputs are produced under firm timeframes and must meet Fund requirements for publication. The quality of papers is further evaluated when they are submitted to peer-reviewed publications.

Direct project management costs represent approximately one percent of the total budget. If we include the Trust Fund management fee, program management costs are around eight percent. This means that most of the funds available to this project have been spent on producing high quality research by IMF staff and external researchers.

This year, MRLIC has again exceeded the vast majority of its "high" output targets. High targets are calibrated to be above DFID expectations for performance, as per the arguments set out in the approved Business Case and Addendum.
- The programme shifted attention to use of research assistants (RAs), rather than costly visiting academics, which cut salary costs substantially.
- The initial investment in the visiting academics was worthwhile as the programme now has a good network to draw on.
- Cost sharing has become an increasing feature, with other IMF departments willing to subsidise travel costs on overseas missions, and conference costs being shared with other organisations.
- Efficient use is being made of internal economists.

As of April 2020, $20.8 million has been drawn down 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 eight years of the project:

Project Expenditures in Years 1-8

Activity	Total, Years 1-8
HQ led missions including entire mission team	$6,801,645
Short-term Advisors - CD delivery	$525,562
Research HQ based/Visiting Scholars	$6,894,300
Seminars & Study Tours	$1,671,151
Project Backstopping	$2,966,278
Project Management	$226,595
Exceptional Expenses	$335,282
Language Services	$1,348
Trust Fund Fee	$1,359,551
Total	**$20,781,712**

Throughout this programme the IMF has been extremely accurate and reliable in its cost estimates. For example, IMF salary increases have happened without more resources being required to complete activities. Any such increases have been predictable, so costs have been straightforward to manage. DFID does not foresee any changes in cost structures due to exchange rates.

The programme has benefited from strong continuity in its management, enabling lessons to be learned over time. The MRLIC programme director has been involved with the project since its inception, serving first as the lead for research on diversification, and now as the division chief of Development Macroeconomics Division of the Research Department. He remains the main point of contact between the IMF and DFID.

Date of last narrative financial report	May 2020	Date of last audited annual statement	October 2019[11]

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[11] Included as an annex of the IMF Annual Report. Available on the IMF Partners Connect website

Annex A – Publications and conferences

Output Indicator 1.1 – Working Papers

Modelling and understanding policy choices
1. Endegnanew, Tessema, (2019), Public Investment in Bolivia: Prospects and Implications, WP 19/151.
2. Gurara, et al. (2019), On the Capacity to Absorb Public Investment: How Much is Too Much?, WP 20/48.
3. An, Kangur, Papageorgiou, (2019), On the Substitution of Private and Public Capital in Production, WP 19/232.
4. Moldovan, Yang, Zanna, (2019), Optimal Fiscal Spending and Reserve Accumulation Policies Under Volatile Aid, WP 19/126.
5. Debt Sustainability, Investment, and Growth with Segmented Labour Markets (forthcoming)

Understanding macro-financial linkages
6. Opening Up: Capital Flows and Financial Sector Dynamics in Low-Income Developing Countries (forthcoming)

Building resilience
7. Cantelmo, Melina, Papageorgiou, (2019), Macroeconomic Outcomes in Disaster-Prone Countries, WP 19/217.

Promoting structural change and institutional development
8. Alesina, et al. (2020), Structural Reforms and Elections: Evidence from a World-Wide New Dataset, NBER Working Paper 26720.
9. Gokmen, et al., (2020), Policies in Hard Times: Assessing the Impact of Financial Crises on Structural Reforms, (forthcoming as an IMF Working Paper).
10. Giri, Quayyum, Yin, (2019), Understanding Export Diversification: Key Drivers and Policy Implications, WP 19/105.
11. Agou, et al., (2019), Sustainable Development, Sustainable Debt, IMF Conference Paper.

Enhancing inclusion
12. Malta, et al., (2019), Informality and Gender Gaps Going Hand in Hand, WP 19/112.
13. Malta, Leyva, Tavares, (2019), A Quantitative Analysis of Female Employment in Senegal, WP 19/241.
14. Melina, Selim, Verdugo-Yepes, (2019), Macro-Fiscal Gains from Anti-Corruption Reforms in the Republic of Congo, WP 19/121.
15. Naceur, Chami, Trabelsi, (2020), Do Remittances Enhance Financial Inclusion in LMICs and in Fragile States?, WP 20/66.
16. Adam, Buffie, (2020), The Minimum Wage Puzzle in Less Developed Countries: Reconciling Theory and Evidence, WP 20/23.

Output indicator 1.2 – Peer-reviewed published papers

Modelling and understanding policy choices
1. Rubio, Unsal, (2020), Macroprudential policy under incomplete information, *The European Journal of Finance*, vol. 26:7-8, pp. 616-639.
2. Furceri, Zdzienicka, (2020), Twin Deficits in Developing Economies, *Open Economies Review*, vol. 31:1, pp. 1-23.
3. Atolia, et al., (2019), Investing in public infrastructure: roads or schools?, *Macroeconomic Dynamics*, pp. 1-30.
4. An, Kangor, Papageorgiou, (2019), On the substitution of private and public capital in production, *European Economic Review*, vol. 118, pp. 296-311.

Understanding macro-financial linkages

5. Gurara, Presbitero, Sarmiento, (2020), Borrowing costs and the role of multilateral development banks: Evidence from cross-border syndicated bank lending, *Journal of International Money and Finance*, vol. 100.
6. Broccolini et al., (2020), Mobilization Effects of Multilateral Development Banks, *The World Bank Economic Review*.
7. Agarwal, Duttagupta, Presbitero, (2019), Commodity prices and bank lending, *Economic Inquiry*, vol. 58, pp. 953-979.

Promoting structural change and institutional development

8. Atolia, et al., (2020), Rethinking development policy: What remains of structural transformation?, *World Development*, vol. 128.

Enhancing inclusion

9. Furceri, Loungani, Ostry, (2019), The Aggregate and Distributional Effects of Financial Globalization: Evidence from Macro and Sectoral Data, *Journal of Money, Credit and Banking*, vol. 51:1, pp. 163-198.
10. Dabla-Norris, et al., (2020), Distinguishing constraints on financial inclusion and their impact on GDP, TFP, and the distribution of income, *Journal of Monetary Economics*.
11. Melina, Poplawski-Ribeiro, (2020), Macroeconomic impacts of non-resource revenue mobilization in CEMAC, *Applied Economics Letters*.
12. Henn, et al., (2020), Export Quality in Advanced and Developing Economies: Evidence from a New Dataset, *IMF Economic Review*, vol. 68, pp. 421-451. Open access version here.

Output indicator 4.1 – Commissioned papers

1. Marjit, Kar, (2019), International Capital Flows, Land Conversion and Wage Inequality in Poor Countries, *Open Economies Review*, vol. 30, pp. 933-945.
2. Madhou, Sewak, (2019), Examining Structural Unemployment in Sub-Saharan Africa: Empirical Evidence from Unobserved Components, *Open Economies Review*, vol. 30, pp. 895-904.
3. Acemoglu, Robinson, Building Inclusive States: A Simple Framework, *Oxford University Press*, forthcoming.
4. Collier, Transition Programs: A Theory of the Scaffolding Needed to Build out of Fragility, *Oxford University Press*, forthcoming.
5. Riise, Building Governance Capacity in Areas of Limited Statehood, *Oxford University Press*, forthcoming.
6. Adam, Wilson, Monetary and Exchange Rate Policy in Fragile States, *Oxford University Press*, forthcoming.
7. Elbadawi, Martinez, Soto, Exports, Exchange Regimes, and Fragility, *Oxford University Press*, forthcoming.[12]

Output indicator 4.2 – Conferences

1. IMF Spring Meetings 2019, April 10, 2019. Paper presented: "Understanding Export Diversification: Key Drivers and Policy Implications".
2. IMF Annual Meetings 2019, October 17, 2019. Seminar featuring findings from the policy paper: Review of Implementation of IMF Commitments in Support of the 2030 Agenda for Sustainable Development.
3. Conference on Central Bank Communications: From Mystery to Transparency, May 23-24, 2019. Contributions based on: "Monetary Policy Frameworks: An Index and New Evidence".

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[12] Working paper version here.

4. Conference on Monetary Policy Strategy, Tools, and Communication Practices (A Fed Listens Event), June 4-5, 2019. Contributions based on: "Monetary Policy Frameworks: An Index and New Evidence".
5. Third Bank Negara Malaysia-IMF Seminar on Comprehensive Approaches to Monetary and Financial Policy Making in ASEAN 5 Countries, July 17, 2019. Presentation based on: "Monetary Policy Frameworks: An Index and New Evidence".
6. World Forum on Climate Justice, June 20, 2019. Paper presented: "Building Resilience in Developing Countries Vulnerable to Large Natural Disasters".
7. Conference of the International Association for Applied Econometrics (IAAE), June 25-28, 2019. Paper presented: "In Search of Information: Use of Google Trends' Data to Narrow Information Gaps for Low-income Developing Countries".
8. Conference of the American Economic Association (AEA) in San Diego, on January 3-5, 2020. Paper presented: "In Search of Information: Use of Google Trends' Data to Narrow Information Gaps for Low-income Developing Countries".
9. Conference of the American Economic Association (AEA) in San Diego, on January 3-5, 2020. Paper presented: "Financial Access Under the Microscope".
10. Conference of NEUDC in Evanston, on October 5-6, 2019. Paper presented: "Financial Access Under the Microscope".
11. Presentation at Graduate Institute of Geneva, November 18, 2019. Paper presented: "Financial Deepening, Terms of Trade Shocks, and Growth Volatility in Low-Income Countries".
12. Presentation at the Africa Training Institute in Mauritius. Paper presented: "Women in the Labour Force: The Role of Fiscal Policies".
13. North American Summer Meeting of the Econometric Society 2019 (Seattle, Washington). Xin Tang presented "The Welfare Implications of Fiscal Consolidations in Low-income Countries."
14. The 2019 Quantitative Society for Pensions and Saving Workshop (Logan, Utah). Marina Mendes Tavares presented "The Welfare Implications of Fiscal Consolidations in Low-income Countries."
15. Departmental seminar at Gettysburg College. Xin Tang taught a one-day course attended by faculty members and undergraduate students, which covered the IMF's efforts to inclusive growth, the toolkit's analytical framework and some practical applications.
16. "Boosting Human Capital, Accelerating Development, and Lowering Inequality in Sierra Leone," presented to the authorities during the Article IV and Second ECF Review Mission to Sierra Leone, in November 2019.

Annex B – Further summaries

Output Indicator 1.1 – Working Papers

- Findings that, contrary to the standard view that crises offer an opportunity to implement tough reforms, crises are not associated with changes to structural reforms and, in autocracies, liberalisation is reduced. (Alesina et al.).
- Investigating the impact of narrowing gender education gaps on gender gaps in employment in Senegal. Finds that: (i) the increase in years of education explains up to 44% of the increased female-to-male employment ratio and (ii) the rest is explained by falling discrimination against women in the labour market. (Malta, Leyva, Tavares).
- Showing a U-shaped relationship between remittance flows and financial inclusion. At low levels of remittances, they substitute for formal channels and reduce financial inclusion. In contrast, when remittances are high (remittances-to-GDP ratio above 13%) they tend to complement formal channels and enhance financial inclusion. (Naceur, Chami, Trabelsi).

Output indicator 1.2 – Peer-reviewed published papers

- Using a newly developed dataset to show that private and public investments in capital are not perfect substitutes, especially in LICs. (An, Kangur, Papageorgiou).
- Studying the mobilising effects of loans from Multilateral Development Banks (MDBs) finds evidence of positive and significant effects of multilateral lending on the size of bank inflows (i.e. there is crowding-in of private capital). The effects last for up to three years and are not offset by a fall in bond financing. The results indicate that MDBs mobilise about seven dollars in bank credit (over three years) for each dollar invested. (Broccolini et al.).

Output indicator 3.1 – High level conferences

- [Macroeconomics & Labour in the Age of Artificial Intelligence](): Jointly organised with the Institute of New Economic Thinking, this workshop brought together leading academics and policymakers. A panel with Kristalina Georgieva (Managing Director, IMF), Joseph Stiglitz (Columbia University), and Deborah Greenfield (Deputy Director, International Labour Organization) discussed the impact of artificial intelligence on jobs, employment and distribution.
- Fostering Diversification to Escape the Middle-Income Trap: This conference was held in Kasane, Botswana in February 2020. It was jointly organised by AFRITAC South, Bank of Botswana, Delegation of the European Union to Botswana, the Southern African Development Community (SADC) and the IMF. It brought together senior Botswana government officials with representatives from countries that have successfully diversified their economies[13], academia, regional institutions and senior IMF staff (Deputy Managing Director, Deputy Director). Discussions focussed on country experiences in advancing diversification.

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[13] Chile, Costa Rica, Estonia, South Korea and Mauritius.

Macroeconomic Research in Low-Income Countries
A DFID/IMF Research Partnership

Eighth Year Annual Report to DFID
(for period April 2019—March 2020)

Prepared by the Staff of the Research (Hites Ahir, Futoshi Narita, Chris Papageorgiou) and Strategy, Policy and Review (Xin Tang, Carine Meyimdjui, Roland Kpodar) Departments

June 30, 2020

1. PROGRAM DESCRIPTION

"Macroeconomic Research in Low-Income Countries" represents a strategic research partnership between DFID and the IMF, with the intention of (a) enhancing the generation of high-quality research on key macroeconomic 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 pulling power to expand the network of macroeconomic researchers working on LICs; and (d) achieving this as cost-effectively as possible. The project began in March 2012 and will conclude in March 2023.

Our research agenda encompasses key components of the macroeconomic challenges facing LICs in the current global environment. We attempt to exploit the comparative advantage of the IMF, focusing on core macroeconomic challenges and deploying modern analytic tools, that have proven useful in emerging markets and developed countries, such as the application of inflation targeting. The IMF focuses 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 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 project has focused on five core areas, including new topics that will be developed within the third phase of the project:

(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 disaster, 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 aimed at high-level policymakers in LICs and at the IMF. To further maximize the policy impact of the project's research outputs, all papers are freely shared with DFID and external policy makers through DFID's research portal and a dedicated project website maintained by the IMF. In addition to encouraging uptake of the work by the country authorities as well as the IMF, other crucial components of the IMF- DFID partnership include designing frameworks to support IMF policy for LICs, presentations at high-level policy conferences, commissioned papers, quarterly e-newsletters to a broad network of LIC researchers and policy makers, and project-financed conferences.

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 2023

Countries Covered:

The project covers the countries listed in Table 1.

Table 1
Developing Countries and Their GNI per capita[1]

Country	2011 GNI per capita (US $)	Country	2011 GNI per capita (US $)
Afghanistan	410 [2]	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 [2]
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 [2]	São Tomé and Principe	1360
Dominica	7090	Senegal	1070
Eritrea	430	Sierra Leone	340
Ethiopia	400	Solomon Islands	1110
Gambia, The	610	Somalia	NA [2]
Georgia	2860 [3]	South Sudan	984 [2]
Ghana	1410	St. Lucia	6680
Grenada	7220	St.Vincent and the Grenadines	6100
Guinea	440	Sudan	1300
Guinea-Bissau	600	Tajikistan	870
Guyana	2900 [2]	Tanzania	540
Haiti	700	Timor-Leste	2730 [2]
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 [4]		

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/ Atlas method.
2/ Data for 2011 are not available. 2010 data given for Afghanistan, Guyana, Sudan, and 2009 data for Djibouti and South Sudan.
3/ Georgia graduation will occur at the expiration of the current arrangement in Apr. 2014.
4/ Zimbabwe is not PRGT-eligible due to its removal from the PRGT-eligibility list by a Board decision in connection with its overdue obligations to the PRGT. It is expected to become PRGT-eligible if the remedial measure were lifted.

[1] The countries included in this table are those that, at the start of this project in 2013, were eligible for IMF lending under the Poverty Reduction and Growth Trust (PRGT), as well as countries that had recently graduated (e.g., Bolivia and Mongolia) but continued to face policy challenges similar to those in the PRGT-eligible countries.

2. OVERVIEW OF THE YEAR

Progress and Achievements:

The project kept up the very strong performance in the eighth year—the concluding year of Phase 3—of the partnership; and once again, we have met or exceeded the "high" thresholds for all the targets outlined in the log-frame. The analytical work continues to proceed forward along the agenda in all five core research areas. The project's outcomes have successfully reached senior IMF staff, IMF Executive Board members, policymakers in LICs, and in the meantime, drawing increasing attention from researchers dedicated to macro-critical issues in LICs. Many of the research outcomes stand against the test of time by maturing into the regular analytical toolbox of desk economists and country authorities, being integrated into the Fund's structural curriculum, as well as being published in leading peer-reviewed academic journals.

The project again receives praise from IMF management. The Fund's Deputy Managing Director—Tao Zhang—who oversees the IMF's work LICs said:

> "As Covid-19 takes a toll on advanced and emerging economies, it is important that we continue to focus on low-income economies as well. We have a responsibility to stand by them and provide them with timely analysis of the current crisis. The DFID-IMF partnership will play a critical role in fulfilling this responsibility during this difficult time."

Also, the Fund's new Deputy Managing Director overseeing the area departments, Antoinette Sayeh, noted:

> "Fostering inclusive growth and sustainable development have been at the center of our engagement with LICs, through the Fund's surveillance, program, and capacity development work. The IMF-DFID project has been instrumental in this endeavor by providing much needed support to country teams in the formulation of sound policy advice to our poorest member countries. In the period ahead, I look forward to the contributions of the project in facilitating the delivery of our mandate, more importantly as the Covid-19 pandemic is threatening to wipe out the hard-won development gains LICs have achieved in recent years."

In what follows, we provide some of the highlights of the team's progress in each of the five designated research areas. In the area of modeling and understanding policy choices, the team, working with the Government of Senegal and the United Nations, contributed to put together a high-level conference on Sustainable Development, Sustainable Debt: Finding the Right Balance, amid a challenging time for LICs relying on external finance. The conference tackles topics ranging from how best infrastructure spending can be financed to ways of strengthening partnership among different stakeholders. The conference featured top-level officials including the IMF's Managing Director—Kristalina Georgieva, United Nations' Deputy Secretary General—Amina Mohammed, along with Presidents of the Eight WAEMU countries (Benin, Burkina Faso, Côte D'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo) and the President of the Republic of Congo.

Internally, it has truly been a marvelous year for the Debt Investment and Growth (DIG) model family. The model was used in the analysis of the macroeconomic impacts of public investment in the Article IV consultations for Madagascar and Cameroon. The version featuring natural resources—the DIGNAR model—was applied to four countries (Mozambique, Gabon, Guyana and Republic of Congo) in surveillance work on issues from the optimal management of liquid natural gas to the macro-fiscal impacts of weak governance. Marching forward, the veteran family is seeing its latest member—the DIG-Labor model with richer structure in the labor markets—introduced in an IMF working paper. Another veteran analytical tool, the Forecasting and Policy Analysis System (FPAS) continues to influence our surveillance work as well: this year in Honduras, Malawi and Zambia. An important initiative to expand the influence of FPAS this year is the launch of the online course Model-

based Monetary Policy Analysis and Forecasting (MPAF.x), which aims at introducing the core concept to country authorities, researchers, and others interested in the tool.

The work on understanding macro-financial linkages carries the momentum in previous years. The result is that three papers emerged from the team's continued efforts in studying how multilateral development banks interact with the finance architecture of low-income countries got published in important academic journals: Journal of International Money and Finance, The World Bank Economic Review and Economic Inquiry.

It has been an exciting year for our staff working on investigating the issue of structural change and institutional development. The accomplishment is overarching, which includes new dataset, analytical exploration, inspired discussions at the IMF Executive Board, contributions to Fund's flagship publications, and so on. To begin with, the team's work on the political economy of structural reforms featured in the high-profile panel discussion Making the Case for Reform during the 2019 IMF-World Bank Annual Meetings. The then First Deputy Managing Director—David Lipton delivered the opening remarks, with the panel including the Minister of Finance of Ireland—Paschal Donohoe, the Minister of Chile—Felipe Larraín, renowned Harvard University professor—Alberto Alesina, Chief economics commentator at the Financial Times—Martin Wolf, and others. The political economy of structural reforms was also extensively discussed in the Staff Discussion Note (SDN): The Political Costs of Reforms: Fear or Reality? Meanwhile, the team's findings on the gains in growth over the medium-term from structural reforms in governance, domestic and external finance, trade, and labor and product markets were incorporated in the analytical chapter of the October 2019—World Economic Outlook, the flagship publication of the Fund with world-wide reputation.

Another stream of work by the team in this topic is how low-income countries can achieve sustained economic growth through diversification, which also sees a rich harvest. In February 2020, at a high-level conference, the IMF and DFID together with AFRITAC South, Bank of Botswana, Delegation of the European Union to Botswana, and the Southern African Development Community (SADC) held a conference on Fostering Diversification to Escape the Middle-Income Trap in Botswana. The conference was attended by senior officials including the IMF's Deputy Managing Director—Tao Zhang and the Governor of Bank of Botswana—Moses Pelaelo, both delivered the opening remarks. In the 2019 Spring Meetings of the IMF-World Bank, another set of research finding by the team were presented at the analytical corner on Understanding Export Diversification: Key Drivers and Policy Implications. In addition, the diversification toolkit developed by the team in previous years, provided analytical support to this year's Article IV consultations for Nigeria and Uganda.

The team's work in enhancing inclusion has also entered a mature stage as Phase III ends. First of all, as we are entering the fifth year since IMF committed to supporting developing countries in pursuing the 2030 agenda for sustained development, the team prepared a policy paper reviewing the implementation of a number of initiatives taken since then; the paper was extensively discussed by the IMF Executive Board and in a series of outreach missions was presented to a wide variety of audiences. This year's LIDC report—the Fund's annual analytical work on the macroeconomic developments and prospects of LIDCs—featured a chapter that draws heavily on previous findings and country applications of the distributional impact of value-added taxes done by the team. The updated inequality toolkit that backs the analyses was finalized and distributed both internally and externally; it has also been integrated into the Fund's structural curriculum of macro-structural training, offered to staff every year. It is worth noting that another piece of our work on the impact of financial inclusion has been published by the Journal of Monetary Economics, the top journal in the field of macroeconomics, proving the strong scientific value of our research output.

The team's work on gender equality also achieves great success. Years of dedicated efforts by the team on gender budgeting and the macroeconomic perspective of gender equality were collected together in an SDN on Women in the Labor Force: The Role of Fiscal Policies, marking an important milestone of an ever-evolving research agenda. The SDN was launched by the IMF Managing Director at the Global Women's Forum on February 16th in Dubai. Besides the SDN, the team's work was also

welcomed by country teams and authorities during Article IV consultations (Laos, Nigeria, Sierra Leone and Kenya). Last but certainly not the least, are the several working papers detailing the analytical framework forming the pillar of this work, which in no doubt, would stimulate series of work down the road.

Finally, in the area of building resilience, the team has made a key step in laying out the analytical foundation for future work in gauging the macroeconomic impacts of natural disaster. It is summarized in a working paper on Macroeconomic Outcomes in Disaster-Prone Countries, which sets up an analytical framework in which the macroeconomic and welfare consequences of natural disaster shocks in disaster-prone countries can be evaluated.

Beyond the progress the team established in the five core areas, several products also showcase how the Fund embraces the digital era. In March, the IMF and the Institute of New Economic Thinking organized a high-level workshop on Macroeconomics in the Age of Artificial Intelligence, which included a panel with the IMF's Managing Director—Kristalina Georgieva, Deputy Director of the International Labor Organization—Deborah Greenfield, Nobel Laureate—Joseph Stiglitz, and Financial Times's European Economics Commentator—Martin Sandbu, discussed how the most recent wave of technology evolution interact with the macroeconomy. In another event, the team's work on how Google search data can be used to study low-income country issues was interviewed during the 2020 Annual Meeting of the Allied Social Science Associations, the world's leading academic event of social sciences.

Following last year's practice, this year we continue to collaborate with IMF Library to gauge the research impact of our projects by conducting publication bibliometric analysis. Citations are compiled from four sources: Microsoft Academic, Lens.org and RePEc's CitEc. The metrics reveal that out of 175 intellectual entities, there is a total of more than 1,403 citations (up from 800 citations reported last year). The analysis shows that 80% of our publications have been cited, with an average citation of 11 per article cited. As a benchmark of comparison, the most widely cited journal in economics, The Quarterly Journal of Economics, has a 5-year impact factor of 14. Three quarters of the citations are non-self with no IMF or DFID affiliation. Several articles were also widely circulated in social media and other platforms. For instance, the twitter activity over The Aggregate and Distributional Effects of Financial Globalization started with praise from Dani Rodrik—professor of economics at Harvard, which was retweeted by 154 users with an upper bound of 1,769,461 followers. Also, the total number of downloads of IMF working papers produced by this project has exceeded 110,000 (up from 75,000 reported last year)—roughly speaking, 900+ downloads per paper.[1]

We have also incorporated many of the valuable feedbacks from last year's review into our work program as well. First, we have revised and agreed upon logframe indicators and targets for the final year of this phase of the program. We are happy to report that despite the upward revision of all major targets and the decrease in funding for Phase 3, the team still managed to meet or surpass the "high" standards in most of the areas.

Second, it is recommended that synthesis products summarizing the key themes of research from the MRLIC program be disseminated. Following the advice, our experts in each area have produced synthesis products in the topics of Debt-Investment-Growth Nexus, Income Inequality, Gender Equality, and Economic Diversification. Unfortunately, the dissemination of these articles and the stocktaking conference were interrupted by the global pandemic of COVID-19, which caused many other disruptions that will be discussed shortly after.

Third, on the recommendation of crafting systematic plan for delivering training on toolkits and models, several important initiatives have been taken. In 2018, the Fund has initialized a pilot structural curriculum on macro-structural reforms targeting desk economists and reviewers with practical tools to analyze macro-critical structural gaps and reforms. The team was involved in three of the clinics:

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[1] The citation analyses were conducted by the IMF Library team (Linda Venable), based on Dimension.ai. The number of downloads of IMF working papers was collected by the IMF's Communication Department.

labor and product market reforms, distributional impacts of policies and reforms, and diversification, structural transformation and reforms in developing countries. All three clinics have been offered in the first two years of the training, and based on the positive feedbacks from attendees, they would be offered consistently and coherently in such systematic format in the future. For the external audiences, we have created the online course Model-based Monetary Policy Analysis and Forecasting (MPAF.x) for country authorities, which we should mention is also freely available on edX to general audience. Building on the lessons of these initiatives, we will work on converting more of the team's core research areas into training courses and workshops in appropriate formats.

As we are entering the Phase IV of the collaboration, the project has indeed traveled through a long mileage since 2012 where everything started. As a result of concerted efforts by many researchers involved, the project has pushed forward the frontier of research on macroeconomic policymaking in LICs. In Phase IV, we will leverage on the momentum in our five existing areas of competence to deepen our understanding of macro-critical issues in LICs and to integrate our new findings to Fund's surveillance and program work. We will also expand our stretch to cover on emerging critical issues, for instance the current global pandemic of COVID-19.

The recent approval of Phase IV of the project was acknowledged by the IMF's Chief Economist—Gita Gopinath:

> "I am very excited to hear that the three-year extension of our DFID-IMF research partnership on low-income countries (LICs) has been approved. This partnership will help us to continue our work on LICs. On behalf of my colleagues at the IMF, I wanted to thank the U.K.'s Department for International Development for entrusting us to carry out this important work."

The Director of the IMF Strategy, Policy, and Review (SPR) Department, Martin Mühleisen also acknowledged the work done under the IMF-DFID partnership and the approval of Phase IV of the project:

> "The IMF-DFID project continued to provide strong analytical underpinning to the Fund's policy advice for low income countries in key policy areas, including inequality, gender, climate change, fiscal and monetary policy. LICs are facing daunting development challenges amid the Covid-19 pandemic, and the need for tailored policy advice is even stronger. The IMF-DFID project will play an important role in that regard. I thank DFID for its tremendous support with the extension of the project to its fourth phase."

Challenges and Disappointments:

The current crisis—COVID-19—has affected our program in two ways. First, since mid-February 2020, several of our output targets were affected as the crisis spread around the world. For instance, non-COVID-19 related publication has been under freeze by the IMF's Communication Department. This had a direct impact on working papers. Also, a high-level conference on Hidden Dimensions of Poverty: Description, Measurement, and Action that was schedule for March 19, 2020 was cancelled. This is a conference where all the work was already put in. Similarly, the release of a book on fragile states was also delayed. There was also a similar impact on other outputs as well.

Second, a challenge moving forward is how the program should adapt to the global pandemic of COVID-19. The foremost interruption we foresee as of now is the suspension of IMF missions and countries' shift in their focus toward public health crisis management. A lot of our staff had to refocus their time on COVID-19 related emergent requests, which interrupts projects underway or being concluded. In addition, as country authorities are also likely to shift their future focus to manage the public health crisis, new research topics and needs emerged which was not envisioned in the initial DFID IV proposal. How these emerging requests could be aligned with DFID area work has been

explored. While these challenges demonstrate further the importance of engaging in LICs and hence the value of the program, in the short-term, there would be inevitable transitional costs.

3. LOG-FRAME OUTPUTS

This research project has four main output 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.

Table 2 provides a summary of the research outputs for the eight years of this project. We have met, and in some cases exceeded, the "high" target for all outputs for year 8 of the program. It is important to note that the targets for this year were raised, the current crisis—COVID-19 had a negative impact in meeting the targets for this year, and there was a drop in funding for Phase III.

Table 2
Summary of the research outputs[2]

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	Total	OLD Output Targets for End of Year 8		NEW Output Targets for End of Year 8	
Working Papers	13	17	10	16	19	19	19	16	129	H	120	H	128
										M	108	M	124
										L	96	L	120
Published Papers	1	6	9	8	13	11	10	12	70	H	58	H	65
										M	52	M	63
										L	47	L	61
Books	0	0	0	0	2	0	0	1	3	H	2	T	3
										M	2		
										L	2		
Uptake by IMF Teams	9	12	13	14	16	21	13	18	116	H	103	H	107
										M	92	M	104
										L	82	L	102
Uptake by Authorities	1	2	4	2	7	13	9	8	46	H	25	H	46
										M	23	M	43
										L	20	L	40
Courses offered to country authorities	.	.	.	.	.	9	7	4	20	H	10	H	20
										M	9	M	18
										L	8	L	17
High-Level Policy Conferences attended by senior IMF staff	6	4	2	1	9	8	6	4	40	H	34	H	40
										M	31	M	39
										L	28	L	38
Results of the research papers produced reflected in IMF board discussions.	3	3	2	1	2	5	2	2	20	H	17	H	20
										M	15	M	19
										L	14	L	18
Results of the research papers produced reflected in IMF policy papers such as SDN, policy memos to management, and the like	4	4	3	2	6	10	7	5	41	H	31	H	40
										M	28	M	39
										L	25	L	38
Commissioned Papers	0	13	0	0	7	5	1	6	32	H	32	H	32
										M	29	M	29
										L	26	L	26
Toolkits	0	0	1	1	3	2	2	0	9	H	8	H	8
										M	7	M	7
										L	6	L	6
External researchers at high-level policy conferences	6	5	5	15	20	35	22	16	124	H	81	H	118
										M	73	M	115
										L	65	L	112
Outputs disseminated in e-newsletter and public web page	2	4	4	4	4	4	4	4	30	H	30	H	30
										M	27	M	27
										L	24	L	24
Thematic areas of IMF policy influenced and made LIC-specific	3	2	0	0	3	2	1	1	12	H	11	H	12
										M	10	M	11
										L	9	L	10

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[2] The targets for this year were revised upward. Column "OLD" displays the old targets for this year, and the column "NEW" displays the revised targets for this year.

Log-frame Outputs

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

Output 1.1 – Working papers

This year, we completed 16 working papers, bringing the total to 129 over eight years.

Topic 1. Modelling and understanding policy choices

1. Public Investment in Bolivia: Prospects and Implications
2. On the Capacity to Absorb Public Investment: How Much is Too Much?
3. On the Substitution of Private and Public Capital in Production
4. Optimal Fiscal Spending and Reserve Accumulation Policies Under Volatile Aid
5. Debt Sustainability, Investment, and Growth with Segmented Labor Markets (forthcoming)

Topic 2. Understanding macro-financial linkages

6. Opening Up: Capital Flows and Financial Sector Dynamics in Low-Income Developing Countries (forthcoming)

Topic 3. Building resilience

7. Macroeconomic Outcomes in Disaster-Prone Countries

Topic 4. Promoting structural change and institutional development

8. Structural Reforms and Elections: Evidence from a World-Wide New Dataset
9. Policies in Hard Times: Assessing the Impact of Financial Crises on Structural Reforms
10. Understanding Export Diversification: Key Drivers and Policy Implications
11. Sustainable Development, Sustainable Debt

Topic 5. Enhancing inclusion

12. Informality and Gender Gaps Going Hand in Hand
13. A Quantitative Analysis of Female Employment in Senegal
14. Macro-Fiscal Gains from Anti-Corruption Reforms in the Republic of Congo
15. Do Remittances Enhance Financial Inclusion in LMICs and in Fragile States?
16. The Minimum Wage Puzzle in Less Developed Countries: Reconciling Theory and Evidence

Output 1.2 - Published Papers

We published 12 papers in peer-reviewed journals this year.

Topic 1. Modelling and understanding policy choices

1. [Macroprudential policy under incomplete information](#)
   The European Journal of Finance
2. [Twin Deficits in Developing Economies](#)
   Open Economies Review
3. [Investing in public infrastructure: roads or schools?](#)
   Macroeconomic Dynamics
4. [On the substitution of private and public capital in production](#)
   European Economic Review

Topic 2. Understanding macro-financial linkages

5. [Borrowing costs and the role of multilateral development banks: Evidence from cross-border syndicated bank lending](#)
   Journal of International Money and Finance
6. [Mobilization Effects of Multilateral Development Banks](#)
   The World Bank Economic Review
7. [Commodity prices and bank lending](#)
   Economic Inquiry

Topic 3. Building resilience

We have no publication under this topic this year.

Topic 4. Promoting structural change and institutional development

8. [Rethinking development policy: What remains of structural transformation?](#)
   World Development

Topic 5. Enhancing inclusion

9. [The Aggregate and Distributional Effects of Financial Globalization: Evidence from Macro and Sectoral Data](#)
   Journal of Money, Credit and Banking
10. [Distinguishing constraints on financial inclusion and their impact on GDP, TFP, and the distribution of income](#)
    Journal of Monetary Economics
11. Macroeconomic impacts of non-resource revenue mobilization in CEMAC
    Applied Economics Letter, forthcoming
12. Export Quality in Advanced and Developing Economies: Evidence from a New Dataset
    IMF Economic Review, forthcoming

Output 1.3 – Freely available books

We have one book this year.

1. Macroeconomy Policy in Fragile States
   Oxford University Press, *forthcoming*

Output 2: IMF research product produced under this project used by IMF country teams and partner authorities

Output 2.1 - Country Applications with IMF Country Teams

Our team completed 18 applications with IMF country teams.

FPAS framework

We have no publication under this topic this year.

Diversification

1. [Use of diversification toolkit in Nigeria's Article IV](#)
2. [Use of diversification toolkit in Uganda's Article IV](#)

DIG/Investment scaling up/Debt sustainability

3. [Application of DIGNAR model to Mozambique: (Selected Issues)](#)
4. [Application of DIGNAR model to Gabon (Selected Issues)](#)
5. [Application of DIGNAR model to Guyana (Article IV)](#)
6. [Application of DIGNAR model to assesses macroeconomic gains from anti-corruption reform in Republic of Congo (Article IV)](#)
7. [Application of DIG model to Madagascar (Selected Issues)](#)
8. [Cameroon: 4th Review Under the ECF](#)

Natural disasters

We have no publication under this topic this year.

Income and Gender Inequality

9. [Laos: Article IV](#)
10. IMF African Department Inclusive Growth Network's peer learning workshops
11. [Nigeria: Selected Issues](#)
12. [Sierra Leone: Selected Issues](#)
13. [Moldova: Article IV](#)
14. Course: Macroeconomic Policies, Structural Reforms, and Income Distribution: Applications of the Heterogeneous Agents Model in Policy Analysis
15. Course: FAD-ICD-LEG-MCM-RES-SPR Macro-Structural Training, Clinic 3: Diversification, Structural Transformation and Reforms in Developing Economies
16. Course: FAD-ICD-LEG-MCM-RES-SPR Macro-Structural Training, Clinic 4: Distributional Impact of Policies and Reforms

17. Course: FAD-ICD-LEG-MCM-RES-SPR Macro-Structural Training, Clinic 7: Labor and Product Markets Reform

IASOC Toolkit – An Assessment Toolkit for Monetary Policy Frameworks

18. Rwanda: Article IV

Output 2.2 - Uptake by Country Authorities

This year, we coordinated with country authorities on eight projects.

1. Forecasting and Policy Analysis System (FPAS) Manual
2. Presentation to the authorities during the Kenya Article IV mission
3. Zambia: Article IV
4. Honduras: Article IV
5. Malawi: Second and Third Reviews Under the Three-Year Extended Credit Facility Arrangement
6. Ghana: Customized Training Mission on Developing a Forecasting and Policy Analysis System (FPAS) at the Bank of Ghana.
7. Vietnam: The ICD TA team delivered remote assistance on FPAS to the State Bank of Vietnam.
8. A course on model-based Monetary Policy Analysis and Forecasting (MPAF) in Vienna.

Output 2.2.1 – Courses and Workshops Offered to Country Authorities

We held four courses to increase uptake of our research by country authorities and IMF staff.

1. Model-based Monetary Policy Analysis and Forecasting (MPAF.x) online course for country authorities.
2. Ghana: Customized Training Mission on Developing a Forecasting and Policy Analysis System (FPAS) at the Bank of Ghana.
3. Vietnam: The ICD TA team delivered remote assistance on FPAS to the State Bank of Vietnam.
4. A course on model-based Monetary Policy Analysis and Forecasting (MPAF) in Vienna.

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

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

This year we held four high-level conferences.

1. Making the Case for Reform
2. Macroeconomics in the Age of Artificial Intelligence
3. Sustainable Development, Sustainable Debt: Finding the Right Balance
4. Fostering Diversification to Escape the Middle-Income Trap

Output 3.2 – Results of papers reflected in IMF Board discussions and papers

During the eighth year, the results of our research have been reflected in two IMF Board papers/meetings, as well as other IMF policy papers including a chapter in the World Economic Outlook report.

IMF Board Papers/Meetings

1. [Review of Implementation of IMF Commitments in Support of the 2030 Agenda for Sustainable Development](#)
2. [Macroeconomic Developments and Prospects in Low-Income Developing Countries—2019](#) (LIDC report)

Other IMF Policy Papers

1. SDN: [The Political Costs of Reforms: Fear or Reality?](#)
2. WEO Chapter: [Reigniting Growth in Low-income and Emerging Market Economies: What Role Can Structural Reforms Play?](#)
3. SDN: [Women in the Labor Force: The Role of Fiscal Policies](#)

Output 4: IMF strengthens capacity building by expanding the network of LIC researchers.

Output 4.1 – Commissioned Papers

We had six commissioned paper this year.

1. [International Capital Flows, Land Conversion and Wage Inequality in Poor Countries](#)
   Open Economies Review
2. [Examining Structural Unemployment in Sub-Saharan Africa: Empirical Evidence from Unobserved Components](#)
   Open Economies Review
3. Building Inclusive States: A Simple Framework
   Oxford University Press, forthcoming
4. Transition Programs: A Theory of the Scaffolding Needed to Build out of Fragility
   Oxford University Press, forthcoming
5. Building Governance Capacity in Areas of Limited Statehood
   Oxford University Press, forthcoming
6. Monetary and Exchange Rate Policy in Fragile States
   Oxford University Press, forthcoming

Output 4.1.1 – Toolkits

We have no toolkit under this output for this year.

Output 4.2 – Attendance of External Researchers at High-Level Policy Conferences

The team offered 16 presentations at high-level policy conferences (see Appendix 3 for further details).

Output 4.3 – Results disseminated in e-newsletters

Each quarter, we send out an e-newsletter that spotlights working papers, conferences, and other activities we have completed over the last three months.

In addition to the newsletters, the research under the DFID-IMF partnership has also been featured in other outlets such blogs and video.

Blogs

1. Monetary policy, credit dynamics, and economic activity in developing countries – VoxEU
2. Video and poster on "In Search of Information: Use of Google Trends' Data to Narrow Information Gaps for Low-income Developing Countries" at the 2020 Annual Conference of the American Economic Association (AEA) in San Diego, on January 3-5.
3. IMF Blog: "Growing Through Education in Nigeria".
4. IMF Blog: "Reform Doesn't Have to Cost Votes".
5. IMF Blog: "How To Reignite Growth in Emerging Market and Developing Economies".

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

This year, we continue to see the research outputs from the project initialize discussions and influence policy decisions on pressing issues LICs face. The team has contributed to organize several high-level conferences and workshops featuring top officials from the Fund and developing countries. Research findings by the team on sustainable development goals, structural reforms, gender and income inequality were intensively discussed by the IMF Executive Board and in other occasions during outreach missions; many of the findings were included in the institution's high profile analytical outlets: Staff Discussion Notes, World Economic Outlook, and LIDC report. Our research papers were also accepted by top academic journals and academic conferences, reflecting both the scientific value and overall recognition of our research program in the academia.

We begin with the conference on Sustainable Development, Sustainable Debt: Finding the Right Balance, which the IMF and the Government of Senegal organized in partnership with the United Nations and Cercle Des Économistes, last December in Dakar. The conference consisted of seven panel discussions that explored different views on how the Sustainable Development Goals can be achieved without compromising debt vulnerability for Sub-Saharan African countries. This comes at a time when the discussion on debt sustainability for low-income countries re-emerges and gets elevated upon the current global pandemic. The conference was attended by top level officials including the IMF's Managing Director, United Nations Deputy Secretary General, President of Benin, Burkina Faso, Côte D'Ivoire, Guinea-Bissau, Mali, Niger, Republic of Congo, Senegal, and Togo, as well as ministers of various departments in these countries. The conference provided an opportunity for peer learning by sharing success stories of sustainable development and engaging a wide group of stakeholders in a dialogue that helps unify efforts; and would certainly exert profound influence over development and debt policies in these countries.

Another high-level event involving senior officials is the conference on Fostering Diversification to Escape the Middle-Income Trap in Botswana, which brought together senior officials from the Botswana's government, representatives from five economies with successful diversification experience (Chile, Costa Rica, Estonia, South Korea and Mauritius), academia and representatives from regional institutions to learn from past experience and explore future directions to overcome challenges of diversifying the economy. IMF's Deputy Managing Director—Tao Zhang attended the conference and delivered the opening remarks, in which he stressed that the conference provides an opportunity for officials to identify the general principles and arrangements that would guide their future policymaking decisions. On the same topic, the team's work on export diversification was also presented in one of the analytical corners of the 2019 IMF-World Bank Spring Meeting, which is attended by policymakers from around the world and stimulates arrays of follow-up discussions.

Besides these high-level events, the team's work was published in several high-profile Fund outlets with wide audience groups. In the policy paper—Review of Implementation of IMF Commitments in Support of the 2030 Agenda for Sustainable Development, the team made dedicated efforts to review the implementation of the initiatives the IMF committed to in 2015 to support developing countries in pursuing the 2030 agenda for sustainable development in eight areas. The paper summarized lessons learned from the large scaling-up of various initiatives by the Fund, provided valuable information for future IMF engagements. The findings were well-received by the IMF Executive Board. The team was also invited to many outreach missions, which disseminated the information to authorities, other stakeholders, and the general public.

The Fund's flagship publication—World Economic Outlook (WEO) report, featured an analytical chapter on the growth impacts of structural reforms in low-income and emerging markets in its October publication, in which research findings by the team provided crucial input. The results, using a newly constructed database on structural reforms, show that comprehensive reform package could deliver sizable output gains in the medium term. The overarching recognition of the WEO report brings the

research findings across the world, reaching high-level public officials, academia, the private sector, and civil society, as well as coverage on the Internet, social media and the press. All of which contributed to building the momentum for LIDCs to explore the deep water of structural reforms to achieve the Sustainable Development Goals. The emphasis on structural reforms this year was also reflected in the Staff Discussion Notes—The Political Costs of Reforms: Fear or Reality, and the panel discussion on Making the Case for Reform, both of which stretch their influence well beyond policymakers and the academia. Also, it is important to note that our team has been receiving a high number of requests by IMF country teams for the new dataset on structural reforms. So, this output is likely to have a significant impact in analysis done by IMF country teams and in their discussions with country officials.

On a more micro-level, the team's work continues to provide support to policymaking by desk economists and country authorities. This year, following the joint workshop with the Bank of Uganda last year, the team has consolidated a manual on implementing FPAS—the analytical framework of monetary policy now adopted by many countries in Africa. The manual serves as a user guide for Bank of Uganda management and for current and prospective economists involved in the forecasting rounds, which directly affects how monetary policy is conducted in the country. The team has also made an important step to introduce the framework to wider audience by launching the online course Model-based Monetary Policy Analysis and Forecasting (MPAF.x) over edX, which is designed to serve as preparatory material and potentially a prerequisite for face-to-face external IMF training and technical assistance on FPAS provided to central banks in low income countries. Despite the audience targeted here, it is worth mentioning that the course is open to the general public as well.

Other tools developed by the team have made similar impact as well. In 2018, the Fund launched a new structural curriculum including a series of clinics, each focusing on the operational tools available to Fund economists in one topic of macro-critical structural reforms. Among the seven clinics offered, three are centered around the tools and datasets developed by the team: diversification, structural transformation and reforms in developing economies, distributional impacts of policies and reforms, and labor and product markets reforms. Besides the clinics, the team's inequality toolkit, which is now open to the general public at GitHub, belongs also to an internal training course dedicated to using quantitative methods in policy analysis involving distributional issues. The team has also joined forces with the African Department by launching a series of peer learning workshops introducing these analytical tools and how they have been used in practice. These venues prove to be important sources through which our research outcomes successfully reach desk economists and eventually to country authorities every year: this year for instance, we see uptakes from Kenya, Laos, Moldova, Nigeria, Sierra Leone, Uganda, etc. In some occasions, our colleagues working on and authorities in non-LIDC countries find these tools suit their demand as well.

As the program enters the end of the third phase, our work in many areas has generated findings when viewed collectively, provide novel generalizable insights to our handling of pressing issues. We have also made efforts to summarize these findings and conveying them to the general public. Such efforts have assumed several different formats: Staff Discussion Notes—Women in the Labor Force: The Role of Fiscal Policies, the chapter on value-added taxes in this year's LIDC report, and designated synthesis reports in gender and inequality, etc.

We have also made continuous and dedicated efforts in expanding the network of researchers working on macro-critical issues in LIDCs. We are able to have our papers published at top level economic journals like Journal of Monetary Economics and European Economic Review, as well as included in programs of top academic conferences such as the Allied Social Science Associations Annual Meeting (during which our staff was interviewed for the work on using Google data to study LIC issues), the North American Summer Meeting of the Econometric Society, among others. In addition, the team also published on more accessible media such as VoxEU and IMF Blog.

7. COSTS, VALUE FOR MONEY, AND MANAGEMENT

The approved budget for the project is US$23.3 million.

Appendix 2 provides the formal financial reporting of the project, with a financial statement and projects generated by the IMF's financial systems. As of April 2020, $20.8 million has been drawn down 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 eight years of the project:

Table 4
Project Expenditures in Years 1-8

Activity	Total, Years 1-8
HQ led missions including entire mission	$6,801,645
Short-term Advisors - CD delivery	$525,562
Research HQ based/Visiting Scholars	$6,894,300
Seminars & Study Tours	$1,671,151
Project Backstopping	$2,966,278
Project Management	$226,595
Exceptional Expenses	$335,282
Language Services	$1,348
Trust Fund Fee	$1,359,551
Total	**$20,781,712**

We do not foresee any changes in cost structures due to exchange rates.

Value for Money:

This project continues to be highly cost effective, owing to solid governance on the procurement process together with the high-quality work by the team. We strictly follow all Fund guidelines for hiring, travel, and conferences. All contractual employees undergo a competitive process before being hired. Outputs are produced under firm time-frames and must meet Fund requirements for publication. The quality of our papers is further evaluated when they are submitted to peer-reviewed publications.

The average cost per paper is lower than the DFID benchmark of $190,000 (£156,000) per paper.[3] Table 5 shows that the cost per working paper for the eight years is approximately $69,000 (£56,000), broadly maintained as low as in the last year. Table 5 also shows that the cost per published paper is $138,000 (£119,000), down from around $158,000 (£130,000) reported last year. This is in line with the expectation that as more working papers get accepted for publication, the cost per published paper will decrease. 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 work.[4] The total staff, contractual, and visiting scholar cost is thus split between papers

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[3] The currency conversion is based on the exchange rate as of May 15, 2020.

[4] The total research staff costs are estimated as the sum of "HQ led missions", "Short-term Advisors", and "Research HQ based/Visiting Scholars" from Table 4. The category "HQ led missions" 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.

and applications.

The quality of the project outputs is very high, even with the low average cost. The total number of publications reached 70 for the eight years, including the ones at the highly ranked journals such as Journal of International Money and Finance, The World Bank Economic Review, Economic Inquiry and Journal of Monetary Economics, among others. As noted in Section 2, the analysis shows that 80% of our publications have been cited, with an average citation of 11 per article cited. As a benchmark of comparison, the most widely cited journal in economics, The Quarterly Journal of Economics, has a 5-year impact factor of 14.[5] Our products are also included in programs of top academic conferences such as the annual meetings of the Allied Social Science Associations (ASSA), and others. 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 5
Cost per Working and Published Paper

Total Staff/Contractual/VS Costs[1]	$14,221,507
Research Paper Costs	$10,666,130
Country Applications Costs	$3,555,377
Working Papers	155
Produced	129
Commissioned	26
Cost Per Working Paper	$68,814
Published Papers	77
Produced	70
Commissioned	7
Cost per Published Paper	$138,521

[1] Estimated as the sum of "HQ led missions", "Short-term Advisors", and "Research HQ based/Visiting Scholars". Note that the category "HQ led missions" 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.

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

[5] These citation analyses were conducted by the IMF Library team (Linda Venable), based on Dimension.ai.

8. WORK PLAN AND TIMETABLE

Given the unprecedented nature of the current crisis (COVID-19), a new area of work and a focus for upcoming year is COVID-19 and LICs, while we will continue our work on the main areas of research. It is also important to note that there will likely be major interruption on travel/mission.

Individual work plans:

The following provides a brief overview of our plans for each topic.

(1) COVID-19

Modeling policy choices: Public debt vulnerabilities in LICs—new debt composition, new challenges

a) As a response to the current global pandemic, staff form a team working on investigating the medium- to long-term impacts of COVID-19 on LIDCs along several key macroeconomics dimensions.
b) The team is building a comprehensive database of epidemics since 1900 and analyze how growth, debt or debt restructuring, as well as domestic conflicts respond to severe epidemics. The team is also studying the path of economic recovery from epidemics and compare it with recovery from financial crisis, natural disasters and civil wars.
c) The team is working on an Extended Multigroup SEIR model to understand transmission of Covid-19 and evaluate different scenarios and exit strategies, particularly for LIDCs: Extended Multigroup SEIR model. The model can be used to assess the requirements of alternative scenarios on the healthcare system and the effects on labor supply.

Modeling policy choices: Monetary policy frameworks in LICs

d) The team is putting together a policy note on central bank communication during COVID-19. The team This note argues that central banks can flexibly adopt crisis responses to the COVID-19 shock, using either interest-rates or more out-of-the-box measures—such as foreign exchange intervention or debt monetization—, without necessarily compromising their existing monetary policy frameworks or their credibility. The key is communication.
e) Staff is working on a policy note that summarizes the impact of the multifaceted COVID-19 shock on inflation, inflation expectations and the risks to these in EMDEs, and proposes a set of responses for responding to the crisis while maintaining a longer-term focus on price stability.
f) Staff is working on a policy note that discusses the integration of crisis response measures into the monetary policy framework and the various considerations that need to be taken into account by the authorities when doing so.
g) Staff will work on policy note that discuss how central bank measures, from monetary policy to financial regulation, in response to the COVID-19 shock could be designed with considerations on inequality and the impact of the shock on lower income groups.

Modeling policy choices: Dealing with public investment trade-offs: more physical or human capital?

h) The team is working on simulating COVID-19 impacts and policy responses using the DIGNAR model.
i) The team is putting together a toolkit on *DIGNAR* model with COVID-19 shocks for LICs.
j) The team is working on a toolkit for the DIG labor model.

(2) Modelling policy choices

Public debt vulnerabilities in LICs—new debt composition, new challenges:

a) A team will be preparing a board paper on "The Joint IMF-WB Multipronged Approach for Addressing Emerging Debt Vulnerabilities".

Monetary policy frameworks in LICs:

b) A team is developing a comprehensive toolkit to assess soundness of monetary policy (MP) frameworks. The work will be featured in working papers and a high-level conference.
c) The IASOC toolkit—an output of the project on Monetary Policy Frameworks—will be used to generate diagnostics of the key strengths and weaknesses of monetary policy frameworks upon further requests from country teams in their preparation for Article IV missions.
d) A high-level roundtable will bring together practitioners and academics from both developed and developing economies to review current central bank practice and policy options to address increasing inequality through monetary policy, prudential regulation and financial market infrastructure policy.
e) Staff are working to build a micro-founded general equilibrium framework to quantify the aggregate and distributional effects of a combination of monetary, macro-prudential and exchange rate policies for LICs in Asia.
f) The team plans for a working paper assessing the drivers of pass through of international oil price changes to domestic fuel prices in developing countries
g) The team is also working on a project that aims to construct policy traction indices based on data compiled from various Article IV Staff Reports and examine the correlates of policy tractions in LIDCs.
h) A team will put together a quarterly projection model for the National Bank of Rwanda. The model is an extension of the canonical structure in Berg et al (2006) to reflect specifics of the interest-rate-based policy framework with managed exchange rate, the effect of agricultural sector and harvests on prices, and the role of fiscal policies and aid flows.
i) An FPAS mission to the Bank of Ghana will work towards developing medium-term modelling framework in the Bank of Ghana and establishing organization and processes consistent with FPAS practices. A specific task will include inviting a target staff group from the Bank of Ghana to attend the MPAF.x and provide feedback on this online course to the mission.
j) A team will put together a stock-taking paper on IMF Capacity Development on Monetary Policy Forecasting and Policy Analysis. The paper takes stock of this extensive capacity development (CD), including in LICs, with the aim to facilitate and enhance the future FPAS CD activities by sharing the lessons learned, the tools developed, and recommendations provided.
k) The new Financial programming 2.0 environment will modernize teaching and capacity development efforts for MP and "financial programming" more broadly. The environment will replace outdated Excel-based frameworks and will be used in face-to-face IMF training and in macro-fiscal TA provided to LICs.

Dealing with public investment trade-offs: more physical or human capital?

l) The team will contribute a chapter on public investment during fiscal cycles towards the book on *Infrastructure Governance*. It aims to provide guidance on the importance of reorienting government expenditure during fiscal consolidations.
m) Staff will continue to provide technical assistance on public investment to country teams.
n) Staff will be putting together online training module on the *DIG and DIGNAR* models.

(3) Understanding macro-financial linkages

An investigation into the cost of remittances:

a) The team is investigating the drivers of high remittance cost and its slow decline. The findings from stylized facts, country cases as well as empirical estimations will shed light on policy options to reduce remittance cost.

(4) Building resilience

Macro criticality of climate-change-related natural disaster shocks:

a) Staff will be conducting simulations of the impact of natural disasters and policies in Maldives.
b) Staff are working on a project using the growth-at-risk approach to analyze the growth and fiscal impact of large natural disasters.
c) Staff are working on a chapter on adapting to climate change in Sub-Saharan Africa for an upcoming Regional Economic Outlook report for Africa.

Revisiting industry diversification and sector vulnerability upon natural disaster shocks:

d) The book on *Infrastructure Governance* will feature a chapter on building resilience to natural disaster in vulnerable states, in which the team explores the economic benefits of ex-ante intervention and underscores the importance of mobilizing resources towards resilience building against natural disasters and climate change.

Integrated assessment on long-run impacts of climate change in LICs:

e) Staff will work on building a version of the Integrated Assessment Model tailored to capture stylized characteristics of low-income economies and allowing weather shocks to affect the real economy. The framework is expected to be used to gauge how climate change shapes the growth prospect of LICs in the long run and how adequate policies should be designed.

(5) Promoting structural change and institutional development

Diversification and rethink of development policy:

a) The team will put together IMF board paper on structural reforms.

(6) Enhancing inclusion

Gender equality and sustainable growth:

a) Staff will continue to provide capacity building on gender equality issues to country teams and authorities as well.

Income inequality: on the welfare effects of revenue mobilization in LICs:

b) The team is preparing the revision of the working paper that analyzes the inequality toolkit requested by *The Economic Journal.* A Vox article has also been commissioned.
c) Staff will continue to provide technical assistance on the inequality toolkit to country teams and authorities.
d) The team is studying the impact of ICT on structural change.

e) The team plans to launch the updated database on fuel pump prices around the world, with a study on the distributional impact of fuel prices on inflation.

f) The team will also engage in studying how food price shocks would affect the macroeconomy of LIDCs.

g) Staff are working on analytical framework to build resilience in small states in a sustainable manner with several country applications.

h) Staff will launch a project that intends to provide evidence on the link between climate shocks and income inequality in low income developing countries that are prone to frequent and severe climatic shocks.

9. RISK

The overall risk for this project remains low.

10. MONITORING AND EVALUATION

Monitoring

IMF reports to DFID 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 DFID 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 DFID website so that DFID 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 DFID project members, we conduct video conference calls to discuss the project.

Evaluation

No budget for an external evaluation was included in the project budget.

11. FURTHER INFORMATION

Nothing to add at this time.

APPENDIX 1. LOG-FRAME

PROJECT NAME	Macroeconomic Research in Low-Income Countries (LICs)							
IMPACT	**Impact Indicator 1**		Baseline	Milestone 1	Milestone 2	Milestone 3	Target (date)	
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**	(2017) Sub-Saharan Africa: 56% Developing regions: 24%					
		Achieved						
			Source					
			United Nations: The Millenium Development Goals Report (2010)					
	Impact Indicator 2		Baseline	Milestone 1	Milestone 2	Milestone 3	Target (date)	
	Increase in employment to population ratio in LICs	**Planned**	(2017) Sub-Saharan Africa: 70% Developing regions: 68%					
		Achieved						
			Source					
			United Nations: The Millenium Development Goals Report (2010)					
OUTCOME	**Outcome Indicator 1**		Baseline	Milestone 1	Milestone 2	Target (March 2020)	Target (date)	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 2017 (8)	By March 2018 H(10) M(9) L(8)	By March 2019 H(11) M(10) L (9)	By March 2020 H(12) M(11) L(10)	Specific context: the average output per year (Yr 1 - 5) is 2, deflated average for medium case is 1.46. 0.92 for low case	
		Achieved		10	11	12		
			IMF Reporting - board papers, policy papers, conference reports/papers, pilot applications of country teams, refs in staff docs, or internal policy memos.					
INPUTS (£)	£4.14 million				£4.14 million		100	
INPUTS (HR)	DFID (FTEs)							

OUTPUT 1	Output Indicator 1.1			Baseline	Milestone 1	Milestone 2	Target (March 2020)		Assumption
High quality, policy relevant research on macroeconomic issues affecting LICs produced.	Number of **priority research papers** produced, on the following research topics: 1) Monetary and exchange rate policies; 2) Public investment, growth, and debt sustainability; 3) Macroeconomic management of natural resources; 4) Macroeconomic policies and income distribution; 5) Financial deepening for macroeconomic stability and sustained growth; 6) Growth through diversification;	Planned		March 2017 (75)	By March 2018: H (90 papers) M (86 papers) L (82 papers)	By March 2019: H (105 papers) M (97 papers) L (89 papers)	By March 2020: H (128 papers) M (124 papers) L (120 papers)	Specific context: the average output per year (Yr 1 - 5) is 15, 10.95 for M, 6.9 for L	High-level context: 1) No major financial or economic crisis, such that IMF staff can devote time to the project as committed. 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 materialise as anticipated.
		Achieved			94	113	129		
		Source							
		IMF							
	Output Indicator 1.2			Baseline	Milestone 1	Milestone 2	Target (March 2020)		
	Number of **research papers accepted for publication** in appropriate high-quality peer-reviewed journals	Planned		March 2017 (37)	By March 2018: H (44 paper) M (42 papers) L (40 papers)	By March 2019: H (51 papers) M (47 paper) L (43 papers)	By March 2020: H (65 papers) M (63 papers) L (61 paper)	Specific context: the average output per year (Yr 1 - 5) is 7, 5.11 for M, 3.22 for L.	
		Achieved			48	58	70		
		Source							
		IMF							
	Output Indicator 1.3			Baseline	Milestone 1	Milestone 2	Target (March 2020)		
	Number of **freely available books**	Planned		March 2017 (2)	By March 2018: H (2 books) M (2 books) L (2 books)	By March 2019: H (2 books) M (2 books) L (2 books)	By March 2020: 3 books	Specific context: the average output per year (Yr 1 - 5) is 0). Books are a new output, so historical data is not available / reliable.	
		Achieved			2	2	2		
		Source							
		IMF							
IMPACT WEIGHTING (%)									
30									

INPUTS (£)	DFID (£)		Govt (£)	Other (£)	Total (£)		DFID SHARE (%)

INPUTS (HR)	DFID (FTEs)				

OUTPUT 2	Output Indicator 2.1			Baseline	Milestone 1	Milestone 2	Target (March 2020)		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 teams.**	Planned		March 2017 (64)	By March 2018, evidence of number of country teams applying policy tools and frameworks: H (77) M (73) L (70)	By March 2019, evidence of number of country teams applying policy tools and frameworks: H (90) M (83) L (76)	By March 2020, evidence of number of country teams applying policy tools and frameworks: H (107) M (104) L (102)	Specific context: the average output per year (Yr 1 - 5) is 13, 9.49 for M, 5.98 for L	
		Achieved			85	98	116		
					Source				
					IMF				
	Output Indicator 2.2			Baseline	Milestone 1	Milestone 2	Target (March 2020)		
	Application and use of tools and frameworks **by country authorities**.	Planned		March 2017 (16)	By March 2018, evidence of number of country authorities applying policy tools and frameworks: H (19) M (18) L (17)	By March 2019, evidence of number of country authorities applying policy tools and frameworks: H (22) M (20) L (19)	By March 2020, evidence of number of country authorities applying policy tools and frameworks: H (46) M (43) L (40)	Specific context: the average output per year (Yr 1 - 5) is 3, 2.19 for M, 1.38 for L	
		Achieved			29	38	46		
					Source				
					IMF				
	Output Indicator 2.2.1			Baseline	Milestone 1	Milestone 2	Target (March 2020)		
	Courses offered to country authorities	Planned		March 2017 (1)	By March 2018, evidence of courses offered to country authorities: H (3) M (2) L (1)	By March 2019, evidence of courses offered to country authorities: H (4) M (3) L (2)	By March 2020, evidence of courses offered to country authorities: H (20) M (18) L (17)	Specific context: the average output per year (Yr 1 - 5), N/A. This is a new indicator.	
		Achieved			9	16	20		
					Source				
					IMF				
IMPACT WEIGHTING (%)									
30									
INPUTS (£)	DFID (£)			Govt (£)	Other (£)	Total (£)		DFID SHARE (%)	
INPUTS (HR)	DFID (FTEs)								

OUTPUT 3	Output Indicator 3.1		Baseline	Milestone 1	Milestone 2	Target (March 2020)		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 2017 (22)	By March 2018, number of policy conferences drawing on outputs from the project: H (26) M (25) L (24)	By March 2019, number of policy conferences drawing on outputs from the project: H (30) M (28) L (26)	By March 2020, number of policy conferences drawing on outputs from the project: H (40) M (39) L (38)	Specific context: the average output per year (Yr 1 - 5) is 4, 2.92 for M, 1.84 for L	
		Achieved		30	36	41		
		Source						
		IMF						
	Output Indicator 3.2		Baseline	Milestone 1	Milestone 2	Target (March 2020)		
	Results of the research papers produced reflected in IMF board discussions.	Planned	March 2017 (11)	By March 2018: H (13) M (12) L (12)	By March 2019: H (15) M (14) L (13)	By March 2020: H (20) M (19) L (18)	Specific context: the average output per year (Yr 1 - 5) is 2, 1.46 for M, 0.92 for L	
		Achieved		16	18	20		
		Source						
		IMF						
	Output Indicator 3.3		Baseline	Milestone 1	Milestone 2	Target (March 2020)		
	Results of the research papers produced reflected in IMF policy papers such as Staff Discussion Notes, policy memos to management, and the like	Planned	March 2017 (19)	By March 2018: H (23) M (22) L (21)	By March 2019: H (27) M (25) L (23)	By March 2020: H (40) M (39) L (38)	Specific context: the average output per year (Yr 1 - 5) is 4, 2.92 for M, 1.84 for L	
		Achieved		24	36	40		
		Source						
		IMF						

IMPACT WEIGHTING (%)								
25%								

INPUTS (£)	DFID (£)		Govt (£)	Other (£)	Total (£)		DFID SHARE (%)	
INPUTS (HR)	DFID (FTEs)							

OUTPUT 4	Output Indicator 4.1			Baseline	Milestone 1	Milestone 2	Target (March 2020)		Assumptions
IMF strengthens research capacity, by expanding the network of researchers and policy makers working on LIC macroeconomics	Number of commissioned research papers from new researchers* (see definition below) produced on thematic areas.	**Planned**		March 2017 (20)	By March 2018, number of commissioned research papers produced: H (24) M (23) L (22)	By March 2019, number of commissioned research papers produced: H (28) M (26) L (24)	By March 2020, number of commissioned research papers produced: H (32) M (29) L (26)	Specific context: the average output per year (Yr 1 - 5) is 4, 2.92 for M, 1.84 for L	
		Achieved			25	26	32		
					Source				
					IMF				
	Output Indicator 4.1.1			Baseline	Milestone 1	Milestone 2	Target (March 2020)		
	A data toolkit is a new dataset that is put in a format that is accessible and applicable to the work of IMF country teams and country authorities.	**Planned**		March 2017 (5)	By March 2018, number of produced: H (6) M (6) L (5)	By March 2019, number of produced: H (7) M (6) L (6)	By March 2020, number of produced: H (8) M (7) L (6)	Specific context: the average output per year (Yr 1 - 5) is 1, 0.73 for M, 0.46 for L	
		Achieved			7	8	9		
					Source				
					IMF				
	Output Indicator 4.2			Baseline	Milestone 1	Milestone 2	Target (March 2020)		
	Attendance of external researchers and policy makers at high-level policy conferences.	**Planned**		March 2017 (51)	By March 2018, number of high-level policy conferences attended by external researchers: H (61) M (58) L (56)	By March 2019, number of high-level policy conferences attended by external researchers: H (71) M (66) L (60)	By March 2020, number of high-level policy conferences attended by external researchers: H (118) M (115) L (112)	Specific context: the average output per year (Yr 1 - 5) is 10, 7.3 for M, 4.6 for L	
		Achieved			86	108	124		
					Source				
					IMF				
IMPACT WEIGHTING (%)	Output Indicator 4.3			Baseline	Milestone 1	Milestone 2	Target (March 2020)		
15%	Project Outputs disseminated in e-newsletter and up-dated public web-page and R4D (DFID web portal). Number of updates of e-newsleter and/or web-page:	**Planned**		March 2017 (18)	By March 2018, number of up-dates: H (22) M (21) L (20)	By March 2019, number of up-dates: H (26) M (24) L (22)	By March 2020, number of up-dates: H (30) M (27) L (24)	Specific context: the average output per year (Yr 1 - 5) is 4, 2.92 for M, 1.84 for L	
		Achieved			22	26	30		
					Source				

APPENDIX 2. FINANCIAL REPORTS

International Monetary Fund
United Kingdom - Project on Macroeconomic Research in LICs
Bilateral - Cash Flow Statement
As of Apr 30, 2020
(In U.S. Dollars)

	Cumulative FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Total
Contributions[1]	10,462,830	2,254,739	4,537,586	2,368,482	1,968,935	2,088,790	23,681,362
Interest Earned	2,964	7,369	19,702	35,135	56,743	41,005	162,918
Total Cash Available	**10,465,794**	**2,262,108**	**4,557,288**	**2,403,617**	**2,025,678**	**2,129,795**	**23,844,280**
Expenses Paid[2]	6,156,537	3,536,000	3,768,706	2,937,652	2,490,122	1,892,694	20,781,711
Cash Balance	**4,309,257**	**3,035,365**	**3,823,947**	**3,289,912**	**2,825,468**	**3,062,569**	**3,062,569**

1/Contributions are net of transfers and return of funds.
2/Expenses paid include the 7% TFM.

Project ID	Project Description	Status	Start Date	End Date	Latest Approved/ Proposed Budget	Expenses	Remaining Balance[1]	Execution (%)[2]
					20,088,035	19,422,161	665,875	
IMF_IMF_2012_01	DFID Macro Research 1&2	Closed	5/1/2012	3/31/2017	12,451,409	12,451,410	-	-
	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	-	-
SPR_IMF_2017_04	DFID Macro Research 3	Approved	4/1/2017	3/31/2020	7,636,626	6,970,751	665,875	91%
	HQ led missions including entire mission team				556,596	389,849	166,747	70%
	Short-term Advisors - CD delivery				90,000	48,460	41,540	54%
	Research HQ based / Visiting Scholars				4,716,521	4,658,535	57,986	99%
	Seminars & Study Tours				609,290	397,767	211,523	65%
	Project Backstopping				1,092,201	1,054,899	37,302	97%
	Project Management				122,494	84,611	37,883	69%
	Exceptional Expenses				446,523	335,282	111,241	75%
	Language Services				3,000	1,348	1,652	45%
Sub Total					20,088,035	19,422,161	665,875	
Trust Fund Management Fee					1,406,162	1,359,551	46,611	
Grand Total					21,494,198	20,781,712	712,487	

Agreement Summary	
Contributions to date	23,681,361
Net Transfers	-
Interest Earned	162,918
Total Inflows(A)	**23,844,279**
Expenses	20,781,712
Remaining Budget (including projects pending approval)	712,487
Total Outflows(B)	**21,494,199**
Future Contributions (based on signed agreements)(C)	4,171,779
Total Available & Future Contributions(A-B+C)	**6,521,859**

1/ The remaining balance for closed projects is zeroed out upon project completion for reallocation of resources or return to donor.
2/ For active projects only.

APPENDIX 3. RESEARCH OUTPUTS

OUTPUT 1.1 – WORKING PAPERS

Topic 1. Modelling and understanding policy choices

1. Public Investment in Bolivia: Prospects and Implications
   Yehenew Endegnanew and Dawit Tessema

   Summary: Bolivia's "Patriotic Agenda 2025" sets targets for social and economic development propelled by state-led industrialization under a five-year development plan (2016–2020). Large-scale public investment has aimed to fill infrastructure gaps and raise productivity to ensure sustained medium-term growth. Pursuit of these goals in a period of lower hydrocarbon revenues has, however, contributed to widening fiscal and external current account deficits. The paper uses a structural model to outline different scenarios for the level of public investment in the face of declining hydrocarbon revenues. It finds that if public investment is sustained at current levels as a share of GDP while hydrocarbon revenues continue to decline, the sustainability of the public debt could be called into question.

2. On the Capacity to Absorb Public Investment: How Much is Too Much?
   Daniel Gurara, Kangni Kpodar, Andrea F. Presbitero and Dawit Tessema

   Summary: While expanding public investment can help filling infrastructure bottlenecks, scaling up too much and too fast often leads to inefficient outcomes. This paper rationalizes this outcome looking at the association between cost inflation and public investment in a large sample of road construction projects in developing countries. Consistent with the presence of absorptive capacity constraints, our results show a non-linear U-shaped relationship between public investment and project costs. Unit costs increase once public investment is close to 10% of GDP. This threshold is lower (about 7% of GDP) in countries with low investment efficiency and, in general, the effect of investment scaling up on costs is especially strong during investment booms.

3. On the Substitution of Private and Public Capital in Production
   Zidong An, Alvar Kangur, and Chris Papageorgiou

   Summary: Most macroeconomic models assume that aggregate output is generated by a specification for the production function with total physical capital as a key input. Implicitly this assumes that private and public capital stocks are perfect substitutes. In this paper we test this assumption by estimating a nested-CES production function whereas the two types of capital are considered separately along with labor as inputs. The estimation is based on our newly developed dataset on public and private capital stocks for 151 countries over a period of 1960-2014 consistent with Penn World Table version 9. We find evidence against perfect substitutability between public and private capital, especially for emerging and LIDCs, with the point estimate of the elasticity of substitution estimated closely around 3.

4. [Optimal Fiscal Spending and Reserve Accumulation Policies Under Volatile Aid](#)
   Ioana R. Moldovan, Shu-Chun Susan Yang, and Luis-Felipe Zanna

Summary: This paper assesses the optimal setting of fiscal spending and foreign exchange rate intervention policies in response to volatile foreign aid, in a small open economy model that incorporates typical features of low-income countries. Within a class of policy rules, it jointly considers the optimal aid spending and international reserve accumulation policies. The results show that it is optimal to adjust government spending gradually in response to unpredictable fluctuations in aid, while partially accumulating foreign exchange reserves to offset Dutch disease effects. Also, allocating relatively more of the government spending to productive public investment, and less to government consumption, is welfare improving.

5. Debt Sustainability, Investment, and Growth with Segmented Labor Markets
   Edward F. Buffie, Luis-Felipe Zanna, Christopher Adam, Lacina Balma, Dawit Tessema, and Roland Kpodar
   Forthcoming IMF Working Paper

Summary: We introduce a new suite of macroeconomic models that extend and complement the Debt, Investment and Growth (DIG) model, widely used at the IMF since 2012 (Gurara et al., 2019; Melina et al., 2016). The new DIG-Labor models replace the assumptions of perfect wage flexibility and integrated labor markets with segmented labour markets; efficiency wages and the prospect of open unemployment; and an informal non-agricultural sector. These features allow both for a deeper examination of macroeconomic and fiscal policy programs and their impact on labour market outcomes, inequality and poverty. In this paper, we illustrate the model's properties by analysing the growth, debt and distributional consequences of big-push public investment programs with different mixes of investment in human capital and infrastructure. We show how investment in human capital is much more effective that investment in infrastructure in promoting long-run economic development when investments earn their average estimated returns. However, because investment in education affects labor productivity with a long lag, it takes 15+ years before net national income, the private capital stock, real wages for the poor and formal sector employment surpass their counterparts in a program that invests mainly in infrastructure. The ranking of alternative investment programs depends on policymakers' social discount rate and on the weight of distributional objectives in the social welfare function.

Topic 2. Understanding macro-financial linkages

6. Opening Up: Capital Flows and Financial Sector Dynamics in Low-Income Developing Countries
   Sebastian Horn and Futoshi Narita
   Forthcoming IMF Working Paper

Summary: Over the past two decades, many low-income developing countries have substantially increased openness towards external financing and have received large capital inflows. Using bank-level micro data, this paper finds that capital inflows have been associated with financial deepening through increases in loans, deposits and wholesale funding. While part of the increased loans were directly funded by foreign financing, we document even larger second-round effects at domestic banks that increase loans in response to higher deposits. To the contrary, there are only modest signs of a built-up in financial vulnerabilities, but caution is still warranted. In an additional step, we examine

causality through an IV approach and by applying an AIPW estimator. We provide suggestive evidence that the observed financial sector dynamics are caused by global push rather than domestic pull factors.

Topic 3. Building resilience

7. [Macroeconomic Outcomes in Disaster-Prone Countries](#)
   Alessandro Cantelmo, Giovanni Melina and Chris Papageorgiou

Summary: Using a dynamic stochastic general equilibrium model, we study the channels through which natural disaster shocks affect macroeconomic outcomes and welfare in disaster-prone countries. We solve the model using Taylor projection, a solution method that is shown to deal effectively with high-impact weather shocks calibrated in accordance to empirical evidence. We find large and persistent effects of weather shocks that significantly impact the income convergence path of disaster-prone countries. Relative to non-disaster-prone countries, on average, these shocks cause a welfare loss equivalent to a permanent fall in consumption of 1.6 percent. Welfare gains to countries that self-finance investments in resilient public infrastructure are found to be negligible, and international aid has to be sizable to achieve significant welfare gains. In addition, it is more cost-effective for donors to contribute to the financing of resilience before the realization of disasters, rather than disbursing aid after their realization.

Topic 4. Promoting structural change and institutional development

8. [Structural Reforms and Elections: Evidence from a World-Wide New Dataset](#)
   Alberto F. Alesina, Davide Furceri, Jonathan D. Ostry and Dennis P. Quinn

Summary: We assemble two unique databases. One is on reforms in domestic finance, external finance, trade, product markets and labor markets, which covers 90 advanced and developing economies from 1973 to 2014. The other is on electoral results and timing of elections. In the 66 democracies considered in the paper, we show that liberalizing reforms engender benefits for the economy, but they materialize only gradually over time. Partly because of this delayed effect, and possibly because voters are impatient or do not anticipate future benefits, liberalizing reforms are costly to incumbents when implemented close to elections. We also find that the electoral effects depend on the state of the economy at the time of reform: reforms are penalized during contractions; liberalizing reforms undertaken in expansions are often rewarded. Voters seem to attribute current economic conditions to the reforms without fully internalizing the delay that it takes for reforms to bear fruit.

9. [Policies in Hard Times: Assessing the Impact of Financial Crises on Structural Reforms](#)
   Gunes Gokmen, Massimiliano Onorato, Chris Papageorgiou and Tommaso Nannicini

Summary: It is argued that crises open up a window of opportunity to implement policies that otherwise would not have the necessary political backing. The argument goes that the political cost of deep reforms declines as crises unravel structural problems that need to be urgently rectified and the public is more willing to bear the pains associated with such reforms. This paper casts doubt on this prevalent view by showing that not only the crises-reforms hypothesis is unfounded in the data, but rather crises are associated with slowing

structural reforms depending on the institutional environment. In particular, we look at measures of liberalization in international trade, agriculture, network industries, and financial markets. We find that, after a financial crisis, democracies neither open nor close their economy. On the contrary, autocracies reduce liberalizations in multiple economic sectors, as the fear of regime change might lead non-democratic rulers to please vested economic interests.

10. Understanding Export Diversification: Key Drivers and Policy Implications
Rahul Giri, Saad Quayyum and Rujun Yin

Summary: We identify key factors, from large set of potential determinants, that explain the variation in export diversification across countries and over time using Bayesian Model Averaging (BMA), which addresses model uncertainty and ranks factors in order of importance vis-avis their explanatory power. Our analysis suggests, in order to diversify, policy makers should prioritize human capital accumulation and reduce barriers to trade. Other policy areas include improving quality of institutions and developing the financial sector. For commodity exporters reducing barriers to trade is the most important driver of diversification, followed by improving education outcomes at the secondary level and financial sector development.

11. Sustainable Development, Sustainable Debt
Gomez Gbedia Agou, Charles Amo-Yartey, Seung Mo Choi, Dominique Desruelle, Claire Gicquel, Trevor Lessard, Giovanni Melina, Shirin Nikaein Towfighian, Francine Nyankiye, Narayanan Raman, Ivohasina F. Razafimahefa, and Cemile Sancak.

Summary: This IMF Conference Paper highlights questions to be explored to allow Sub-Saharan African (SSA) countries to meet their development needs while safeguarding debt sustainability. While development needs remain large in SSA countries, the financing space has narrowed in recent years. SSA countries have made significant socio-economic progress in the last two decades. Income per capita improved; poverty rates declined; education and health outcomes expanded. However, SSA countries are only about half-way to achieving the Sustainable Development Goals (SDGs). The ability to finance development needs has become more constrained as public debt increased rapidly between 2011 and 2016, albeit stabilizing thereafter. In addition, official development assistance (ODA) has stagnated or even declined.

Topic 5. Enhancing inclusion

12. Informality and Gender Gaps Going Hand in Hand
Vivian Malta, Lisa Kolovich, Angelica Martínez Leyva, and Marina Mendes Tavares

Summary: In sub-Saharan Africa women work relatively more in the informal sector than men. Many factors could explain this difference, including women's lower education levels, legal barriers, social norms and demographic characteristics. Cross-country comparisons indicate strong associations between gender gaps and higher female informality. This paper uses microdata from Senegal to assess the probability of a worker being informal, and our main findings are: (i) in urban areas, being a woman increases this probability by 8.5 percent; (ii) education is usually more relevant for women; (iii) having kids reduces men's probability of being informal but increases women's.

13. A Quantitative Analysis of Female Employment in Senegal
Vivian Malta, Angelica Martínez Leyva, and Marina M. Tavares

Summary: Female-to-male employment in Senegal increased by 14 percentage points between 2006 and 2011. During the same period years of education of the working age population increased 27 percent for females and 13 percent for males, reducing gender gaps in education. In this paper, we quantitatively investigate the impact of this increase in education on female employment in Senegal. To that end, we build an overlapping generations model that captures barriers that women face over their life-cycle. Our main findings are: (i) the improvement in years of education can explain up to 44 percent of the observed increased in female-to-male employment ratio and (ii) the rest can be explained by a decline in the discrimination against women in the labor market.

14. Macro-Fiscal Gains from Anti-Corruption Reforms in the Republic of Congo
Giovanni Melina, Hoda Selim, Concepcion Verdugo-Yepes

Summary: This paper argues that oil revenue management and public investment in Congo are vulnerable to corruption as a result of limited transparency and accountability. Corruption has potentially contributed to poor macro-fiscal outcomes. The paper acknowledges the authorities' anti-corruption efforts made so far and proposes further critical reforms to reduce remaining vulnerabilities. Using a dynamic stochastic general equilibrium model results show that, depending on the reforms adopted, the potential additional growth can range between 0.8 to 1.8 percent per year over the next 10 years, and debt can decline by 2.25 to 3 percent of GDP per year over the same period. These results suggest that macro-fiscal gains from anti-corruption reforms could be substantial even under conservative reform scenarios.

15. Do Remittances Enhance Financial Inclusion in LMICs and in Fragile States?
Sami Ben Naceur, Ralph Chami, Mohamed Trabelsi

Summary: This paper explores the relationship between remittances and financial inclusion for a sample of 187 countries over the period 2004-2015, using cross-country as well as dynamic panel GMM regressions. At low levels of remittances-to-GDP, these flows act as a substitute to formal financial channels, thereby reducing financial inclusion. In contrast, when remittance-to-GDP ratio is high, above 13% on average, they tend to complement formal access and usage channels, thus enhancing financial inclusion. This "U shaped" relationship highlights the role of remittance flows in financing household consumption at low levels, while raising formal household bank savings and allowing for more intermediation, at high levels of remittance-to-GDP.

16. The Minimum Wage Puzzle in Less Developed Countries: Reconciling Theory and Evidence
Christopher Adam and Edward Buffie

Summary: We show that a dynamic general equilibrium model with efficiency wages and endogenous capital accumulation in both the formal and (non-agricultural) informal sectors can explain the full range of confounding stylized facts associated with minimum wage laws in less developed countries.

OUTPUT 1.2 – PUBLISHED PAPERS

Topic 1. Modelling and understanding policy choices

1. Macroprudential policy under incomplete information
   Margarita Rubio and D. Filiz Unsal
   The European Journal of Finance

   Summary: In this paper, we use a DSGE model to study the passive and time-varying implementation of macroprudential policy when policy-makers have noisy and lagged data. The model features an economy with two agents; households and entrepreneurs. Entrepreneurs are the borrowers in this economy and need capital as collateral to obtain loans. The macroprudential regulator uses the collateral requirement as the policy instrument. In this set-up, we compare policy performances of permanently increasing the collateral requirement (passive policy) versus a time-varying (active) policy which responds to credit developments. Results show that with perfect and timely information, an active approach is welfare superior, since it is more effective in providing financial stability with no long-run output cost. If the policy-maker is not able to observe the economic conditions perfectly or observe with a lag, a cautious (less aggressive) policy or even a passive approach may be preferred. However, the latter comes at the expense of increasing inequality and a long-run output cost, which could outweigh their macroeconomic and financial stability benefits.

2. Twin Deficits in Developing Economies
   Davide Furceri and Aleksandra Zdzienicka
   Open Economies Review

   Summary: This paper provides new evidence of the existence and magnitude of the "twin deficits" in developing economies. It finds that 1 % of GDP unanticipated increase in the government budget balance improves, on average, the current account balance by 0.8 percentage point of GDP. This effect is substantially larger than that obtained using standard measures of fiscal impulse, such as the cyclically-adjusted budget balance. The results point to some heterogeneity across countries and over time. There is suggestive evidence that the effect tends to be larger: (i) during recessions; (ii) in countries that are more open to trade; (iii) that have less flexible exchange rate regimes; and (iv) with lower initial public debt-to-GDP ratios.

3. Investing in public infrastructure: roads or schools?
   Manoj Atolia, Bin Grace Li, Ricardo Marto and Giovanni Melina
   Macroeconomic Dynamics

   Summary: Why do governments in developing economies favor roads rather than schools in public investment scale-ups? We study this question using a dynamic general equilibrium model and argue that the different pace at which roads and schools contribute to economic growth, public debt intolerance, and political myopia are central to this decision. In a thought experiment with a large return differential in favor of schools, a benevolent government would intuitively devote the majority of an investment scale-up to them. However, the fraction of schools chosen by the government falls with increasing levels of debt intolerance and political myopia. In particular, political myopia is a meaningful explanation for the observed result to the extent that an extremely myopic government

would not invest in schools at all.

4. On the substitution of private and public capital in production
Zidong An, Alvar Kangur and Chris Papageorgiou
European Economic Review

Summary: Most macroeconomic models assume that aggregate output is generated by a specification for the production function with total physical capital as a key input. Implicitly this assumes that private and public capital stocks are perfect substitutes. In this paper, we test this assumption by estimating a nested-CES production function whereas the two types of capital are considered separately along with labor as inputs. The estimation is based on our newly developed dataset on public and private capital stocks for 151 countries over a period of 1960–2014 consistent with Penn World Table version 9. We find evidence against perfect substitutability between public and private capital, especially for emerging and LIDCs, with the point estimate of the elasticity of substitution estimated closely around 3.

Topic 2. Understanding macro-financial linkages

5. Borrowing costs and the role of multilateral development banks: Evidence from cross-border syndicated bank lending
Daniel Gurara, Andrea Presbitero, and Miguel Sarmiento
Journal of International Money and Finance

Summary: Cross-border bank lending is a growing source of external finance in emerging and developing countries and could play a key role in infrastructure and development financing. This paper looks at the role of multilateral development banks (MDBs) on the terms of syndicated loans, focusing on loan pricing. The results show that MDBs' participation is associated with higher borrowing costs and longer maturities—signaling a greater willingness by MDBs to finance risky projects which may not be financed by the private sector. We also show that MDBs are more likely to lend to borrowers located in countries with high credit and financial risk. Overall, our findings suggest that MDBs could play a role in easing access to credit for high risk borrowers.

6. Mobilization Effects of Multilateral Development Banks
Chiara Broccolini, Giulia Lotti, Alessandro Maffioli, Andrea F Presbitero and Rodolfo Stucchi
The World Bank Economic Review

Summary: This study uses loan-level data on syndicated lending to a large sample of developing countries between 1993 and 2017 to estimate the mobilization effects of multilateral development banks (MDBs), that is, their ability to crowd-in capital from private creditors. Controlling for a large set of fixed effects, the paper shows evidence of positive and significant mobilization effects of multilateral lending on the size of bank inflows. The number of lenders and the average maturity of syndicated loans also increase. These effects are present not only on impact but last for up to three years and are not offset by a decline in bond financing. There is no evidence of anticipation effects, and the results are robust to numerous tests controlling for the role of confounding factors and unobserved heterogeneity. Finally, the results are economically sizable, indicating that MDBs can mobilize about seven dollars in bank credit over a three-year period for each dollar invested.

7. [Commodity prices and bank lending](#)
   Isha Agarwal, Rupa Duttagupta and Andrea F. Presbitero
   Economic Inquiry

   Summary: We analyze the transmission of changes in commodity prices to bank lending in a large sample of developing countries. A bank-level analysis shows that a fall in commodity net export prices is associated with a reduction of bank lending, particularly for commodity exporters and during episodes of terms-of-trade decline. We complement this analysis with loan-level data from a credit register, which allows us to identify the effect of a commodity price shock on the supply of credit, controlling for unobserved factors that could drive borrowers' credit demand. Results show that banks with relatively lower deposits and poor asset quality transmit the changes in commodity prices to lending more aggressively.

Topic 3. Building resilience

We have no publication under this topic this year.

Topic 4. Promoting structural change and institutional development

8. [Rethinking development policy: What remains of structural transformation?](#)
   Manoj Atolia, Prakash Loungani, Milton Marquis and Chris Papageorgiou
   World Development

   Summary: This paper takes a fresh look at the current theories of structural transformation and the role of private and public fundamentals in the process. It summarizes some representative past and current experiences of various countries vis-a-vis structural transformation with a focus on the roles of manufacturing, policy, and the changing nature of global production in shaping the trajectory of structural transformation. The salient aspects of the current debate on premature deindustrialization and its relation to a middle-income trap are described as they relate to the path of structural transformation. Conclusions are drawn regarding prospective future paths for structural transformation and development policies as well as for the need for further empirical analysis to inform our current understanding of the process of economic development.

Topic 5. Enhancing inclusion

9. [The Aggregate and Distributional Effects of Financial Globalization: Evidence from Macro and Sectoral Data](#)
   Davide Furceri, Prakash Loungani and Jonathan Ostry
   Journal of Money, Credit and Banking

   Summary: We take a fresh look at the aggregate and distributional effects of policies to liberalize international capital flows—financial globalization. Both country- and industry-level results suggest that such policies have led on average to limited output gains while contributing to significant increases in inequality. The country-level results are based on 228 capital account liberalization episodes spanning 149 advanced and developing economies from 1970 to the present. Difference-in-difference estimation using industry-level data for 23 advanced economies suggests that liberalization episodes reduce the share of labor income, particularly for industries with higher external financial dependence,

higher natural propensity to use layoffs to adjust to idiosyncratic shocks, and higher elasticity of substitution between capital and labor.

10. [Distinguishing constraints on financial inclusion and their impact on GDP, TFP, and the distribution of income](#)
Era Dabla-Norris, Yan Ji, Robert Townsend, and D. Filiz Unsal
Journal of Monetary Economics

Summary: A general equilibrium model featuring multiple realistic sources of financial frictions is developed to study how different constraints interact in equilibrium. We highlight, distinguish, and evaluate their differential impacts and rich interactions. The economic impact of financial inclusion policies in an economy depends not only on which constraint is alleviated, but also on the tightness of other constraints. Policy instruments should target the most binding constraint, which likely varies across countries. Moreover, there are important trade-offs between financial inclusion, GDP, and the distribution of income. The transitional dynamics also differ from those in steady states. Policy makers should consider both.

11. Macroeconomic impacts of non-resource revenue mobilization in CEMAC
Giovanni Melina and Marcos Poplawski-Ribeiro
Applied Economics Letter, forthcoming

Summary: This letter investigates main macroeconomic impacts of enhanced non-resource revenue mobilization in Africa's CEMAC region. Model simulations indicate that non-oil revenue mobilization reduces debt and increases non-resource output in the long term. The mobilization, however, triggers an output decline in the short run and carries undesirable distributional effects. Cash transfers targeting the most vulnerable perform better than untargeted public investments to mitigate such increased inequality.

12. Export Quality in Advanced and Developing Economies: Evidence from a New Dataset
Christian Henn, Jose Romero, Chris Papageorgiou and Nikola Spatafora
IMF Economic Review, forthcoming

Summary: This paper develops new estimates of export quality, based on bilateral data, which are far more extensive than previous efforts. The data cover 166 countries and more than 800 products over the period 1962–2014. The analysis finds that, within any given product line, export quality on average converges rapidly across countries. However, there is also significant cross-country heterogeneity in the growth rate of quality. Institutional quality, liberal trade policies, foreign direct investment inflows, and human capital all promote quality upgrading, although their impacts vary across sectors.

Book chapters (for information only)

We have no publication under this section this year.

OUTPUT 1.3 – FREELY AVAILABLE BOOKS

1. Macroeconomy Policy in Fragile States
    Oxford University Press, *forthcoming*

    Summary: The book comprises 20 chapters by experts in the design and practice of macroeconomic policy in countries facing fragile situations. These resource persons are drawn from academia, IFIs such the IMF, World Bank, ILO, among others, as well as from thinktanks around the globe. The book is geared for practitioners, policymakers, as well as applied economics and political science programs interested in understanding the challenges faced in designing and implementing macroeconomic policies in such situations. The book is also meant to help develop training modules for IMF economists interested in working on fragile states, as well as help inform IMF capacity development in member countries.

OUTPUT 2.1 – COUNTRY APPLICATIONS WITH IMF COUNTRY TEAMS

FPAS framework

We have no publication under this topic this year.

Diversification

1. [Use of diversification toolkit in Nigeria's Article IV](#)

   Summary: In Nigeria, overcoming constraints to economic diversification requires efforts in several dimensions. Staff highlighted the need to: strengthen the business environment, increase public investment efficiency, and accelerate the implementation of the Power Sector Recovery Plan, implement the government's updated financial inclusion strategy, and step up efforts to improve education and health outcomes.

2. [Use of diversification toolkit in Uganda's Article IV](#)

   Summary: Trade development in Uganda: Exports of services have become more important in recent years, which comprised 34 percent of total exports in 2017. Main service export sectors include travel and tourism, ICT, and transport. Coffee and other primary commodity exports have constituted more than half of total exports of goods in 2017. Industry-based exports were hit by security situations in trading partners, but recovery is under way. Uganda has made progress in export product diversification through extensive margin (exporting new products) and intensive margin (balancing the shares of products). Export product quality has increased while the average quality is still lower than the quality demand of importers, which suggests more space to further improve product quality. Imports are driven by private sector imports, along with oil imports and machinery imports. Imports are mainly from Africa, Europe, Middle-East and Asia.

DIG/Investment scaling up/Debt sustainability

3. [Application of DIGNAR model to Mozambique: (Selected Issues)](#)

   Summary: Mozambique is poised to become a major exporter of liquified natural gas (LNG), with significant impact on transforming its economy. If appropriate policies are put in place, LNG may generate long lasting gains, potentially lifting millions out of poverty. This paper addresses the challenges of transforming natural gas resource wealth underground into financial flows to support sustained development while, at the same time, avoiding Dutch disease and boom-bust cycles that are common to many natural resource rich economies. It applies the Debt, Investment, Growth and Natural Resources (DIGNAR) model to analyze the macroeconomic effects of alternative scenarios of scaling-up public investment in a volatile and exhaustible resource revenue environment to meet the country's development needs. The model results indicate that prudent and gradual investment scaling-up is preferable to aggressive, front-loaded investments given, inter alia, absorptive capacity constraints and private sector crowding-out effects. It also shows that external savings— perhaps put in a sovereign wealth fund—would mitigate Dutch disease effects and serve as

much needed fiscal buffer.

4. <u>Application of DIGNAR model to Gabon (Selected Issues)</u>

    Summary: Despite recent progress, the perception of a still weak governance and a high
    level of corruption continue to deter private sector investment and constrain economic
    growth. Vulnerabilities in the fiscal institutional framework constrain effective revenue
    collection and reduce the efficiency of public spending, thus limiting fiscal space for priority
    pro-growth spending. The results of a dynamic stochastic general equilibrium (DSGE) model
    for Gabon suggest that macro-fiscal gains from governance reforms could be substantial.
    The potential additional growth can range from 0.8 to 1.5 percent per year over the next 10
    years, and debt can decline by 1.0 to 2.0 percent of non-oil GDP per year over the same
    period. It is urgent to improve governance and curb corruption to boost domestic revenue,
    enhance public finance management and the quality of spending, and improve the business
    environment to promote private investment and facilitate private sector activity.

5. <u>Application of DIGNAR model to Guyana (Article IV)</u>

    Summary: This Box analyzes the macroeconomic implications of scaling up the pace of
    public investment under two illustrative scenarios, using the Debt, Investment, Growth and
    Natural Resources" (DIGNAR) model. The DIGNAR model is calibrated for Guyana using
    specific macro- and micro-economic data, and cross-country comparison. Public investment
    efficiency is assumed at 59 percent, in line with the findings in 2017 PIMA Assessment
    (relative to 70 percent in LAC and 73 percent in EME). The return on public investment net
    of depreciation is assumed to be 15 percent based on cross-country estimates of marginal
    productivity of capital and close to the average rate of returns on Timor-Leste's public
    investment projects financed by the World Bank and evaluated by the Independent
    Evaluation Group.1 The central government's oil revenues are projected to rise gradually
    from 1.6 percent of GDP to a peak of 5.3 percent of GDP in 2028.

6. <u>Application of DIGNAR model to assesses macroeconomic gains from anti-corruption reform
    in Republic of Congo (Article IV)</u>

    Summary: This note explores the transmissions channels between vulnerabilities to
    corruption and macro-fiscal outcomes in Congo. It focuses on these two sectors because
    they involve the management of massive flows of public funds, and the interaction between
    the public and private actors. With limited transparency and accountability in those sectors,
    collusive institutional arrangements between public and private actors could enable corrupt
    practices that undermine macro-fiscal outcomes. The note also uses the use of Debt,
    Investment, Growth and Natural Resources (DIGNAR) model to assesses macroeconomic
    gains from anti-corruption reform in Congo.

7. <u>Application of DIG model to Madagascar (Selected Issues)</u>

    Summary: The ambitious plan for scaling up public investment requires a careful
    assessment of its impact on growth and debt sustainability. We apply the IMF's DIG model

to estimate the growth and other macroeconomic impact of the planned public investment scale-up in Madagascar. The baseline scenario results are summarized as follows: (i) real GDP per capita growth accelerates from a steady state of 2.7 to 3.5 percent between 2019 and 2023 and stabilizes at 3.4 percent in the long-run, (ii) Private consumption and investment decrease in the short-run, (iii) domestic public, commercial, and total debt closely follow the numbers projected in the macroeconomic framework, and (iv) The current account deficit increases to 4.8 percent of GDP in the medium-term and gradually decreases to above 4 percent in the long-run.

8. [Cameroon: 4th Review Under the ECF](#)

   Summary: Government policy continues to be guided by the long-term development objective of Cameroon becoming an emerging-market economy by 2035. To achieve this objective, the state prioritized public investment in infrastructure and non-oil sectors by increasingly relying on non-concessional sources to finance projects. This has led to a rapid buildup of public debt., which increased from 12.1 in 2010 (post HIPC debt relief) to 35.6 percent of GDP at end-2018, earning Cameroon a high risk of debt distress rating. With a range of external and domestic risks affecting the medium-term outlook, there is continued need to stabilize the economy, prioritize public investment and cap non-concessional external financing of projects. Annex III presented several scenarios to highlight (a) the benefits from continuing reforms that are geared towards removing inefficiencies and prioritizing high-return projects and (b) payoffs from rebalancing the mix of public investment financing away from non-concessional sources (4th Review Under the ECF).

Natural disasters

We have no publication under this topic this year.

Income and Gender Inequality

9. [Laos: Article IV](#)

   Summary: Lao P.D.R.'s latest Article IV Staff Report featured a study on how policies can boost growth, reduce gender pay gaps and increase government revenues in that country. Even though labor force participation rates are relatively equitable in Lao P.D.R, gender gaps persist in formal employment and in hourly wages. The 20-percent gender wage gap is partly associated with females' lower educational attainment. The study thus quantifies the effects of policies promoting girls' education, increasing the formal sector, and reducing barriers that prevent women from achieving their full potential in the labor market.

10. IMF African Department Inclusive Growth Network's peer learning workshops

    Summary: Stefania Fabrizio and Xin Tang presented SPR's engagement in the inequality implications of fiscal policy under the DFID project at the IMF African Department Inclusive Growth Network's peer learning workshops. After giving an overview of SPR's analytical and operational work so far on the role of fiscal policy in enhancing inclusion, they covered the

inequality toolkit developed under the DFID project, which has been applied to more than 10 country applications so far. The presentation was joined by several IMF' mission chiefs and desk economists.

11. Nigeria: Selected Issues

Summary: Education and health outcomes in Nigeria are among the weakest worldwide and are deteriorating in some parts of the country. Access to education is highly unequal across states and individuals' income and gender. Regional differences in health outcomes are vast. Estimations from a micro-founded general equilibrium model suggest that narrowing gaps in education between boys and girls and between individuals at different parts of the income distribution would boost productivity, decrease income inequality, and narrow gender gaps in labor force participation rates and earnings. Closing the gender gap in years of schooling in each income quintile alone would boost long-term GDP by 5 percent, with much higher effects for more ambitious scenarios that also include anti-discrimination policies. Improving health outcomes, in particular for children, will support education outcomes and boost productivity of the labor force. Increased and regular funding for the education and health sector will be critical for supporting a range of reforms that includes all tiers of government.

12. Sierra Leone: Selected Issues

Summary: Indicators of human capital in Sierra Leone have generally improved over the past two decades, despite major setbacks during the Ebola health crisis. However, education and health outcomes continue to lag behind most other countries. The Government's National Development Plan 2019-23 targets substantially boosting human capital, including through their Free Quality Education for All program—the focus of this paper. This paper finds that the gains from providing each child with at least lower secondary education could, in the long-term, boost GDP by 40 percent, substantially lower income inequality, and generate additional revenues through higher individual incomes. Moreover, closing gender gaps in education across income groups or increasing the quality of education could yield gains of 8 and 27 percent of GDP, respectively. With limited fiscal space, evidence-based prioritizing, sequencing and targeting of policies—coordinated across sectors—is critical for sustained improvements to human capital outcomes.

13. Moldova: Article IV

Summary: Republic of Moldova's latest Article IV Staff Report features an estimation of the medium- to long-term macroeconomic impact of replacing tax expenditure with public investment. Tax expenditures result in significant revenue losses and are an inefficient way to extend support compared to better-targeted spending programs. They are also distortive, as they impair the level playing field for businesses. Simulation results show that such policy would yield large growth dividends.

14. Course: Macroeconomic Policies, Structural Reforms, and Income Distribution: Applications of the Heterogeneous Agents Model in Policy Analysis

Summary: The course introduces participants to modern tools for quantitative macro, distributional and welfare analyses. It will then study a recent framework (DSGE model) developed at the IMF for studying the welfare implications of fiscal reforms. The course covers the key features of this framework and discusses how it has been operationalized into several applications for surveillance and program countries. The main focus of the course is a hands-on workshop using the user-friendly toolkit in an actual economy, in which participants will obtain the toolkit for model calibration and simulations, and will learn how to use it to assess how alternative policy packages influence the economy.

15. Course: FAD-ICD-LEG-MCM-RES-SPR Macro-Structural Training, Clinic 3: Diversification, Structural Transformation and Reforms in Developing Economies

Summary: This clinic belongs to one of the series of training courses on macro-critical structural issues. This clinic provides an overview of IMF analytical and policy work on diversification, structural transformation, and reforms and their operationalization in country work by considering diversification not just in trade, but also in the broader domestic economy, in both the type and quality of goods produced and exported. The clinic also discusses the approach and priorities to help guide the Fund in supporting countries' macrostructural policy needs, and some country cases to reinforce the empirical findings and resonate with historical reform patterns.

16. Course: FAD-ICD-LEG-MCM-RES-SPR Macro-Structural Training, Clinic 4: Distributional Impact of Policies and Reforms

17. Summary: This clinic belongs to one of the series of training courses on macro-critical structural issues. The clinic provides an overview of: (i) potential impact of a range of structural reforms on inequality (drawing on the SDN macro-structural policies and income inequality and other pilot countries not included in the SDN); (ii) in-house and outside tools for distributional analysis available to country teams and data requirements; (iii) training available to teams.

18. Course: FAD-ICD-LEG-MCM-RES-SPR Macro-Structural Training, Clinic 7: Labor and Product Markets Reforms

Summary: This clinic belongs to one of the series of training courses on macro-critical structural issues. The clinic provides an overview on labor and product market regulations, macroeconomic effects and available approaches to quantify them. It reviews the available approaches to quantify the impact of reforms: the models, macro- and sector-level panel analysis, micro-level analysis, quantitative case studies. For each approach, the pros and cons as well as examples are discussed.

19. Rwanda: Article IV

Summary: Provided inputs to IMF's team for Rwanda regarding monetary policy frameworks in preparation for IMF article IV consultation. More specifically, the IASOC toolkit—an output of the project on Monetary Policy Frameworks—was used to generate diagnostics of the key strengths and weaknesses of monetary policy frameworks.

OUTPUT 2.2 – UPTAKE BY COUNTRY AUTHORITIES

1. Forecasting and Policy Analysis System (FPAS) Manual

   Summary: A team from Bank of Uganda (BoU) visited IMF headquarters in July 2019 to collaborate with ICD on the bank's "Forecasting and Policy Analysis System (FPAS) Manual". ICD provided feedback to ensure the manual covers all organizational details of the FPAS procedures and is accessible to new users. The manual is intended to be used by BoU internally and presents an overview of the monetary policy framework in Uganda and a broad description of the FPAS in terms of organization of the forecasting process, modeling apparatus - including Quarterly Projection Model - and a comprehensive presentation of codes infrastructure. The document will therefore serve as a user guide for BoU management and for current and prospective economists involved in the forecasting rounds.

2. Presentation to the authorities during the Kenya Article IV mission

   Summary: Gender Inclusion in Kenya: In February, during the 2020 Article IV Consultation mission to Kenya, IMF staff in collaboration with UN Women presented and discussed with authorities the preliminary results of the forthcoming Selected Issues Paper on gender inclusion in Kenya. Kenya has successfully closed gender gaps in access to primary and secondary education. However, gaps in other dimensions such as tertiary education and labor market (including earnings) remain large. The paper finds important GDP and income equality gains from policies such as reducing gender disparities in the informal sector, closing education gaps between boys and girls, and reducing time spent on fetching water.

3. Zambia: Article IV

   Summary: The Bank of Zambia is developing, with Fund TA, a forecasting and policy analysis system (FPAS) to be used as a key input in monetary policy decision making.

4. Honduras: Article IV

   Summary: The authorities are planning to build on recent progress in the transition toward inflation targeting. The Central Bank of Honduras has introduced transactions with collateralized securities in the interbank market, reduced FX surrender requirements by 30 percent, and strengthened its technical capacity to prepare a Forecasting and Policy Analysis System (FPAS).

5. Malawi: Second and Third Reviews Under the Three-Year Extended Credit Facility Arrangement

   Summary: The authorities continue to expand capacity in developing high frequency data, liquidity forecasting, and the forecasting and policy analysis system (FPAS) modeling to support eventual transition toward inflation targeting.

6. Ghana: Customized Training Mission on Developing a Forecasting and Policy Analysis System (FPAS) at the Bank of Ghana.

   Summary: An ICD-led FPAS CT mission visited Accra during October 28 – November 8, 2019 to undertake a series of training sessions dedicated to improving FPAS processes at the Bank of Ghana (BoG). Mission activities contributed toward improving analytical and forecasting capacity at the BoG and better integration of FPAS into monetary policy processes and decision-making. In this context, the mission (i) identified the current status of FPAS components, (ii) provided hands-on training on QPM and NTF tools, (iii) worked with staff on current forecasting round projections, (iv) provided inputs to improve the content of MPC presentations, (v) presented a short overview of FPAS and canonical QPM to MPC members, and (vi) facilitated a staff presentation in the current forecasting round of model-based policy analysis to the MPC. The mission shared with BoG senior management an Executive Summary, which describes mission activities and a set of recommendations, framed within a two-year workplan and aimed to ensure further integration of FPAS processes into policymaking.

7. Vietnam: The ICD TA team delivered remote assistance on FPAS to the State Bank of Vietnam.

   Summary: The mission was synchronized with the inaugural delivery of MPAFx on-line course in which members of the forecasting team at SBV applied. The material of the course was an essential vehicle to introduce the forecasting team to macroeconomic foundations and implementation of quarterly projections model (QPM). The TA team held weekly videoconference calls to discuss the online course material and help increase knowledge absorption at SBV. Combining the online course with the remote support served as an effective trigger to consider more general aspects of economic theory and monetary policy-making practice, allowing to develop favorable conditions for the future mission (planned for May 2020), which will aim at developing and calibrating the initial version of the Vietnam QPM.

8. A course on model-based Monetary Policy Analysis and Forecasting (MPAF) in Vienna.

   Summary: The ICD teams delivered three classroom courses on model-based Monetary Policy Analysis and Forecasting (MPAF), including to participants from central banks in LICs. The course presents organization and processes of the forecasting and policy analysis system (FPAS) in central banks that are seeking to modernize their monetary policy framework. It explains the role of the core quarterly projections model (QPM) in FPAS and provides intensive hands on training on applying the QPM for policy analysis and forecasting.

OUTPUT 2.2.1 – COURSES AND WORKSHOPS OFFERED TO COUNTRY AUTHORITIES

1. [Model-based Monetary Policy Analysis and Forecasting (MPAF.x)](#) online course for country authorities.

   Summary: This online course, presented by the IMF Institute for Capacity Development, introduces participants to quarterly projection macroeconomic models (QPM) developed as a core of forecasting and policy analysis systems (FPAS) in central banks. It reviews a simple canonical QPM and demonstrates how to implement the model in a macroeconomic modelling software and to apply it for hands-on filtration and calibration exercises. The online course will serve as preparatory material and potentially a prerequisite for face-to-face external IMF training and technical assistance on FPAS provided to central banks in low income countries.

2. Ghana: Customized Training Mission on Developing a Forecasting and Policy Analysis System (FPAS) at the Bank of Ghana.

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OUTPUT 3.1 – HIGH-LEVEL POLICY CONFERENCES ATTENDED BY IMF SENIOR STAFF

1. Making the Case for Reform

   Summary: While there is broad agreement on the economic benefits of structural reforms, they often carry short-term costs while most of the economic gains from reforms only materialize over the longer term. On this background, a panel at 2019 IMF-World Bank Annual Meetings discussed the political economy of reform and the challenges with implementing structural reforms. Key takeaways from the event covered: (i) reform priorities: While panelists agreed that the goal is to achieve sustainable growth, there were different views on reform priorities; (ii) reform implementation: Timing, allocation of benefits, as well as the public narrative are important considerations in reform implementation; and (iii) political economy challenges: Panelists noted the challenges associated with the political process in approving reforms, highlighting possible electoral costs to the incumbent.

2. The Macroeconomics of Artificial Intelligence

   Summary: The IMF and the Institute of New Economic Thinking are organized a high-level workshop on The Macroeconomics of Artificial Intelligence. The workshop will bring leading academics and policymakers for a 2-day workshop-March 6 and 7 in Washington DC. The workshop will also have a panel with Kristalina Georgieva (Managing Director, IMF), Joseph Stiglitz (Columbia University), Deborah Greenfield (Deputy Director, International Labor Organization), and Juliana Rotich (Kenyan technologist and entrepreneur). Martin Sandbu of the Financial Times will moderate the discussion.

3. Sustainable Development, Sustainable Debt: Finding the Right Balance

   Summary: Sub-Saharan Africa (SSA) has been facing a dilemma between financing development needs and addressing debt vulnerabilities. SSA countries made remarkable socio-economic progress in the last two decades but development needs remain large. The decline in Official Development Aid (ODA) to SSA by half (from 4 percent of GDP in the 2000s to 2 percent of GDP in 2010s) added to financing challenges. Achieving Sustainable Development Goals by 2030 would require additional financing of some 20 percent of GDP annually at the time when public debt remains elevated at 55 percent of GDP. The conference, jointly organized by the IMF and the Government of Senegal in partnership with the United Nations and Cercle Des Économistes, engaged a wide group of stakeholders in a dialogue on their respective roles in supporting sustainable development in sub-Saharan Africa. The conference identified the obstacles—or missing pieces— for sustainable development and proposed solution for eliminating them.

4. Fostering Diversification to Escape the Middle-Income Trap

   Summary: From February 6 to 7, jointly with AFRITAC South, Bank of Botswana, Delegation of the European Union to Botswana, the Southern African Development Community (SADC) and IMF, DFID organized a high-level conference entitled "Fostering Diversification to

Escape the Middle-Income Trap" in Kasane, Botswana. This conference brought together senior Botswana government officials, representatives from five emerging market and advanced economies that have successfully diversified their economies (including Chile, Costa Rica, Estonia, South Korea and Mauritius), academia, representatives from regional institutions and senior IMF staff including Deputy Managing Director Tao Zhang and Deputy Director in the African Department David Robinson. The conference discussed a range of topics centered on country experiences in advancing diversification. DMD Tao Zhang and Governor of Bank of Botswana Moses Pelaelo delivered opening remarks for the conference.

OUTPUT 3.2 – RESULTS OF PAPERS REFLECTED IN IMF BOARD DISCUSSIONS AND PAPERS

Papers discussed by the IMF Executive Board

1. Review of Implementation of IMF Commitments in Support of the 2030 Agenda for Sustainable Development

   Summary: The paper reviews the implementation of the initiatives the IMF committed to in 2015 to support developing countries in pursuing the 2030 agenda for sustainable development, including (i) strengthening national tax systems; (ii) tackling large infrastructure gaps; (iii) promoting economic inclusion; (iv) the development of domestic financial markets; (v) intensifying engagement in fragile and conflict-affected states; (vi) improving economic statistics; (vii) expanding the financial safety net for developing countries; and (viii) addressing macroeconomic aspects of climate change. The implementation record to date shows that there has been a large scaling up of IMF support for the 2030 development agenda. The IMF has also engaged in other initiatives of direct relevance for supporting the 2030 development agenda, including adopting a framework to assess corruption vulnerabilities and developing a broad framework for assessing the spending levels needed to reach key SDGs. The paper draws lessons learned from the implementation of the various initiative to inform future IMF engagements.

2. Macroeconomic Developments and Prospects in Low-Income Developing Countries—2019

   Summary: This paper is the fifth in a series that examines macroeconomic developments and prospects in low-income developing countries (LIDCs). LIDCs are a group of 59 IMF member countries primarily defined by income per capita below a threshold level. LIDCs contain one fifth of the world's population—1.5 billion people—but account for only 4 percent of global output. The first chapter of the paper discusses recent macroeconomic developments and trends across LIDCs and, using growth decompositions, explores the key drivers of growth performance in LIDCs. A second chapter examines the challenges faced by LIDCs in implementing a value-added tax system, generally seen as a key component of a strong national tax system. The third chapter discusses how financial safety nets can be appropriately tailored to the specific needs of LIDCs, recognizing that an effective safety net is important for ensuring financial stability and underpinning public confidence in the financial system, thereby promoting financial intermediation.

OUTPUT 3.2.1 – RESULTS OF PAPERS REFLECTED IN IMF POLICY PAPERS

Fiscal Monitor/WEO/REO/SDN

1. SDN: The Political Costs of Reforms: Fear or Reality?

   Summary: Many countries are experiencing persistent, weak medium-term growth and limited fiscal space. Against this background, economic policy agendas—in both advanced and developing economies—are focusing increasingly on structural reforms. While there is broad agreement on the economic benefits of structural reforms, the political-economy of reform is less settled. This is because reforms may generate gains only in the longer term while distributional effects may be sizable in the short run, and because governments may lack political capital to confront vocal interest groups. In these circumstances, politicians may hold back on reforms, fearing they will be penalized at the ballot box. The aim of this Staff Discussion Note is to examine whether the fear of a political cost associated with structural reforms is justified by the available evidence, and whether there are lessons from the data about how reform strategies might be designed to mitigate potential political costs. It provides a major addition to recent IMF analysis examining the output and employment effect of reforms.

2. WEO Chapter: Reigniting Growth in Low-income and Emerging Market Economies: What Role Can Structural Reforms Play?

   Summary: Using a newly constructed database on structural reforms, this October WEO chapter finds that a reform push in areas such as governance, domestic and external finance, trade, and labor and product markets could deliver sizable output gains in the medium term. A comprehensive reform package might double the speed of convergence of the average emerging market and developing economy. However, reforms take several years to deliver, and some of them entail greater short-term costs when carried out in bad times; these are best implemented under favorable economic conditions. Reform gains tend to be larger when governance and access to credit are strong, and where labor market informality is higher—because reforms help reduce it. This study has been presented in outreach missions around the world, including to high-level public officials, academia, the private sector, and civil society, with coverage on the Internet, social media and the press.

3. SDN: Women in the Labor Force: The Role of Fiscal Policies

   Summary: Despite the increase in female labor force participation over the past three decades, women still do not have the same opportunities as men to participate in economic activities in most countries. The average female labor force participation rate across countries is still 20 percentage points lower than the male rate, and gender gaps in wages and access to education persist. As shown by earlier work, including by the IMF, greater gender equality boosts economic growth and leads to better development and social outcomes. Gender equality is also one of the 17 United Nations Sustainable Development Goals that 193 countries committed to achieve by 2030

OUTPUT 4.1 – COMMISSIONED PAPERS

1. International Capital Flows, Land Conversion and Wage Inequality in Poor Countries
   Sugata Marjit and Saibal Kar
   Open Economies Review

   Summary: Conversion of land from agricultural to industrial use has met with strong opposition in many developing countries in recent times. A number of relevant papers study welfare effects associated with willful conversion, no conversion or politically forced and manipulated conversion of land into other activities. No study, however, deals with the evolving skilled-unskilled wage gap consequent upon full or partial convertibility of land in the short and the long run. This paper shows that in a multiple-commodity world with land as a crucial input both for agriculture and industry, an influx of capital for supporting industrial production must widen the skilled-to-unskilled wage gap. If the rate of conversion of land exceeds a critical value in the short-run, the wage gap rises. Even in the long run, possibility of full conversion can raise the wage gap if agriculture is—as is indeed the case—labor-intensive in developing countries. Showing the dependence of wage inequality on the degree to which land is convertible into other uses is the paper's unique contribution to the literature.

2. Examining Structural Unemployment in Sub-Saharan Africa: Empirical Evidence from Unobserved Components
   Ashwin Madhou and Tayushma Sewak
   Open Economies Review

   Summary: We apply multivariate filtering techniques to quantify structural unemployment (NAIRU), potential output, output gap and unemployment gap for South Africa, Kenya, Mauritius and Ghana. NAIRU estimates are especially relevant for these inflation-targeting or hybrid inflation-targeting economies, allowing them to assess level of domestic slack and any potential build-up of inflationary pressures. Our findings suggest that increased government spending on education, a competitive exchange rate, and boosting the level of financial development (measured as the market capitalization of listed companies) can play a role in lowering NAIRU in these Sub-Saharan African countries.

3. Building Inclusive States: A Simple Framework
   Daron Acemoglu and James A. Robinson
   Oxford University Press, *forthcoming*

   Summary: A major problem of development is the fragility of state institutions; fragility arises when states are ineffective at doing their job, raising revenues, providing public goods; and when they are also illegitimate and unaccountable. These features are interconnected. People don't want to cooperate with, or cede resources to, a state they cannot influence. We present a simple framework where the key to exiting fragility is a balance between the state and society. The state needs to develop more capacity, but to do this society needs to develop the ability to discipline and control it. We emphasize the existence of a type of "virtuous circle" where there is positive feedback from the organization of the society to that of the state and vice versa – a phenomenon we call the "Red Queen effect". We argue that the way of think about state-building is in terms of both widening the corridor in which the

Red Queen effect operates and devising strategies to get into the corridor. We show how the framework helps account for the diminishing fragility of the state in post-Apartheid South Africa, Somaliland, Sierra Leone and Bogotá, Colombia.

4. Transition Programs: A Theory of the Scaffolding Needed to Build out of Fragility
Paul Collier
Oxford University Press, *forthcoming*

Summary: Many of the countries that are now among the poorest are stuck in a syndrome of fragility. Social, political and economic characteristics interact in a dysfunctional, but locally stable, equilibrium. The transition from this trap requires highly distinctive IFI policies. For much of the time, since the society is trapped by its own internal pressures, no IFI action can ignite transformation. But fragility periodically triggers potential change and during these 'pivotal moments' IFI help can be decisive. However, because the situation is highly constrained, normal programs are liable to be ineffective. The path out of fragility must be set by the government and kept sufficiently simple that success gradually cumulates from seemingly modest early steps. The sinews of state effectiveness can be built, but the process of building them is analogous to erecting scaffolding: it cannot be understood by studying states that have long been in a well-functioning equilibrium.

5. Building Governance Capacity in Areas of Limited Statehood.
Thomas Risse
Oxford University Press, *forthcoming*

Summary: 'Areas of limited statehood' where central government authorities lack the capacity of implementing and enforcing central decisions (the law) and/or lack the monopoly over the means of violence, are ubiquitous in the contemporary international system. However, areas of limited statehood are neither ungovernable nor ungoverned. We find an enormous variation that includes badly governed places but also 'good governance' in areas of limited statehood, sometimes separated only by few blocks. Effective governance – both public service provision and rule-making – in areas of limited statehood depends on three factors and their interplay: first, the legitimacy and social acceptance of the governors by those being governed; second, social trust relations within communities; and, third, the adequate design of governance institutions including financial resources. It follows that International Financial Institutions (IFI) such as the International Monetary Fund (IMF) or the World Bank (WB) should focus on building governance capacity in areas of limited statehood rather than further engaging in state-building which has failed in recent decades despite the investment of substantial resources. If the central state is autocratic and/or predatory, building state capacity will only make a bad situation worse by encouraging rent-seeking as well as repressive behavior. Yet, if the central government is constrained by the rule of law and by democratic institutions, but lacks the capacity to implement and enforce decisions, then capacity-building might help improving governance in areas of limited statehood.

6. Monetary and Exchange Rate Policy in Fragile States
   Christopher Adam and James Wilson
   Oxford University Press, *forthcoming*

Summary: This chapter charts monetary and exchange rate policy aspects of countries' descent into, and exit from, economic fragility and draws out some key normative policy lessons for fragile countries and their external partners. Choices around exchange rate regime and the conduct of monetary policy in fragile states will rarely be fundamental drivers of deep structural fragility, even though they may present as proximate causes. Nor are they likely to be decisive in driving the recovery from extreme fragility. However, monetary and exchange rate policy choices can and do play an important role in affecting movements into fragility as well as shaping potential exit paths. Moreover, choices in these domains affect the likely distribution of rents, including those generated by policy distortions themselves. In doing so, they alter the balance of power and can decisively shift the points of influence for policy, including by outside agents.

OUTPUT 4.1.1 – TOOLKITS

We have no publication under this output this year.

OUTPUT 4.2 – ATTENDANCE OF EXTERNAL RESEARCHERS AT HIGH-LEVEL POLICY CONFERENCES

1. IMF Spring Meetings 2019, April 10, 2019. Paper presented: "Understanding Export Diversification: Key Drivers and Policy Implications".

2. IMF Annual Meetings 2019, October 17, 2019. Seminar featuring findings from the policy paper Review of Implementation of IMF Commitments in Support of the 2030 Agenda for Sustainable Development.

3. Conference on Central Bank Communications: From Mystery to Transparency, May 23-24, 2019. Paper presented: "Monetary Policy Frameworks: An Index and New Evidence".

4. Conference on Monetary Policy Strategy, Tools, and Communication Practices (A Fed Listens Event), June 4-5, 2019. Paper presented: "Monetary Policy Frameworks: An Index and New Evidence".

5. Third Bank Negara Malaysia-IMF Seminar on Comprehensive Approaches to Monetary and Financial Policy Making in ASEAN 5 Countries, July 17, 2019. Presentation based on: "Monetary Policy Frameworks: An Index and New Evidence".

6. World Forum on Climate Justice, June 20, 2019. Paper presented: "Building Resilience in Developing Countries Vulnerable to Large Natural Disasters".

7. Conference of the International Association for Applied Econometrics (IAAE), June 25-28, 2019. Paper presented: "In Search of Information: Use of Google Trends' Data to Narrow Information Gaps for Low-income Developing Countries"

8. Conference of the American Economic Association (AEA) in San Diego, on January 3-5, 2020. Paper presented: "In Search of Information: Use of Google Trends' Data to Narrow Information Gaps for Low-income Developing Countries".

9. Conference of the American Economic Association (AEA) in San Diego, on January 3-5, 2020. Paper presented: "Financial Access Under the Microscope".

10. Conference of NEUDC in Evanston, on October 5-6, 2019. Paper presented: "Financial Access Under the Microscope".

11. Presentation at Graduate Institute of Geneva, November 18, 2019. Paper presented: "Financial Deepening, Terms of Trade Shocks, and Growth Volatility in Low-Income Countries".

12. Presentation at the Africa Training Institute in Mauritius. Paper presented: "Women in the Labor Force: The Role of Fiscal Policies".

13. North American Summer Meeting of the Econometric Society 2019 (Seattle, Washington). Xin Tang presented "The Welfare Implications of Fiscal Consolidations in Low-income Countries."

14. The 2019 Quantitative Society for Pensions and Saving Workshop (Logan, Utah). Marina Mendes Tavares presented "The Welfare Implications of Fiscal Consolidations in Low-income Countries."

15. Departmental seminar at Gettysburg College. Xin Tang taught a one-day course attended by faculty members and undergraduate students, which covered the IMF's efforts to inclusive growth, the toolkit's analytical framework and some practical applications.

16. "Boosting Human Capital, Accelerating Development, and Lowering Inequality in Sierra Leone," presented to the authorities during the Article IV and Second ECF Review Mission to Sierra Leone, in November 2019.

OUTPUT 4.3 – RESULTS DISSEMINATED IN E-NEWSLETTERS

1. June 2019 Newsletter
2. September 2019 Newsletter
3. December 2019 Newsletter
4. March 2020 Newsletter

Extras

Blogs/Article

1. Monetary policy, credit dynamics, and economic activity in developing countries – VoxEU
2. Video and poster on "In Search of Information: Use of Google Trends' Data to Narrow Information Gaps for Low-income Developing Countries" at the 2020 Annual Conference of the American Economic Association (AEA) in San Diego, on January 3-5.
3. IMF Blog: "Growing Through Education in Nigeria".
4. IMF Blog: "Reform Doesn't Have to Cost Votes".
5. IMF Blog: "How To Reignite Growth in Emerging Market and Developing Economies".