Annual Review - Summary Sheet

This Summary Sheet captures the headlines on programme performance, agreed actions and learning over the course of the review period. It should be attached to all subsequent reviews to build a complete picture of actions and learning throughout the life of the programme.

Title: Macroeconomic Research in Low Income Countries		
Programme Value: £9,610,000		**Review Date: June 2015**
Programme Code: 202960	**Start Date: March 2012**	**End Date: March 2017**

Summary of Programme Performance

Year	2013	2014	2015					
Programme Score	**A++**	**A++**	**A++**					
Risk Rating	**Low**	**Low**	**Low**					

Summary of progress and lessons learnt since last review

Once again the Macroeconomic Research in LICs project has exceeded the "High" milestones for virtually every indicator. Even this hides some outstanding details of performance, for example, the extent of use of the diversification toolkit, and the really important issues that the research has been applied to, including in DFID focus countries, in the last 12 months. So the project deserves its continued assessment at A++.

The project also plays a strategic role in the IMF. The IMF is rightly very absorbed by European affairs in recent years since the bulk of its actual lending currently is to European countries. But the IMF remains extremely important in LICs, which are under-researched and have special characteristics. So this project is part of an effort to keep good people, intellectual energy and innovation going around LIC issues, and seems to be working well in this regard.

The project has produced an excellent annual report which is fully annexed to this Annual Review and therefore not cut-and-pasted back into the review template itself. To illustrate performance the AR picks out the examples of Ghana and Ethiopia which are very important DFID focus countries where the research project has been having impact.

The review team noted that the reported level of performance on publications had been achieved with a number of publications in a single isse of Pacific Economic Review. This is a peer reviewed journal so serves as a check on the quality of outputs. However, it cannot be described as a "top journal", as it has a small readership and profile. It would be nice to see articles in some more prestigious volumes. However, in terms of influenceing, internal publication in the IMF is in fact far more important since the IMF has such influence over policy making in LICs.

Summary of recommendations for the next year

The programme is scheduled to end by March 2017 so about two years to go.

Therefore the review team thought it would be better not to spend time thinking about a third phase just yet – perhaps in March 2016 we should look at this again.

The review team thought about whether to ask for more summary evidence products or synthesis papers. These already exist for the debt/ investment theme. The monetary policy theme also produces a lot of papers but these are accessible to the relevant, rather specialist audience in the IMF and central banks.

We agreed that there should be some effort to produce accessible overviews of these and other themes and also if possible one or two books to collect the key findings from the larger themes.

The IMF team should continue to aim for publications in more presitigious and widely read academic journals.

The IMF team might share it's experience with other DFID research programmes, using training programmes to stimulate interest in their research findings.

A. Introduction and Context (1 page)

DevTracker Link to Business Case:	http://devtracker.dfid.gov.uk/projects/GB-1-202960/documents/
DevTracker Link to Log frame:	http://devtracker.dfid.gov.uk/projects/GB-1-202960/documents/

Outline of the programme

There are a number of reasons why DFID is intervening in macroeconomic research. Firstly, the capacity to do macroeconomic research and use the evidence is very small. Secondly, the current global crisis in the macro-economy is creating new challenges for LICs which need to be addressed, whilst diverting scarce resources to solving macroeconomic problems primarily of the developed and emerging world. A key rationale for DFID investment in macroeconomic research is to protect and promote the LIC agenda.

"Macroeconomic Research in Low Income Countries" represents a strategic partnership in research 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 research 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 was extended by a MoU amendment of December 2014 for a further two years to March 2017.

DFID will provide £9.61 million over five years.

The Outcome of the project is 'better macroeconomic policy-making in LICs leads to faster economic growth, job creation and poverty reduction in LICs'. The Impact is: 'a deeper understanding of, and better engagement by IMF policy makers on LIC-specific macroeconomic issues based on robust analysis and evidence, and the development of toolkits to enable LICs to benefit from development in six key thematic areas.'

The objectives of the project are anticipated to encompass the following;

(i) Produce high quality research.
(ii) Strongly encourage the uptake of research by IMF country teams.
(iii) Encourage the uptake of research by country authorities.
(iv) Strengthen engagement by IMF senior policymakers on issues affecting LICs.
(v) Expand the network of researchers working on macroeconomic issues affecting LICs.

B: PERFORMANCE AND CONCLUSIONS (1-2 pages)

Annual outcome assessment

The project has exceeded all its output level “high” targets and has been assessed at A++.

Overall output score and description

The project has scored A++ for each output as it has exceeded the “high” target for every indicator. Outputs are about the production of research working papers and published articles, the engagement of IMF staff teams and country authorities, and about capacity building.

It would seem that the research topics have been very well chosen given the amount of interest the research is able to generate amongst IMF staff teams and country authorities.

Key lessons

This project has just scored A++ for the third consecutive year. Lessons should be about success. Unfortunately the conditions which produce the success of this project may be partly unique: the IMF was very well placed to put together a team on macroeconomic issues in LICs, and this was timely due to the attention demanded by European countries. As well as a really good research team the project enjoys the special advantage that the IMF itself is preeminent in macroeconomic advice for developing countries and so therefore the link into policymaking is very direct.

The team’s success in getting direct applications of more general work in particular countries is very impressive and we should look to emulate this in other programmes.

The IMF team reflected that in general the project ran very smoothly but they did note that hiring staff takes much longer, in some cases, than had been anticipated in their internal planning. So they had learned from experience.

Has the logframe been updated since the last review?

Yes, as part of project extension.

C: DETAILED OUTPUT SCORING (1 page per output)

Output Title	*High quality, policy relevant research on macroeconomic issues affecting LICs Produced*		
Output number per LF	**1**	**Output Score**	***A+***
Risk:	*Low/Medium/High*	Impact weighting (%):	30
Risk revised since last AR?	*Y/N*	Impact weighting % revised since last AR?	*Y/N*

Indicator(s)	**Milestones**	**Progress**
Number of priority research papers produced	36 priority papers produced by March 2015. H (36 papers) M (24 papers) L (12 papers)	40 produced.
Number of research papers accepted for publication in top journals	Six papers published by March 2015. H (6) M (3) L (1)	Nine published
Number of freely available books published.	N/A	N/A

Key Points

This year, the researchers completed ten working papers, bringing the total to 40 over the three years. The papers cover four of the broad topics for this research project: Monetary and exchange rate policies; Public investment, growth, and debt sustainability; Macroeconomic management of natural resource wealth; Role of financial deepening in fostering macroeconomic stability and sustained growth.

The team published nine papers externally:
Monetary policy in low income countries in the face of the global crisis: A structural analysis
Banking market structure and macroeconomic stability: Are low income countries special?
Are Islamic banks more resilient during financial panics?
The sources of business cycles in a low income country
International financial flows in low income countries
Investing volatile resource revenues in capital-scarce economies
Macroeconomics of low income countries: New perspectives
Afghanistan: Balancing Social and Security Spending in the Context of a Shrinking Resource Envelope
On the Sources of Inflation in Kenya: A Model-Based Approach

Total quantity of publications exceeds the high target of six. The one caveat is that most of these articles have been published in a single edition of the Pacific Economic Review. This is a reputable peer reviewed journal but not a “top journal”. Thus the achievement on publications confirms the underlying quality of the project’s outputs but probably does not add very much in terms of profile and readership in either academic or policy circles. In fact it would be hard to do better than the internal IMF publication process in terms of overall profile but publication in a genuinely top journal would draw greater attention to individual pieces.

IMF staff admit this is the case but a) it’s a great challenge to get papers on macroeconomics in LICs into top economic journals – it’s extremely rare, so really journals such as JDE are more the level that this project can aspire to; b) by the standards of other projects it is very early to be generating actual publications and c) there is a pipeline of papers likely to get into much more prestigious journals including JDE.

Summary of responses to issues raised in previous annual reviews (where relevant)

The 2014 AR suggested that the IMF team develop a Phase 2 programme of work. This has been done and is underway.

The 2014 AR also encouraged the production of policy notes or other more accessible forms for communicating the findings. This is in train.

Recommendations

The review team notes that again, there is impressive performance of the programme during the third year of operation.

We continue to encourage the production of policy briefs to broaden the readership and reach of the outputs.

The IMF should continue to attempt to publish in more presitigious and widely read academic journals, which should help push the score for this output back to A++.

Following the AR we should consider a review of the logframe targets going forward – are they too easy for the Fund to exceed. It's not clear that this is the case though, especa.lly given the A+ rather than A++ awarded on Output 1 due to the quality of pulications so far.

Output Title	*IMF Research Products used by IMF country teams and partner authorities.*		
Output number per LF	**2**	**Output Score**	***A++***
Risk:	*Low/Medium/High*	Impact weighting (%):	30
Risk revised since last AR?	*Y/N*	Impact weighting % revised since last AR?	*Y/N*

Indicator(s)	**Milestones**	**Progress**
Application and use of tools and frameworks by country teams.	Application by 18 country teams by March 2015. H (18) M (10) L (6)	13 applications this year, cumulatively 34
Application and use of tools and frameworks by country authorities.	Application by six country authorities by March 2015. H (6) M (4) L (3)	4 in 2014/15, in addition to 3 previously, total 7

Key Points

The researchers have completed 13 applications of their work this year, covering six broad topics: 1) Monetary Policy; 2) Public investment, growth, and debt sustainability; 3) Macroeconomic management of natural resources; 4) Current account norm; 5) Diversification; and 6) Capital Flows.

Note that these "applications" do not include the 14 applications of the diversification toolkit this year (taking the total to 40) – the diversification toolkit has also been very well received within DFID.

The project had four important country authority engagements this year, with the Bank of Ghana, the Central Bank of Kenya, the Ethiopian authorities, and the Bank of Mongolia.

In Ethiopia, the government is pursuing a very ambitious infrastructure improvement plan but has a narrow revenue base and is funding most of this investment out of domestic borrowing. This is crowding out private investment – this is identified as one of two prime growth constraints in DFID's rapid "inclusive growth diagnostic" for Ethiopia (the other prime constraint being terrible infrastructure linking Ethiopia to external markets).
In the context of the IMF Article IV consultation for Ethiopia, IMF staff discussed with the Ethiopian authorities the macroeconomic effects of scaling up public investment using a variant of the open-economy Debt, Investment, and Growth (DIG) model developed by Buffie et al (2012). Simulations of the model were helpful to analyze the macroeconomic implications of different financing schemes. Advice taken was to look to foreign commercial lenders to help finance infrastructure and relieve the pressure on the domestic market. The model is also clear that this creates debt sustainability issues and that revenues need to be raised, or reserved, to service debt and maintain infrastructure.

In Ghana, the country has been facing severe fiscal challenges for several years and inflation around 17 percent, and the government applied for IMF support under an Extended Credit Facility. The project's monetary models have been used in training for BoG and by the IMF team to create projections of monetary policy and inflation under different scenarios in preparation fo the ECF. A US$918m ECF was approved in April 2015 and involves "*strengthening monetary operations and gradually eliminating monetary financing of the budget to improve the effectiveness and independence of monetary policy and bring inflation down to single digit territory*".

While not a separate output in the logframe, courses and workshops offered by the team offered a unique opportunity to engage with country authorities and IMF country teams. During the third year, the team held two courses on Monetary Transmission Mechanisms, a two-day workshop on Macroeconomic Policy and Income Inequality, and a two-day workshop on Gender Responsive Budgeting.

Recommendations

The review team discussed how the country applications come about. For obvious reasons they tend to be quite demand driven. Demand from country teams and country authorities is sometimes stimulated by training courses. If a country is interested in applying a modelling framework to their own situation then this tends to be feasible unless there are very severe data constraints.

Training courses aren't an explicit output of the project although the project do organize them, and also participate in courses organized by others.

Using training courses in this way may sound natural but it is quite rare amongst RED's economic research programmes so the IMG team agreed that they might share some of this experience with other groups during the coming year, for example the IGC.

(NB – the ability to respond to training needs and to conduct country applications is highlighted by Fund team members as something that is certainly only possible because of DFID funding.)

The Fund team is ready to discuss the Ethiopia example further with DFID team in country - DFID have separately funded the involvement of Ed Buffie, a key researcher in the project.

Output Title	*IMF strengthens engagement by senior IMF policy makers on macroeconomic issues affecting LICs*		
Output number per LF	**3**	**Output Score**	***A++***
Risk:	*Low/Medium/High*	Impact weighting (%):	30
Risk revised since last AR?	*Y/N*	Impact weighting % revised since last AR?	*Y/N*

Indicator(s)	**Milestones**	**Progress**
High level policy conferences attended by senior IMF staff reflect findings of research papers funded under this project.	Research findings reflected in six high-level conferences by March 2015. H (6) M (4) L (3)	10 in previous years, 4 in this
Results of the research papers produced reflected in IMF Board discussions, IMF policy papers such as Staff Discussion Notes, policy memos to management, and the like.	Seven IMF Board/SDN/etc. papers using research findings by March 2015. H (7) M (4) L (3)	8 in previous years, 1 this year
Results of the research papers produced reflected in IMF Board papers.	Five IMF Board papers using research findings by March 2015. H (5) M (4) L (3)	6 in previous years, 2 in this

Key Points

The IMF-DFID team was actively involved in the 2014 IMF Annual Meeting:

- Deputy Managing Director Min Zhu drew extensively from the team's diversification work for a Concluding Session on 'Growth and Reform Challenges'
- The team collaborated with the IMF African and Fiscal Affairs Departments in organizing a seminar on 'Fiscal Policy and Income Inequality in sub-Saharan Africa'
- The team organised a Preconference Workshop on 'Capital Flows in Frontier and Emerging Markets'

The results of the research were reflected in two IMF Board papers and one IMF Staff Guidance Note:

- Macroeconomic Developments and Selected Issues in Small Developing States (not publically available)
- Macroeconomic Developments in Low-income Developing Countries
- Staff Guidance Note on Macroprudential Policy – Considerations for LICs

Output Title	*IMF strengthens research capacity by expanding the network of LIC researchers*		
Output number per LF	**4**	**Output Score**	***A++***
Risk:	*Low/Medium/High*	Impact weighting (%):	10
Risk revised since last AR?	*Y/N*	Impact weighting % revised since last AR?	*Y/N*

Indicator(s)	Milestones	Progress
Number of commissioned research papers produced on thematic areas.	Eight commissioned research papers by March 2015. H (8) M (6) L (4)	13 in previous years
Attendance of number of external researchers at high-level policy conferences.	Attendance at six conferences by March 2015. H (6) M (4) L (3)	10 in previous years, 5 in this
Outputs and project disseminated in e-newsletter and updated public webpage (number of updates of e-newsletter and/or webpage)	By March 2015, number of updates: H (10) M (6) L (5)	8 in previous years, 4 in this

Key Points

Five external researchers attended high level policy conferences

Four newsletters were issued, highlighting working papers, conferences, and other activities completed over the preceding three months.

This amounts to a very strong performance – "high" targets are exceeed by around 40 percent. What isn't reflected here are the capacity building impacts of the training and country application activites mentioned in the previous output. In practice these may amount to deeper capacity building impact than these conferences and communications.

D: VALUE FOR MONEY & FINANCIAL PERFORMANCE (1 page)

Key cost drivers and performance

We do not foresee any changes in costs structures due to exchange rates. So far the Fund has been extremely precise in its cost estimates – incorporating salary increases etc without any suggestion that more resources might be requried to complete either phase.

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

The table below shows the cost per paper over the first three years of the project. The team 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. The total staff, contractual, and visiting scholar cost (see Table 1) is thus split between papers and applications. The cost per working paper is approximately $91,000 (£57,000), and the cost per published paper is $227,000 (£142,000). These costs both compare favourably with the DFID benchmark of £150,000 per paper. It is anticipated that the cost per published paper will decrease as more of our working papers from the first three years are accepted for publication – but not all working papers will get pubished.

Table
Cost per Working and Published Paper

Total Staff/Contractual/VS Costs	$4,851,686	£3,032,304
Research Paper Costs	$3,638,765	£2,274,228
Country Applications Costs	$1,212,922	£758,076
Working Papers Produced	40	
Cost Per Working Paper	$90,969	£56,856
Published Papers Produced	16	
Cost per Published Paper	$227,423	£142,139

Assessment of whether the programme continues to represent value for money

Yes. The project is achieving outstanding results (exceeding 'high' targets) and achieving an average cost per working paper of only £57,000.

This project is highly cost effective for several reasons:

- The project strictly follows all IMF guidelines for hiring, travel, and conferences. All contractual hires undergo a competitive process.
- Outputs are produced under firm timeframes and must meet Fund requirements for publication.

- The quality of the papers is further evaluated when the papers are submitted to peer-reviewed publications. To date, there are 16 publications.

The table below compares the number of working/published papers produced under the DFID project to the overall number of LIC-focused IMF working/published papers from 2012-2014. In each year, the share of DFID papers published is higher than the share of the IMF papers published, which speaks to the quality of the team's work.

Table
DFID and IMF Working and Published Papers

	DFID-sponsored WPs			Other IMF LIC WPs		
		Of which published			Of which published	
Year	Number	Number	Share	Number	Number	Share
2012	6	2	33%	32	3	9%
2013	16	3	19%	29	4	14%
2014	8	2	25%	31	0	0%
Total	30	7	23%	92	7	8%

Quality of financial management

Of the approximately $8.5m agreed for Phase 2 in December 2014, only $2.82m remained uncommitted by 10 July 2015.

Direct project management costs represented less than two percent of the total budget; if the Trust Fund management fee is included, program management costs were still below nine percent. This means that the vast majority of the funds available to this project were spent on producing high quality research rather than on project management.

Date of last narrative financial report	31 May 2015
Date of last audited annual statement	7 July 2014

E: RISK (½ page)

Overall risk rating: Low

The overall risk rating for this project has always been low. Clearly as the project gets further through its work programme and continues to score very highly on performance, the risk of overall failure diminishes even further.

F: COMMERCIAL CONSIDERATIONS (½ page)

Delivery against planned timeframe

The IMF team has exceeded almost all of its high output milestones.

G: CONDITIONALITY (½ page)

Update on partnership principles (if relevant)

-

H: MONITORING & EVALUATION (½ page)

Evidence and evaluation

The programme will be subject to a growth team cross portfolio review to assess the programme performance alongside other approaches such as ESRC, IGC, PEDL and UNUWIDER.

This Annual Review

This AR was conducted by the (temporary) SRO Stevan Lee (GRT Senior Economist and Team Leader) and Peter Feinson (GRT), with independent inputs from Matt Butler (Senior Economist DFID Ethiopia), and quality assurance from Tim Hatton (GRT Senior Programme Manager). Stevan Lee visited the IMF in Washington DC as part of the review (a multi-purpose trip).

Smart Guide

The Annual Review is part of a continuous process of review and improvement throughout the programme cycle. At each formal review, the performance and ongoing relevance of the programme are assessed with decisions taken by the spending team as to whether the programme should continue, be reset or stopped.

The Annual Review includes specific, time-bound recommendations for action, consistent with the key findings. These actions – which in the case of poor performance will include improvement measures – are elaborated in further detail in delivery plans. Teams should refer to the Smart Rules quality standards for annual reviews.

The Annual Review assesses and rates outputs using the following rating scale. ARIES and the separate programme scoring calculation sheet will calculate the overall output score taking account of the weightings and individual outputs scores

Description	Scale
Outputs substantially exceeded expectation	A++
Outputs moderately exceeded expectation	A+
Outputs met expectation	A
Outputs moderately did not meet expectation	B
Outputs substantially did not meet expectation	C

Teams should refer to the considerations below as a guide to completing the annual review template.

Summary Sheet

Complete the summary sheet with highlights of progress, lessons learnt and action on previous recommendations

Introduction and Context

Briefly outline the programme, expected results and contribution to the overall Operational Plan and DFID's international development objectives (including corporate results targets). Where the context supporting the intervention has changed from that outlined in the original programme documents explain what this will mean for UK support

B: Performance and conclusions

Annual Outcome Assessment

Brief assessment of whether we expect to achieve the outcome by the end of the programme

Overall Output Score and Description

Progress against the milestones and results achieved that were expected as at the time of this review.

Key lessons

Any key lessons you and your partners have learned from this programme

Have assumptions changed since design? Would you do differently if re-designing this programme?

How will you and your partners share the lessons learned more widely in your team, across DFID and externally

Key actions

Any further information on actions (not covered in Summary Sheet) including timelines for completion and team member responsible

Has the logframe been updated since the last review? What/if any are the key changes and what does this mean for the programme?

C: Detailed Output Scoring

Output

Set out the Output, Output Score

Score
Enter a rating using the rating scale A++ to C.

Impact Weighting (%)
Enter the %age number which cannot be less than 10%.

The figure here should match the Impact Weight currently shown on the logframe (and which will need to be entered on ARIES as part of loading the Annual Review for approval).

Revised since last Annual Review (Y/N).

Risk Rating
Risk Rating: Low/Medium/High

Enter Low, Medium or High

The Risk Rating here should match the Risk currently shown on the logframe (and which will need to be entered on ARIES as part of loading the Annual Review for approval).

Where the Risk for this Output been revised since the last review (or since inception, if this is the first review) or if the review identifies that it needs revision explain why, referring to section B Risk Assessmen

Key points

Summary of response to iprogrammessues raised in previous annual reviews (where relevant)

Recommendations

Repeat above for each Output.

D Value for Money and Financial Performance

Key cost drivers and performance
Consider the specific costs and cost drivers identified in the Business Case
Have there been changes from those identified in previous reviews or at programme approval. If so, why?

VfM performance compared to the original VfM proposition in the business case? Performance against vfm measures and any trigger points that were identified to track through the programme

Assessment of whether the programme continues to represent value for money?
Overall view on whether the programme is good value for money. If not, why, and what actions need to be taken?

Quality of Financial Management
Consider our best estimate of future costs against the current approved budget and forecasting profile
Have narrative and financial reporting requirements been adhered to. Include details of last report
Have auditing requirements been met. Include details of last report

E Risk

Output Risk Rating: L/M/H
Enter Low, Medium or High, taken from the overall Output risk score calculated in ARIES

Overview of Programme Risk
What are the changes to the overall risk environment/ context and why?

Review the key risks that affect the successful delivery of the expected results.

Are there any different or new mitigating actions that will be required to address these risks and whether the existing mitigating actions are directly addressing the identifiable risks?

Any additional checks and controls are required to ensure that UK funds are not lost, for example to fraud or corruption.

Outstanding actions from risk assessment
Describe outstanding actions from Due Diligence/ Fiduciary Risk Assessment/ Programme risk matrix
Describe follow up actions from departmental anti-corruption strategies to which Business Case assumptions and risk tolerances stand

F: Commercial Considerations

Delivery against planned timeframe. Y/N

Compare actual progress against the approved timescales in the Business Case. If timescales are off track provide an explanation including what this means for the cost of the programme and any remedial action.

Performance of partnership

How well are formal partnerships/ contracts working
Are we learning and applying lessons from partner experience
How could DFID be a more effective partner

Asset monitoring and control
Level of confidence in the management of programme assets, including information any monitoring or spot checks

G: Conditionality

Update on Partnership Principles and specific conditions.
For programmes for where it has been decided (when the programme was approved or at the last Annual Review) to use the PPs for management and monitoring, provide details on:

a. Were there any concerns about the four Partnership Principles over the past year, including on human rights?
b. If yes, what were they?
c. Did you notify the government of our concerns?
d. If Yes, what was the government response? Did it take remedial actions? If yes, explain how.
e. If No, was disbursement suspended during the review period? Date suspended (dd/mm/yyyy)
f. What were the consequences?

For <u>all</u> programmes, you should make a judgement on what role, if any, the Partnership Principles should play in the management and monitoring of the programme going forward. This applies even if when the BC was approved for this programme the PPs were not intended to play a role. Your decision may depend on the extent to which the delivery mechanism used by the programme works with the partner government and uses their systems.

H: Monitoring and Evaluation

Evidence and evaluation
Changes in evidence and implications for the programme
Where an evaluation is planned what progress has been made
How is the Theory of Change and the assumptions used in the programme design working out in practice in this programme? Are modifications to the programme design required?
Is there any new evidence available which challenges the programme design or rationale? How does the evidence from the implementation of this programme contribute to the wider evidence base? How is evidence disaggregated by sex and age, and by other variables?
Where an evaluation is planned set out what progress has been made.

Monitoring process throughout the review period.
Direct feedback you have had from stakeholders, including beneficiaries
Monitoring activities throughout review period (field visits, reviews, engagement etc)
The Annual Review process

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

Third Year Annual Report to DFID
(for period April 2014 – March 2015)

Andrew Berg and Catherine Pattillo

May 31, 2015

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1 Program Description

"Macroeconomic Research in Low Income Countries" represents a strategic partnership in research 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 research 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, 2017. DFID will provide £9.45 million over the five years.

Our research agenda encompasses key components of the macroeconomic challenges facing LICs in the current global environment. We attempt in all cases to exploit the comparative advantage of the IMF, focusing on core macroeconomic challenges and bringing modern analytic tools to bear, tools that have proven useful in emerging markets and more developed countries, such as the application of inflation targeting to frontier emerging markets. Many other issues—for example structural reforms and investments to promote health, education—are clearly critical to achieving development and sustained growth. But the macroeconomic issues we focus on are also important, fall squarely in the Fund's area of expertise, and are at risk of being neglected: 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 grave capacity challenges.

The agenda has eight broad topics:

(1) Monetary and exchange rate policies
(2) Public investment, growth, and debt sustainability
(3) Macroeconomic management of natural resource wealth
(4) Macroeconomic policies and income distribution
(5) Role of financial deepening in fostering macroeconomic stability and sustained growth
(6) Growth through diversification
(7) Capital flows
(8) Gender and macroeconomics

IMF staff members and project-funded researchers are collaborating to produce high-quality research papers that are aimed at high-level policymakers in LICs and in the IMF. In order to further maximize the policy impact and potential of the project's research outputs, all papers are being freely shared with DFID and external policy makers both through DFID's research portal and a dedicated project website maintained by the IMF (website). In addition to encouraging uptake of the work both with country and IMF authorities, other crucial components of this joint research project include frameworks and tools designed to influence 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.

Lead and Partner Organizations:

IMF and DFID

Start and End Dates:

Phase I: March 2012 to March 2015
Phase II: April 2015 to March 2017

Total Budget Approved:

£9.45 million over the five years with £3.5 million spent to date.

Countries Covered:

Table 1
Poverty Reduction and Growth Trust (PRGT) Eligible 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.

2 Overview of the Year

Progress and Achievements:

The third year of the project has been highly productive, and we are pleased to report that, with the exception of Output O.1, we have exceeded each of the "high" targets outlined in the logframe. The team's working papers, IMF Board papers, country applications, and conferences are well received by senior IMF staff, IMF Executive Board members, policymakers in LICs, and a wide array of researchers interested in macroeconomic issues in LICs. As Siddharth Tiwari, Director of the Strategy, Policy, and Review (SPR) Department at the IMF, states:

> "The DFID/IMF project continues to play an important innovative role in expanding the scope for us to do policy-relevant applied research on low-income countries (LICs). It has raised the profile of analytical work on LICs in the wider economic research world, while simultaneously enriching Fund policy thinking and enhancing the quality of advice provided to our LIC members. Topics such as monetary policy, public investment and growth, and financial inclusion are of core importance in LICs, but there is just not enough analysis being done that speaks to the realities and policy challenges in these countries. This project helps fill this critical gap. And important pieces of this project's agenda are being incorporated into ongoing work of the Fund."

The team continues to remain active and involved in contributing to IMF Board and policy papers. For example, the Staff Guidance Note on Macroprudential Policy addresses key issues in IMF staff advice on the use of macroprudential policy tools and offers guidance on how operational advice should be tailored to country-specific circumstances and policy settings. The team's research on macroprudential policy in LICs is featured in the supplement "*Staff Guidance Note on Macroprudential Policy: Considerations for Low-income Countries*," which addresses how staff can adapt the macroprudential approach to LICs, where supervisory capacity is often more limited and active macroprudential policy can face greater obstacles.

One of the strengths of this project is the integration of research and Fund operations, and leveraging contacts with academia and other institutions. This year, we have brought on three additional outside collaborators. Janet Stotsky joined as a gender budgeting expert. Ioana Moldovan was at the University of Glasgow and is working on the topic of monetary policy. Andrew Levin was the Special Advisor to Chairman and Vice Chair at the Federal Reserve Board and now works with the team as an advisor on monetary policy research. In March 2015, Andrew Levin was featured as a guest speaker and expert on U.S. monetary policy during an exchange with Caucasus and Central Asia (CCA) central banks, with the goal of facilitating a sustained interactive dialogue among CCA central bank officials and enhancing monetary policy frameworks and operations in the CCA countries. He has also been involved with the project's technical assistance missions to Ghana on monetary policy.

IMF country teams and authorities are actively using the research papers and toolkits developed under this project. Some examples include:

- The public investment, growth, and debt sustainability framework, developed by Buffie et al. (2012) to analyze the effects of public investment scaling-up on growth and debt sustainability, has been widely used in LICs. To date, Fund staff have applied the model and extensions to 12 countries and a custom and economic union—Afghanistan, Benin, Burkina Faso, Cape Verde, CEMAC, Cote d'Ivoire, Ethiopia, Ghana, Liberia, Rwanda, Senegal, Togo, and Yemen—in the context of IMF Article IV consultations, program reviews, and donor meetings. This work has complemented the IMF-World Bank DSF by helping country teams and authorities assess the growth, debt, and fiscal implications of ambitious, front-loaded infrastructure investment plans contained in national development plans or PRSPs. These plans are not fully funded by aid, resulting in a financing gap that could be covered by fiscal adjustment, external commercial or domestic borrowing. Extensions of the model have analyzed the implications of investing not only in infrastructure, but also in energy (e.g., Ethiopia and Senegal) or security (e.g. Afghanistan). On-going applications include Nicaragua and Vanuatu.

- Fund staff also assessed the macroeconomic implications of investment surges, including on debt sustainability, in four natural resource-rich developing countries. Staff applied the model developed in Melina et al. (2014) to Angola, Chad, Kazakhstan, and Mozambique in IMF Article IV consultations and TA missions. The applications showed that a more gradual scaling-up approach could pose smaller risks for debt sustainability, especially in those countries that could use resource discoveries as collateral to borrow—e.g., Mozambique—but where resource revenues might not end being as high as projected. This underscored the role of the volatility of resource prices, the uncertainty of resource output, and the exhaustibility of resource reserves in strategies to avoid excessive and unsustainable borrowing. Furthermore, the applications showed that a sustainable investing approach that combined a gradual investment scaling-up with a resource fund—a fiscal buffer mechanism that saves additional resource revenues in boom times and can be drawn down to support investment spending during low resource revenues—could help protect the economy from boom-bust cycles and therefore support macroeconomic stability—e.g., Angola.

- Delechat et al. (2015) apply the DIGNAR model to Côte d'Ivoire, Guinea, Liberia, and Sierra Leone and investigate options for scaling up public investment and expanding social safety nets in a general equilibrium setting. Other ongoing applications of the DIGNAR model include Niger, Myanmar, and Mongolia.

- In the context of the IMF Article IV consultation for Ethiopia, IMF staff discussed with the Ethiopian authorities the macroeconomic effects of scaling up public investment using a variant of the open-economy Debt, Investment, and Growth (DIG) model developed by Buffie et al (2012). Simulations of the model were helpful to analyze the macroeconomic implications of different financing schemes for the authorities' investment program as an important component of the appropriate policy mix to preserve macroeconomic stability and debt sustainability.
- Staff continued to provide technical assistance (TA) to central banks while the large share of funding needs have been taken up by the IMF Regional Technical Assistance Centers (RTACs) to incorporate the project's outcomes into the IMF core functions. TA in monetary policy analysis and forecasting was provided to central banks of Kenya, Uganda, Rwanda, Tanzania, Mozambique, Ghana, and India (for more details see section Outcomes and Impacts). In addition, four staff from the Bank of Uganda visited the IMF in July and November 2014 to work with a team of IMF economists on the monetary transmission mechanism in Uganda. The workshop strengthened the Bank's capacity to analyze micro-data from a large credit registry and provided training on econometric analysis using STATA. It also set the stage for a collaborative research program and concluded with a presentation on the response of credit aggregates to large monetary policy shocks in Uganda during 2010-2013.

- Fund staff have provided training on the Public Investment, Growth, and Debt Sustainability framework. Training on the model and how to use it was offered to the Rwandan, Liberian, and Mongolian authorities in their countries. The Liberian authorities also visited Fund headquarters to continue this training. Internal training has been also provided to Fund economists in collaboration with the Fund's Institute for Capacity Development (ICD), and a module on these frameworks is now part of the Online Course on Debt Sustainability Analysis (DSAx) led by ICD. A user-friendly front-end will be soon released helping to disseminate and facilitate the use of these model-based frameworks.

- The team offered a course titled "Macroeconomic Management in Resource Rich Countries" in March 2015. The participants were mid- to senior-level government officials in ministries of finance, economy, and planning, or in central banks, who provide advice on macroeconomic policies or who are involved in policy implementation in RRCs.

- A goal of the IMF-DFID project is to expand the network of researchers working on macroeconomic issues in LICs. The "Macroeconomic challenges Facing Low-Income Countries" conference was held in January 2014, bringing in authors who were new to the field of macro LIC research. Following the conference, two of the 13 commissioned papers for this conference were issued as working papers, and six papers from this conference and a special issue paper titled "Macroeconomics of Low-Income Countries: New Perspectives" were published in the February, 2015 issue of the *Pacific Economic Review*.

Challenges and Disappointments:

Institutional challenges remain. As IMF and DFID procedures change over time and/or become more complex, we must ensure that the project is in compliance. This requires frequent attention and cross-departmental coordination at the IMF.

Mainstreaming DFID-related work into the Fund remains a goal and a challenge. However, we have made progress in this area. For example, in our work on monetary policy, the past year was a significant step in integrating DFID-related work into the main work streams of the Fund. The role of African Regional Technical Assistance Centers (AFRITACs) has increased along with the interest in IMF area departments and country teams in upgrading skills in the area of Forecasting and Policy Analysis Systems (FPAS). We organized, together with the African Training Institute and in collaboration with AFRITAC South, East AFRITAC, and AFRITAC West II, a peer-to-peer conference in March, 2015 in Mauritius on Forecasting Frameworks for Forward-Looking Monetary Policy.

Two AFRITACs have integrated the DFID-related TA into their workplans, and AFRITAC West II is going to cooperate on similar ongoing TA in Ghana. The challenge going forward is to continue to integrate DFID-related work into the internal work of the Fund. We have begun to provide regular support to the IMF Uganda and Ghana country teams during preparations for their discussions with country authorities. In the next year, we plan to build sufficient capacity to allow us to provide additional country teams with more systematic support.

Lessons Learned:

Over the last three years, we have learned that "uptake" and research require different management and quality control methods. Increasing the uptake of our work typically requires close collaboration with other departments (such as the African Department) as well as with central bank staff and country authorities whereas our work on research papers may or may not involve co-authors from outside our divisions.

There is high value in engaging "new blood" directly in operations as well as related work. A prime example is Andrew Levin, a former senior advisor to Federal Reserve Chairs Bernanke and Yellen whose past work focused exclusively on advanced and emerging markets. Now however, during his involvement with the DFID project, he has been heavily engaged in providing technical assistance to Ghana and involved in ongoing research on the monetary policy in low-income countries Board paper. The design of this project and the package of activities is like a "crash course" that allows the "new blood" staff to be productive much more quickly than if they started to work on research on low-income countries solely on their own.

DFID contractual staff interested in transitioning to regular IMF staff positions have seen continued success in securing these positions. This is another way of integrating researchers who were typically new to LIC research into the IMF.

3 Logframe Outputs

This research project has four main output categories:

1) Produce high quality, policy relevant research on macroeconomic issues affecting LICs.
2) IMF research product produced under this project used by IMF country teams and partner authorities.
3) IMF strengthens engagement by senior IMF policymakers on issues affecting LICs.
4) IMF strengthens capacity building by expanding the network of LIC researchers.

Table 3 provides a summary of the research outputs for the first two years of this project. As can be seen in the table, we have met, and in many cases exceeded, the "High" target for each output.

Table 3
Logframe Outputs

	Type of Output	Year 1 Outputs	Year 2 Outputs	Year 3 Outputs	Total	Output Targets for End of Year 3	
1.1	Working Papers	13	17	10	40	H M L	36 24 12
1.2	Published Papers	1	6	9	16	H M L	6 3 1
2.1	Uptake by IMF Teams	9	12	13	34	H M L	18 10 6
2.2	Uptake by Authorities	1	2	4	7	H M L	6 4 3
3.1	High-Level Policy Conferences attended by senior IMF staff	6	4	2	12	H M L	6 4 3
3.2	Results of papers reflected in IMF board discussions and policy papers	4	4	3	11	H M L	7 4 3
3.2.1	Results of papers reflected in IMF board papers	3	3	2	8	H M L	5 4 3
4.1	Commissioned Papers	0	13	0	13	H M L	8 6 4
4.1	Attendance of External Researchers at High-Level Policy Conferences	6	5	5	16	H M L	6 4 3
4.3	Outputs disseminated in e-newsletter and updated public web page	2	4	4	10	H M L	10 6 5
O.1	Thematic areas of IMF policy influenced and made LIC-specific	3	2	0	5	H M L	6 3 2

<u>Output 1: Produce high quality, policy relevant research on macroeconomic issues affecting LICs</u>

1.1 – Working papers

This year, we completed ten working papers, bringing the total to 40 over the three years. The papers cover four of the broad topics for this research project: Monetary and exchange rate policies; Public investment, growth, and debt sustainability; Macroeconomic management of natural resource wealth; Role of financial deepening in fostering macroeconomic stability and sustained growth.

a) Monetary and Exchange Rate Policy in Low-Income Countries

The goal of our research on monetary and exchange rate policies in LICs is to advance the understanding of existing regimes as well as the macroeconomic environment in which monetary policy operates. This year, we have completed four working papers.

1. Charry et al. (2014) develop a simple semistructural model for the Rwandan economy to better understand the monetary policy transmission mechanism. Results are consistent with evidence for other countries in the region and suggest that food and oil prices as well as the exchange rate have accounted for the bulk of inflation dynamics in Rwanda.

2. Portillo and Zanna (2015) develop a tractable small open-economy model to study the first-round effects of international food price shocks in developing countries. The results cast some doubt on the view that international food price shocks are inherently inflationary in developing countries.

3. Houssa et al. (2015) examine the role of global and domestic shocks in driving macroeconomic fluctuations for Ghana, using results for South Africa to document the difference between two economies with similar structures but different levels of development. The paper finds that global shocks play a more dominant role in South Africa than in Ghana.

4. Farooq and Zaheer (2015) compare Islamic and conventional banks during a financial panic in Pakistan. Results show that Islamic bank branches are less prone to deposit withdrawals during financial panics, tend to attract (rather than lose) deposits during panics, grant more loans during financial panics, and make lending decisions less sensitive to changes in deposits, suggesting that greater financial inclusion of faith-based groups may enhance the stability of the banking system.

b) Public Investment, Growth, and Debt Sustainability

On the topic of public investment, growth, and debt sustainability, many LICs are working to deliver on an ambitious promise to scale up public investment to meet huge needs in infrastructure, energy, and other critical sectors. This scaling up however, is often funded by non-concessional loans so that attention to debt sustainability is important. To examine these issues, our team has completed four working papers this year.

5. Adam and Bevan (2014) explore the macroeconomic implications of the "recurrent cost problem" which governments need to address to ensure operations and maintenance expenditures are sufficient to sustain the flow of productive public capital services to private factors of production, and examine its resolution in a context that recognizes that taxation is distortionary.

6. Warner (2014) examines whether big infrastructure and public capital drives have succeeded in accelerating economic growth in developing countries. On average the evidence shows only a weak positive association between investment spending and growth and only in the same year. Case studies indicate that public investment drives tend eventually to be financed by borrowing and have been plagued by poor analytics at the time investment projects were chosen, incentive problems and interest-group-infested investment choices.

7. Ghilardi and Sola (2015) study the fiscal implications for the Beninese economy of scaling up of public investment when the government is subject to spending and tax collection inefficiencies. The paper finds that the higher fiscal burden required to preserve fiscal sustainability would negate the welfare gain of higher public investments.

c) Macroeconomic Management of Natural Resources

Our third topic of research focuses on the management of natural resources in LICs. Our work in this area will assist country authorities in LICs to manage natural resource revenues by examining the macroeconomic consequences of different savings and investment strategies. Research on this topic also examines the current account norm; that is, when a country receives a resource windfall, the appropriate current account deficit depends on the balance between investment at home and abroad (saving in a sovereign wealth fund). We also look at efficient government investment and the role that the private sector can play even when externalities are present.

8. Deléchat et al. (2015) focus on Côte d'Ivoire, Guinea, Liberia, and Sierra Leone in investigating options for scaling up public investment and expanding social safety nets in a general equilibrium setting. Results show that a sustainable non-resource deficit target is robust to the high uncertainty of resources output and prices, while delivering growth benefits through higher public investment. The sustainable scaling-up magnitudes, however, depend on the size of projected resource revenue and absorptive capacity. Adding a social transfer raises private consumption, suggesting that a fraction of the resource revenue could be used to expand safety nets.

d) Financial Deepening and Macroeconomic Stability and Sustained Growth

Financial deepening and macro-stability has been identified as a priority area in the years ahead for the Fund, and our team has produced another working paper on this important topic this year.

9. Dabla-Norris et al. (2015) (also available as an NBER working paper) develop a micro-founded general equilibrium model with heterogeneous agents to identify pertinent constraints to financial inclusion. Results suggest that alleviating different financial frictions have a differential impact across countries, with country-specific characteristics playing a central role in determining the linkages and trade-offs among inclusion, GDP, inequality, and the distribution of gains and losses.

10. Papi et al. (2015) look at the effects of IMF lending programs on banking crises in a large sample of developing countries over the period 1970-2010. Controlling for the standard determinants of banking crises, results indicate that countries participating in IMF-supported lending programs are significantly less likely to experience a future banking crisis than non-borrowing countries.

Output 1.2 - Published Papers:

During the third year, we published nine papers externally.

The six papers below are published in the February, 2015 issue of the *Pacific Economic Review*.

1. Monetary policy in low income countries in the face of the global crisis: A structural analysis
   Alfredo Baldini, Jaromir Benes, Andrew Berg, Mai C. Dao and Rafael A. Portillo
2. Banking market structure and macroeconomic stability: Are low income countries special?
   Franziska Bremus and Claudia M. Buch
3. Are Islamic banks more resilient during financial panics?
   Moazzam Farooq and Sajjad Zaheer
4. The sources of business cycles in a low income country
   Romain Houssa, Jolan Mohimont, and Christopher Otrok
5. International financial flows in low income countries
   Philip R. Lane
6. Investing volatile resource revenues in capital-scarce economies
   Christine Richmond, Irene Yackovlev, and Shu-Chun S. Yang

A special issue paper by Camelia Minoiu and Galina Hale (Federal Reserve Bank of San Francisco) was also featured in the February, 2015 issue of the *Pacific Economic Review*.

7. Macroeconomics of low income countries: New perspectives

A paper by Aqib Aslam, Enrico Berkes, Martin Fukac, Jeta Menkulasi, and Axel Schimmelpfennig was published in the September, 2014 issue of the *Asian Development Review*.

8. Afghanistan: Balancing Social and Security Spending in the Context of a Shrinking Resource Envelope

Andrle et al. develops a semi-structural new-Keynesian open-economy model to study sources of inflation in Kenya and was published in the December, 2014 issue of the *South African Journal of Economics.*

9. On the Sources of Inflation in Kenya: A Model-Based Approach

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

We have been collaborating closely with country teams and partner authorities over the third year of the project. These efforts have resulted in 13 different country applications of the models and uptake of the work by country authorities in Ethiopia, Ghana, Kenya, and Mongolia. In addition, the team has offered workshops, training, and courses to IMF staff and country partner authorities.

Output 2.1 - Country Applications with IMF Country Teams:
We have completed 13 applications covering six broad topics: 1) Monetary Policy; 2) Public investment, growth, and debt sustainability; 3) Macroeconomic management of natural resources; 4) Current account norm; 5) Diversification; and 6) Capital Flows.

a) Monetary Policy

1. Ghana

The project team helped the IMF country team to prepare medium-term projections, and formulate advice on monetary policy issues in advance of the Bank of Ghana (BOG) Monetary Policy Committee (MPC) meetings. The conclusions were summarized in confidential memorandums sent to the BOG authorities before the MPC meetings to communicate IMF views regarding the monetary policy stance. This initiative has become particularly important with Ghana's request for and subsequent approval of a loan under the IMF's Extended Credit Facility.

2. Uganda

The project team regularly supported the IMF country team in assessing the appropriate monetary policy stance and preparing inflation forecasts before country reviews under Uganda's Policy Support Instrument program. The country team appreciated the support and has expressed interest in updating medium-term projections and consulting on monetary policy stance analysis on a regular basis before each Bank of Uganda MPC meeting.

3. Rwanda

The project team helped the IMF country team to extend the semi-structural macroeconomic model for Rwanda from Charry et al. (2014). The model was adapted to reflect money targeting framework of the National Bank of Rwanda and was used to analyze past money target misses. The analysis showed that the majority of the target misses can be explained by monetary policy shocks and the instability of money demand (particularly due to changes in velocity and the money multiplier).

b) Public investment, growth, and debt sustainability

4. <u>Ethiopia: 2014 Article IV Consultation</u>

IMF staff examined the macroeconomic effects of scaling up public investment using a variant of the model developed by Buffie et al. (2012). The customized model included: (i) a state-owned energy sector that exports electricity to neighboring countries and sells to firms and households at controlled, low prices (i.e., below shadow prices); and (ii) a state-owned banking sector that fixes interest rates and lends a large fraction of deposits to the public sector. After calibrating the model to capture Ethiopia's key characteristics, policy scenarios revealed that, despite positive long-run growth effects, transition challenges and trade-offs accompany different financing strategies. For example, reliance on bank borrowing requires substantial fiscal adjustment to prevent macroeconomic instability and crowds out the private sector. External commercial borrowing eases the fiscal adjustment and allows public investment to increase without crowding out private investment. These gains have to be balanced against the risks associated with significant increases in public external debt to GDP ratios. The tradeoffs in other scenarios involving gradual increases in energy prices and slower scaling up of public investment were also analyzed.

5. <u>Mauritania: Selected Issues</u>

Mauritania's IMF Article IV consultation focused on the issues of natural resource management, public investment and debt sustainability. Staff presented the analytic results to authorities. Mauritania—a LIC endowed with significant mining resources—has embarked on an ambitious public investment program to address infrastructure gaps and support growth in the non-extractive sectors of the economy, with the objective of achieving faster job creation and poverty reduction. This study applies the Debt, Investment, Growth and Natural Resources (DIGNAR) model to analyze the benefits of higher public investment and the impact of the associated financing requirements on the country's debt and fiscal policy path. The model simulations suggest that authorities should be prudent regarding their investment plans, in particular in the event of further declines in iron ore prices, and should be ambitious in improving their investment management capacity. In particular, their currently planned public investment path will be costly in terms of foregone private consumption in the medium run—including under current commodity price projections.

6. Central African Economic and Monetary Community (CEMAC): Select Issues
The CEMAC application of the Buffie et al. (2012) model explores the nexus of public investment scaling up, debt sustainability, and oil resources. The main findings are:

1) CEMAC's current public investment programs would lead to a public-debt-to-GDP ratio of 46 percent in 2030 (compared to the current level of 22 percent). Beyond 2020 when the public investment scaling-up would be completed, public spending would still need to remain elevated in order to maintain the accumulated stock of public capital.
2) An increase in the efficiency and in the return of public capital will reduce public debt sustainability concerns while enhancing non-resource growth.
3) Oil discoveries required to keep debt stable at around 30 percent of GDP beyond 2030 would need to be large enough to allow the oil revenue-to-GDP ratio to rise by 4.5 percentage points above its baseline level, starting in 2015. A negative shock to oil revenue of the same magnitude would lead to an oil-revenue-to-GDP ratio close to 60 percent in 2030.

c) Macroeconomic Management of Natural Resources:

7. The Democratic Republic of Congo: Article IV Consultation
The Democratic Republic of the Congo: Selected Issues
Joining the IMF Article IV consultation mission in Congo, the team applied the Debt, Investment, Growth and Natural Resources model based on Buffie et al. (2012), Berg et al. (2013) and Melina et al. (2014) to analyze a projected decline in oil revenue, which poses a challenge for the design of public investment paths that can foster economic growth while ensuring fiscal and debt sustainability. Simulations show that higher public capital can be achieved with structural reforms rather than with aggressive frontloading of public investment, as this second approach puts pressure on the resource fund and public debt. Work continues on extending the model framework to study policy options for other countries that are experiencing an oil well production decline. The model simulations highlight the importance of a prudent approach to public investment.

8. Niger: Selected Issues
In Niger's IMF Article IV consultation, Staff discussed natural resource management, public investment and debt sustainability issues with the authorities. Niger's medium to long term economic prospects are favorable, given its mineral resources endowment and the ongoing mining extraction, which will turn the country into a natural resource exporter. Designing a sustainable public investment path is an important policy issue given the projected boom in natural resource revenues. This selected issues paper summarizes the analytical results from a dynamic stochastic general equilibrium (DSGE) model tailored to resource-abundant, small, open developing countries, to assess debt sustainability and growth impacts from a large public investment scaling-up in the face of a natural resource revenue boom.

9. Myanmar: 2014 Article IV Consultation
Natural gas revenues represent an opportunity to expand public investment which, if properly planned and executed, can help close infrastructure gaps and increase

productivity and growth. However, international experience points to the dangers of borrowing against future revenues to accelerate investment which can lead to absorption capacity constraints and threaten debt sustainability. To analyze these issues staff applied the DIGNAR model, which explicitly takes into account the impact of scaled-up investment on economic growth and existing capacity constraints due to low public investment efficiency. Simulations were run around two potential public investment paths and two alternative gas revenue scenarios. The results of this work were produced in collaboration with the DFID team and presented during the mission to representatives of the Ministry of Finance. Simulations indicate that future gas revenue streams in Myanmar should be used to finance a gradual scaling up in public investment while building fiscal space to help maintain a stable macroeconomic environment.

d) Current Account Norm

10. Congo: 2014 Article IV Consultation

The 2014 Article IV for Republic of Congo used the model developed in Araujo et al. (2013) to assess external sustainability. In particular, the model was used to study the current account dynamics for the country from 2013 to 2019. Because the model captures capital scarcity, which is pervasive in many low-income countries, the returns to public and private capital are higher than the interest rate earned on international assets. Therefore it becomes profitable to invest natural resource revenues domestically instead of saving them abroad. When calibrated to capture several structural conditions of the Congolese economy—e.g., public investment inefficiencies, absorptive capacity constraints, country risk premia, as well as to match several macroeconomic ratios (relative to GDP) for 2013—the model pointed out to some mild overvaluation of the real exchange rate, in contrast to the results from other traditional external sustainability approaches, which do not take account the particular features of resource-rich capital-scarce countries mentioned. The results were discussed with the authorities and featured in the Article IV staff report.

11. Gabon: 2014 Article IV Consultation

Methodology developed by the team solves for a current account norm based on a small open economy model with private and public investment and several frictions such as absorptive capacity constraints, inefficiencies in investment, and borrowing constraints. Results from this methodology suggest an overvaluation of 9.9 and 9.7 percent under cost overrun assumptions of 40 and 20 percent respectively. Higher absorptive capacity constraints are associated with higher current account benchmarks as it is optimal to reduce the pace of investment.

e) Diversification Toolkit

12. A diversification toolkit enables country teams to assess the potential for structural transformation and quality upgrading. Several applications of the toolkit have been completed, and more are underway. This year, 12 internal requests as well as two external requests have been made for the diversification toolkit, bringing the total to thirty. In the coming year, the toolkit will be expanded to cover services, and training will be offered to Fund staff and country authorities.

f) Capital Flows

13. Capital Account Liberalization Index:

The idea of measuring capital account openness is not new, but very few studies have focused on low-income countries, mainly constrained by the lack of an appropriate index. To fill this gap, we construct a de jure index based on information in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*. The index covers 168 countries with information on 10 types of asset categories over the period 1996 - 2013 making it one of the most comprehensive indices available, particularly for low-income countries. Based on this index, we showcase stylized facts on the openness of the capital account including its evolution, regional characteristics, sequencing, etc. We also show potential applications of this index including the link between de jure capital account liberalization with de facto capital flows. As this index is based on disaggregated asset types, we are able to capture the de jure liberalization of a particular asset category and its impact on actual capital flows.

Output 2.2 - Uptake by Country Authorities:
We have had four successful country authority engagements this year.

1. Ghana
At the request of the Bank of Ghana (BOG), a technical assistance team visited Accra in February, 2015, to assess the BOG's policy formulation and communication, and to propose a plan for a subsequent technical assistance (TA) in these areas. In line with an intention to reinforce the existing inflation targeting (IT) framework, the objectives of this mission were to: (i) identify the main gaps in the current IT framework in the areas of policy formulation and communication, and (ii) assess the current state of the forecasting and policy analysis system (FPAS) in place at the BOG. The mission prepared a proposed plan for systematic TA to assist the BOG in three areas: i) adjusting the processes and the organization structure to facilitate monetary policy formulation, ii) strengthening BOG external communication, and iii) ensuring sustainable forecasting and analytical capacity. The staff are currently working with the BOG on finalizing the TA plan.

2. Kenya
The uptake of the DFID financed technical assistance for the Central Bank of Kenya (CBK) has increased significantly. The analytical team of the CBK has been providing regular updates of the medium-term inflation forecast and related policy recommendations at each CBK Monetary Policy Committee (MPC) meeting. In order to successfully adopt the FPAS, the CBK Research Department (now Economics Department) was restructured (including establishing a formal forecasting team), and organization of the forecasting process was improved and formalized.

3. Ethiopia
In the context of the Article IV for Ethiopia, IMF staff discussed with the authorities the macroeconomic effects of scaling up public investment using a variant of the open-economy Debt, Investment, and Growth (DIG) model developed by Buffie et al. (2012). Simulations of the model were helpful in analyzing the macroeconomic implications of different financing schemes for the authorities' investment program as an important component of the appropriate policy mix to preserve macroeconomic stability and debt sustainability. Besides the features included in the DIG model, the customized model for Ethiopia incorporated: (i) a state-owned energy sector that exports electricity to neighboring countries and sells to firms and households at controlled, low prices; and (ii) a state-owned banking sector that fixes interest rates and lends a large fraction of deposits to the public sector. The model and the investment program were calibrated to capture the key characteristics of Ethiopia's Growth and Transformation Plan. Model simulations showed that reliance on domestic bank borrowing would require substantial fiscal adjustment to prevent macroeconomic instability, while the surge in public investment would also crowd out private investment and trigger a sharp increase in inflation in the short run. By contrast, external commercial borrowing would allow public investment to increase without having cuts in recurrent

expenditure, temporary crowding-out of private investment, and a sharp increase in inflation. These gains would have to be balanced against the risks associated with significant increases in the ratios of non-concessional debt and total external debt to GDP. The tradeoffs in other scenarios involving gradual increases in energy prices and slower scaling up of public investment were also analyzed.

4. Mongolia
IMF staff provided technical assistance to the authorities from Bank of Mongolia on debt sustainability modeling for a natural-resource-rich economy. The staff discussed various features of the model relevant for Mongolia and trained the authorities on Matlab and Dynare to apply these models for policy analysis. The staff also presented a paper 'From Natural Resource Boom to Sustainable Economic Growth: Lessons for Mongolia' at the Bank of Mongolia as part of the IMF Article IV policy consultation.

Courses and Workshops:
While not a separate output in the logframe, courses and workshops offered by the team offer a unique opportunity to engage with country authorities and IMF country teams. During the third year, we held two courses on Monetary Transmission Mechanisms, a two-day workshop on Macroeconomic Policy and Income Inequality, and a two-day workshop on Gender Responsive Budgeting.

1. Analyzing the Monetary Transmission Mechanism in Uganda
Four staff from the Bank of Uganda visited the IMF in July and November 2014 to work with a team of IMF economists on the monetary transmission mechanism in Uganda. The workshop strengthened the Bank's capacity to analyze micro-data from a large credit registry and provided training on econometric analysis using STATA. It also set the stage for a collaborative research program and concluded with a presentation on the response of credit aggregates to large monetary policy shocks in Uganda during 2010-2013. Camelia Minoiu (IMF), Andrea Presbitero (IMF), Jose Luis Peydro (UPF/CEPR), and two colleagues from the Bank of Uganda are preparing a paper and plan to issue it in the IMF working paper series in the summer of 2015.

2. Macroeconomic Policy and Income Inequality
A two-day workshop on "Macroeconomic Policy and Income Inequality" was held in September, 2014 at the IMF headquarters and brought together academics and policy makers from top institutions around the world. Attendees discussed financial deepening, commodity prices, trust and networks in insurance markets, transaction costs, structural transformation, and microfinance and their impacts on inequality. Many of the papers use macroeconomic models linked to micro data to examine distributional questions.

3. Workshop on Gender Responsive Budgeting
A two-day workshop on Gender Responsive Budgeting was held on March 30-31, 2015 at the IMF headquarters. Attendees included the authors involved in the work on the six regional chapters along with IMF staff from the African; Asia and Pacific; and Fiscal Affairs Departments. The team finalized the template for the regional survey chapters and began discussions on the design for the toolkit. To encourage cooperation and knowledge sharing, the team has also been working closely with the IMF's Technology and General Services Department to develop a file sharing system. Final drafts of the working papers are expected to be completed by December 2015, and the toolkit should be ready for public distribution shortly thereafter.

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

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

1. The IMF-DFID team was actively involved in the 2014 IMF Annual Meeting: Challenges of Job-Rich and Inclusive Growth
   - Concluding Session: Growth and Reform Challenges
     The concluding session brought together policy makers to discuss the important dilemmas and tradeoffs that countries grapple with as they seek to implement reforms to deliver job-rich and inclusive growth. Deputy Managing Director Min Zhu drew extensively from the team's diversification work.

   - Fiscal Policy and Income Inequality in sub-Saharan Africa
     The team collaborated with the IMF African and Fiscal Affairs Departments in organizing this seminar, which addressed the role of fiscal policy in reducing inequality in low-income countries, with a particular focus on sub-Saharan Africa (SSA). Conventional wisdom has been that in LICs, low levels of both tax revenue and social spending limit the redistributive impact of fiscal policy. This seminar discussed that view against the background of recent successes in LICs at broadening tax bases, the introduction of social transfer systems, and the availability of new technologies, such as mobile banking, which offer new avenues for fiscal policies to become more redistributive.

2. Preconference Workshop on Capital Flows in Frontier and Emerging Markets
   The workshop held in February, 2015 covered topics on the relation of flows and policy cyclicality, the allocation and relocation of flows, international financial flows and macro-financial risk in sub-Saharan African, real effects of capital flows with macroprudential response, and new datasets on capital flows and capital control measures with extended low-income country coverage. The focus was on knowledge exchange related to recent academic and policy research on capital flows covering LICs and emerging markets. Participants included members of policy institutions such as the International Monetary Fund, World Bank, Federal Reserve Board, and academics from Johns Hopkins University, University of Maryland, Trinity College Dublin, and University of Virginia.

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

During the third year, the results of our research have been reflected in two IMF Board papers and one IMF Staff Guidance Note.

IMF Board Papers:

1. *Macroeconomic Developments and Selected Issues in Small Developing States* (Not publically available)

   The IMF-DFID work was recognized in the IMF Board paper, *Macroeconomic Developments and Selected Issues in Small Developing States.* Box 2 on page 18 highlights the IMF-DFID project's research on diversification in small states, which suggests volatility in growth for small states partly reflects their limited diversification.

2. *Macroeconomic Developments in Low-income Developing Countries*

   The inaugural IMF policy paper "Macroeconomic Developments in Low-income Developing Countries" (LIDCs) was issued in October, 2014, and the team's research on public investment, growth, and debt sustainability and diversification was included.

IMF Staff Guidance Notes:

1. *Staff Guidance Note on Macroprudential Policy – Considerations for LICs*

The guidance note explores characteristics of financial systems in LICs, such as vulnerability to external shocks and shallow banking systems, that should be considered when developing macroprudential policy and frameworks. It also looks at how macroprudential tools can be adapted to the characteristics of the financial systems and policy challenges in LICs.

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

4.1 - Attendance of External Researchers at High-Level Policy Conferences

To expand the network of researchers working on macroeconomic issues in LICs, we were involved with five high-level policy conferences.

1. Global Development Conference in Accra, Ghana -- June, 2014
   The team presented its recent policy paper on structural transformation and diversification during a plenary session at the conference. The main theme of the conference was "Structural Transformation in Africa and Beyond," and more than 430 participants from 60 countries attended.

2. 11th International Conference Preliminary Program in Wellington, New Zealand – January 2015
   IMF economist Corinne Delechat presented the working paper *Harnessing Resource Wealth for Inclusive Growth in Fragile States* in the "Freedom, Development, and Growth" session. Over 400 registrants representing 35 countries attended the conference.

3. North American Meeting Econometric Society, Minneapolis, USA
   Adrian Peralta presented the paper *Commodity price booms: macroeconomic and distributional implications.* The paper finds that an increase in the price of imported food may have a positive impact on the incomes of farmers, but has a negative impact on the income of the urban poor, which are the most fragile group. An increase in the price of commodity exports, in turn, may have a strong positive macroeconomic effect, but also redistributes income from the urban sector to farmers. The impact of a joint shock on both import and export prices is stronger than the sum of the impacts, due to strong nonlinearities in the model.

4. Six papers from the IMF-DFIF project were presented at the 2015 CSAE conference. Two IMF staff chaired sessions:

   - Session: Macroeconomics I (chaired by Andrew Berg)
     i. Public Investment, Natural Resource Inflows and Fiscal Responses: A DSGE Analysis with Evidence from Uganda
        Presented by: Tchana Fulbert Tchana, World Bank
        Discussant: Matteo Ghilardi, International Monetary Fund

     ii. Public Investment in Developing Countries Facing Natural Resource Depletion
        Presented by: Matteo Ghilardi, International Monetary Fund
        Discussant: Andrew Berg, International Monetary Fund

     iii. Some Misconceptions about Public Investment Efficiency and Growth
        Presented by: Andrew Berg, International Monetary Fund
        Discussant: Tchana Fulbert Tchana, World Bank

   - Session: Macroeconomics 4

i. The Distributional Implications of Fiscal Consolidation in Low-Income Countries
Presented by: Adrian Peralta-Alva, International Monetary Fund
Discussant: Andrew Berg, International Monetary Fund

ii. Reshaping the Macroeconomic Effects of Aid: The Role of Reserve and Fiscal Policies
Presented by: Andrew Berg, International Monetary Fund
Discussant: Laurence Roope, University of Oxford

iii. Does Public-sector Employment Fully Crowd Out Private-sector Employment?
Presented by: Alberto Behar, International Monetary Fund
Discussant: Adrian Peralta-Alva, International Monetary Fund

- Session: Monetary Policy (chaired by Pranav Gupta)

i. The bank lending channel in a frontier economy: Evidence from loan-level data

Presented by: Andrea Presbitero, International Monetary Fund
Discussant: Pranav Gupta, International Monetary Fund

ii. Introducing a Semi-Structural Macroeconomic Model for Rwanda
Presented by: Pranav Gupta, International Monetary Fund
Discussant: Andrea Presbitero, International Monetary Fund
Discussant: Tchana Fulbert Tchana, World Bank

5. IMF Seminar: Sustaining Long-Run Growth and Macroeconomic Stability in Low-income Countries
IMF staff Sarwat Jahan presented at Japan International Cooperation Agency (JICA) in June 2014, and separately gave a seminar on *"Sustaining Long-Run Growth and Macroeconomic Stability in Low-income Countries"* organized by the IMF Regional Office for Asia and the Pacific (OAP), as part of its monthly seminar series. About 30 people from government agencies, private and financial sectors, think tanks, academia, embassies, and media attended.

4.2 - 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.

1. May 2014 Newsletter
2. August 2014 Newsletter
3. November 2014 Newsletter
4. February 2015 Newsletter

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 logframe reflects this overarching goal. Sections 2, 3, and 6 of this report address our uptake and engagement with beneficiaries in greater detail. We have provided DFID with a list of more than 20 project stakeholders that includes academics, country authorities, and senior staff at the IMF.

6 Outcomes and Impacts

The project's research on forward-looking monetary policy frameworks—for countries that are ascribing a greater role to inflation objectives and policy interest rates—was an important building block for development of a new IMF policy on "Conditionality in Evolving Monetary Policy Regimes." For countries with Fund-supported programs the new conditionality option—a monetary policy consultation clause--replaces targets on money, and provides flexibility and the incentives for development of a coherent framework for monetary policy analysis—so that Fund staff and central bank authorities will be "talking the same language." But this new approach rests on enhanced central bank capacity to analyze monetary conditions. This is where the IMF/DFID project's unique tight synthesis of policy research, training and technical assistance to help build capacity in LIC central banks is key.

Building on the wealth of completed and ongoing monetary policy research, and experience from the technical assistance and training, work is underway on a Board paper on "Evolving Monetary Policy Frameworks in Low-Income Countries and other Developing Countries", which will look at how these countries can make progress in strengthening and modernizing their monetary policy frameworks, and the role of the Fund in supporting them.

The IMF issued the inaugural IMF policy paper "Macroeconomic Developments in Low-income Developing Countries" in October, 2014. A large portion of the paper drew upon the research and working papers of this project including previous work on 1) diversification, structural transformation, and quality upgrading; 2) capital flows; and 3) public investment, growth, and debt sustainability. A second IMF Board paper (not publically available), "Macroeconomic Developments and Selected Issues in Small Developing States," also features the work on diversification, and suggests that volatility in growth for small states partly reflects their limited diversification. The team contributed to the analysis in the "Staff Guidance Note on Macroprudential Policy-Considerations for Low-income Countries." The guidance note looks at how macroprudential tools can be adapted to the characteristics of the financial systems and policy challenges in LICs, and features prior IMF-DFID work on financial deepening.

An additional opportunity for outreach and dissemination of some of the IMF/DFID project work is through the G20 Development Working Group (DWG), which focuses on how the G20 can support developing countries. Sharing key findings and policy implications of the work on public investment and growth, financial deepening, macroeconomic policies and income distribution—all linked to G20 DWG priorities—contributes to wider attention to and discussion of the project's outputs.

The team has been actively engaged in the Fund's recent work on financing for development (FfD). Many of the key issues under discussion in the FfD debate relate directly to the work of this project and include capital market deepening; attracting and managing capital flows; scaling up infrastructure investment; sharpening the focus of operational work on equity, inclusion, and gender; and developing mechanisms to handle public debt burdens.

Addressing dire infrastructure gaps is a pressing issue in the FfD agenda, and for most LICs, these gaps continue to be a key obstacle to growth. The public investment and natural resource work of the DFID project has contributed to this goal of the FfD agenda by expanding diagnostic and capacity-building support for countries seeking to scale up investment. Fund staff have developed model-based frameworks that help assess the macroeconomic effects—including on growth and debt sustainability-- of scaling up public investment in LICs, while taking into account the frictions and inefficiencies in public investment that are pervasive in these countries. These models include the DIG model, the DIGNAR model and the current account norm model. The team has continued applying these models in more than 20 countries and providing macroeconomic diagnostics that Fund teams have shared and discussed with authorities. Moreover, the team has provided capacity building by offering training on how to use these frameworks for policy analysis to Fund economists and authorities from Rwanda, Liberia, and Mongolia.

As in previous years, the project's outputs have gained attention in the media. In August 2014, the IMF working paper titled *Public Investment as an Engine of Growth* by Andrew Warner was featured in The Wall Street Journal and Reuters.

Team members compiled approximately 100 indicators on gender inequality to share on the IMF's internal website on gender (Gender Knowledge Exchange). Though the site was only launched in February, 2015, it is now the second most visited Knowledge Exchange site at the Fund. More than 90 percent of visitors to the site stay to investigate further, with the average user clicking 10 times per visit.

This project has also had an impact well beyond internal IMF applications. The African Development Bank (AFDB) used a revised version of the debt sustainability framework to examine the impact of Ebola in Sierra Leone. Building on the supply shock (TFP shock) and terms-of-trade shock, the framework has allowed AFBD to estimate the economic impacts of Ebola in the three affected countries.

To further broaden the uptake of our research on practical monetary policy frameworks, we have coordinated technical assistance work with East AFRITAC and AFRITAC South. This has allowed us to enhance forecasting and policy analysis systems (FPAS) at the central banks of Kenya, Uganda, Rwanda, Tanzania, and Mozambique. Considerable progress was made on the FPAS agenda over the past year, and the TA projects are currently at various stages. Most advanced at this point is Kenya where Central Bank of Kenya (CBK) staff, without assistance of the TA experts, started to prepare forward-looking policy recommendations supported by model-based forecasts to the monetary policy committee (MPC). The CBK also approved changes to its organizational structure to formalize the forecasting unit. In Uganda, the project has succeeded in developing a quarterly prediction model (QPM) for the Bank of Uganda (BoU), and the BoU staff began to use (although not systematically yet) its QPM-based outputs to inform the MPC.

The TA project at the National Bank of Rwanda (BNR) is at an earlier stage. BNR staff, under the guidance of the TA experts, have developed the QPM, and core BNR experts have been trained in operating the model. At the Bank of Tanzania (BoT), the work is newly underway. TA experts helped the BoT develop the core forecasting model, trained the BoT staff in model-based analysis, and assisted the BoT staff in preparing a mock forecast presentation for the BoT Board. In Mozambique, TA experts helped the Banco de Mocambique (BdM) staff develop a new QPM, and the BdM staff, with support from the TA experts, started to prepare regular shadow forecasts in addition to their official forecasts. The BdM is currently preparing to switch to the new model based forecasts and analysis.

The results of the team's TA efforts were evident during the February, 2015 Meeting of the Monetary Affairs Committee (MAC) of the East African Community (EAC)[1] in Arusha, Tanzania. Delegates from the central banks of Burundi, Kenya, Rwanda, Tanzania, and Uganda attended, along with staff from the EAC Secretariat, the IMF, and East AFRITAC. The meeting offered a clear sign of a regional outreach of the FPAS-building efforts. The MAC endorsed these efforts by:

- Deciding to establish a regional modelling and forecasting working group to develop and tailor the FPAS models for the region by March 2015;
- Encouraging the EAC central banks to continue implementing FPAS to support a forward looking monetary policy framework; and
- Obligating each EAC central bank to form a modelling and forecasting team consisting of a minimum of five officers.

In March, 2015, together with the African Training Institute and in collaboration with AFRITAC South, East AFRITAC, and AFRITAC West II, we sponsored a peer-to-peer conference on Forecasting Frameworks for Forward-Looking Monetary Policy. The main objective of the conference was to facilitate peer-to-peer exchange of views on techniques used for inflation forecasting at selected central banks in the sub-Saharan region. The conference attendees included technical-level staff involved in forecasting and monetary policy

[1] Burundi, Kenya, Rwanda, Tanzania, and Uganda are the five EAC members. All but Burundi are recipients of support from the IMF, partly financed by the DFID project, in their own FPAS-building efforts.

analysis and offered a unique platform to discuss the various designs of FPAS at selected central banks. Central banks of Botswana, Mauritius, Mozambique, South Africa, Zambia, Kenya, Rwanda, Uganda, Tanzania, Ghana, and Nigeria were represented at the conference. An issue which attracted attention at the concluding panel discussion was a role of QPM-based forecasts in Fund missions' discussions with authorities on appropriate monetary policy stance and inflation outlook. It was noted that the capacity of the Fund missions to engage in discussions about QPM-based projections is limited, and systematic building of this capacity at the Fund would be appreciated.

7 Costs, Value for Money, and Management

The approved budget for the first three years of this project is US$6,585,403.

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 March 2015, US$5,599,988 has been drawn down from the subaccount. These figures vary from those in Table 4 below as the IMF financial systems lag behind actual expenses, to enable the requisite verification of expenses before they are charged to donor subaccounts.

The following table provides an indicative breakdown of planned versus actual spending over the first three years of the project:

Table 4
Project Expenditures in Years 1-3

		Realized Expenditures			
	Approved Budget	Year 1	Year 2	Year 3	Total
Contractuals	$2,374,668	$637,714	$894,169	$702,251	$2,234,134
Visiting Scholars	$1,566,242	$382,379	$475,306	$629,159	$1,486,844
Travel and Other Costs	$1,133,055	$214,972	$415,794	$33,022	$663,788
Conferences	$648,967	$49,077	$283,649	$0	$332,727
Travel	$384,088	$141,733	$132,145	$33,022	$306,899
Contingency	$100,000	$0	$0		$0
IMF Staff	$1,080,618	$472,256	$363,231	$295,221	$1,130,708
IMF Staff Backstopping/Uptake	$1,003,487	$409,732	$322,961	$280,217	$1,012,910
Project Management	$77,130	$45,185	$40,270	$15,003	$100,458
Subtotal	$6,154,583	$1,707,321	$2,148,500	$1,659,653	$5,515,473
TTF Management Fee (7%)	$430,821	$119,512	$150,395	$116,176	$386,083
TOTAL	**$6,585,404**	**$1,826,834**	**$2,298,894**	**$1,775,828**	**$5,901,556**

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

Value for Money:

We believe that this project is highly cost effective for several reasons. We strictly follow all Fund guidelines for hiring, travel, and conferences. All contractual hires undergo a competitive process. Outputs are produced under firm timeframes and must meet Fund requirements for publication. The quality of our papers is further evaluated when the papers are submitted to peer-reviewed publications. To date, we have 16 publications. Table 5 compares the number of working/published papers produced under the DFID project to the overall number of LIC-focused IMF working/published papers from 2012-2014. In each year, the share of DFID papers published is higher than the share of the IMF papers published, which speaks to the quality of the team's work.

Table 5
DFID and IMF Working and Published Papers

	DFID-sponsored WPs			Other IMF LIC WPs		
		Of which published			Of which published	
Year	Number	Number	Share	Number	Number	Share
2012	6	2	33%	32	3	9%
2013	16	3	19%	29	4	14%
2014	8	2	25%	31	0	0%
Total	**30**	**7**	**23%**	**92**	**7**	**8%**

Table 6 shows the cost per paper over the first three years of the project. 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. The total staff, contractual, and visiting scholar cost (see Table 1) is thus split between papers and applications. The cost per working paper is approximately \$91,000 (£57,000), and the cost per published paper is \$227,000 (£142,000). These costs both compare favorably with the DFID benchmark of £150,000 per paper. We anticipate that the cost per published paper will decrease as more of our working papers from the first three years are accepted for publication.

Table 6
Cost per Working and Published Paper

Total Staff/Contractual/VS Costs	\$4,851,686	£3,032,304
Research Paper Costs	\$3,638,765	£2,274,228
Country Applications Costs	\$1,212,922	£758,076
Working Papers Produced	40	
Cost Per Working Paper	\$90,969	£56,856
Published Papers Produced	16	
Cost per Published Paper	\$227,423	£142,139

Direct project management costs represented less than two percent of our total budget; if we include the Trust Fund management fee, program management costs were still below nine percent. This means that the vast majority of the funds available to this project were spent on producing high quality research rather than on project management.

In terms of our output, we have exceeded all of our “High” targets indicated on the logframe. Some of our outputs include:

- 40 working papers
- 16 published papers
- 8 IMF Board papers
- 12 high profile conferences hosted at IMF
- 34 cases of uptake by IMF country teams.

8 Work Plan and Timetable

In the coming year, we will continue our work on the main areas of research as well as continue to expand our research capacity. The following provides a brief overview of our plans for each topic.

1) Monetary and exchange rate policies in LICs:
   a. IMF staff are working on in-depth analyses of monetary policy in Kenya, Uganda, Rwanda, Tanzania, Ghana and Mozambique.
   b. IMF will continue providing intensive training of the staff of central banks of Kenya, Uganda, Tanzania, Rwanda, Mozambique, and Ghana in macroeconomic modeling, forecasting and policy analysis, and assisting the central banks in improving their monetary policy formulation process.
   c. The IMF staff are planning to organize a follow-up workshop on forecasting and monetary policy analysis. The first peer-to-peer workshop was held in March, 2015 for technical-level staff from central banks of Kenya, Uganda, Tanzania, Rwanda, Nigeria, Ghana, Mauritius, Mozambique, Botswana, Zambia, and South Africa. The second workshop would involve top management of the central banks and examine modern forward-looking monetary policy from the policy-makers' perspective.
   d. IMF staff are planning a scoping mission to the Central Bank of Sri Lanka (CBSL) to diagnose its current forecasting and policy formulation process and design a work plan to enhance the CBSL forecasting and policy analysis system.
   e. IMF staff have been providing technical assistance to Reserve Bank of India in macroeconomic modeling, forecasting and policy analysis.

2) Debt sustainability analysis and management of natural resources (extension)
   a. Professors Giovanni Melina (City University of London) and Paul Levine (University of Surrey), in collaboration with Fund staff, will produce a working paper that studies how to spend optimally on infrastructure, while taking into consideration key characteristics of developing countries such as inefficiencies in public investment and tax collection as well as high returns to public capital, among others.
   b. Professor Ioana Moldovan (University of Glasgow), in collaboration with Fund staff, will produce a working paper on optimal and implementable fiscal rules and reserve accumulation rules in the context of volatile aid.
   c. Professor Ed Buffie (Indiana University) is working with Fund staff on the implications of public-private partnerships for public investment, growth, and debt sustainability in LICs.
   d. Fund staff will complete work on a user friendly "front end" for the DIG model developed in Buffie et al. (2012).
   e. Fund staff and Professor Ed Buffie (Indiana University) will produce a paper that describes the Ethiopia version of the DIG model. The model incorporates investment in an energy sector, besides investment in infrastructure, and a banking sector.
   f. Fund staff will produce an analytical paper on some misconceptions about public investment efficiency and growth.
   g. Fund staff in collaboration with Ondra Kamenik (OGR) will complete work on incorporating uncertainty about parameters (e.g. efficiency of public investment) and external shock shocks (e.g. price of oil) into the DIG model.
   h. Country applications of the DIG, DIGNAR, and current account models include Lesotho, Republic of Congo, CEMAC, and Mongolia.

3) Macroeconomic policies and income distribution:
   a. We plan to organize one more a two-day workshop on macroeconomic policy and income inequality in low-income countries. We will follow the structure and format of the very successful first one, bringing leading scholars and policy makers to the IMF to present and

discuss their work on the subject. This workshop will therefore further expand the network of people involved and interested in macroeconomic analysis of low-income countries. Papers produced by our teams will also be presented at the workshop.

b. After meeting with the Ethiopia mission chief and country team, we have adapted the framework developed in our previous papers to work with the Ethiopia team in their upcoming Article IV consultation. This will be one of the pilot studies to operationalize income inequality work, launched by the IMF in 2014.
c. We plan to expand the team and hire Professor Xuan Tam form City University in Hong Kong, to work on a new project on the macro and distributional implications of revenue mobilization. We presented a preliminary version of this project at the 2015 CSAE conference and plan to have a draft working paper completed by the end of the summer of 2015.
d. We also plan to submit our paper on commodity prices and income inequality (based on Ghana's data) to a journal such as the *Review of Economic Studies*.
e. Louise Fox, a former Lead Economist at the World Bank and now a visiting professor at UC Berkeley, will finalize and produce an IMF working paper (commissioned last year) on what macroeconomists need to know about labor markets in Africa.
f. The team is engaging with other departments at the IMF to develop direct country applications.

4) Growth through diversification:
   a. Thirty country teams have requested the dataset from the Board paper on diversification and structural transformation to use in working papers and Article IV consultations.
   b. To address the requests from IMF mission teams and country authorities, this year, we plan to extend and update the diversification toolkit as follows: a) extend by incorporating export partners diversification indices to complement existing indices on export products; b) develop and incorporate an index on export services in addition to goods; c) update the data through 2013 if possible.
   c. The IMF's Institute for Capacity Development (ICD) initiated an external course on diversification in resource-rich countries that includes a lecture and a separate hands-on workshop. ICD plans to hold the course annually.
   d. The diversification Board paper has now been now translated into French and posted online – meeting demands from Francophone countries and the African Executive Directors.
   e. "The Elusive Effect of Trade on Growth" by Theo S. Eicher and David Kuenzel (work that was included in the IMF Board paper and in the supplement) is now forthcoming in the *Canadian Journal of Economics*.

5) Capital Flows:
   a. The goal of the project is to better understand new developments in private capital flows in LICs and contribute to the policy debate on potential risks associated with gaining market access by frontier LICs.
   b. In the coming year, specific objectives include: a) constructing a new dataset on low-income countries private flows; b) documenting stylized facts concentrating on the behavior of these flows; c) identifying periods of surges and comparing the experience of LICs to a control group of Ems; e) assessing empirically the cyclical behavior of non-FDI private capital flows and the link on the accumulation of private capital flows and the Lucas Paradox.
   c. This year's Board paper on low-income and developing countries will include a chapter on capital flows that will extensively feature the team's work.

6) Gender and Macroeconomics:

a. The team has begun work on a research agenda that focuses on gender issues in low-income countries and aims to place gender more squarely in the forefront of IMF policy research.
b. Work continues on developing the first comprehensive assessment of gender budgeting initiatives around the world. The project began in earnest with a two-day kickoff workshop in March 2015 for the authors involved. The team will produce working papers that highlight the experiences of gender budgeting in six regions and will develop a toolkit to provide outside researchers with a dataset on global gender budgeting efforts. In addition, a working paper on measuring gender inequality using indices and individual indicators will be completed by summer, 2015.
c. Other ongoing work includes looking at the relationship between gender, inequality, and growth; and quantifying the extent to which restrictions to women's economic rights impede economic diversification.
d. We plan to host a two-day conference on gender and macroeconomic issues in 2016. The conference would bring together academics and senior policy makers to discuss research issues related to women and macroeconomic growth and stability, with a particular focus on low-income countries.
e. Several team members contributed to the IMF Knowledge Exchange website on Gender by providing datasets and reading suggestions and are also involved in the IMF Managing Director's advisory group on gender.

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 logframe. In addition to this formal reporting requirement, we provide quarterly updates to our website so that DFID and the general public have up-to-date information on our research and progress. The team sends out quarterly e-newsletters that reach an audience of more than 1000 academics, policymakers, central bank staff, and government representatives, among others. These e-newsletters are posted on the project website. We also upload all publically available working and published papers to the R4D portal on the DFID website so that DFID staff members will be able to easily search and retrieve all of our outputs. To further ensure public access to all outputs produced through the grant, we will provide “gold access” to journal publications. When deemed necessary by 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: Logframe

IMPACT	**Impact Indicator 1**		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	
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**	(2009) Sub-Saharan Africa: 64% Developing regions: 31%	(2013) Sub-Saharan Africa: 62% Developing regions: 28%	(2015) Sub-Saharan Africa: 58% Developing regions: 26%	(2016) 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**	
	Increase in employment to population ratio in LICs	**Planned**	(2009) Sub-Saharan Africa: 65% Developing regions: 62%	(2013) Sub-Saharan Africa: 66% Developing regions: 64%	(2015) Sub-Saharan Africa: 68% Developing regions: 66%	(2016) 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**	**Milestone 3**	**Assumptions**
Deeper understanding of, and better engagement by, IMF policymakers on LIC-specific macroeconomic issues, leading to improved policymaking in specific thematic areas.	Improved IMF policymaking and integration of LIC-specifics in project thematic areas.	**Planned**	March 2012 (0)	March 2013: H (3) M (2) L (1)	March 2014: H (5) M (3) L (2)	Six thematic areas influenced by March 2015. H (6) M (4) L (3)	
		Achieved		3	5	5	
			Source				
			IMF Reporting				
INPUTS (£)	**£4.14 million**				**£4.14 million**	**100**	
INPUTS (HR)	**DFID (FTEs)**						

OUTPUT 1	Output Indicator 1.1		Baseline	Milestone 1	Milestone 2	Milestone 3	Assumptions
High quality, policy relevant research on macroeconomic issues affecting LICs produced.	Number of priority research papers produced, on research topics: 1) Monetary and exchange rate policy in LICs 2) Public investment, growth and debt sustainability 3) Macroeconomic management of resource wealth 4) Macroeconomic policies and income distribution 5) Role of financial deepening in fostering macroeconomic stability and sustained growth in LICs 6) Growth through diversification	**Planned**	March 2012 (0)	By March 2013: H (12 papers) M (8 papers) L (4 papers)	By March 2014: H (30 papers) M (20 papers) L (10 papers)	36 priority papers produced by March 2015. H (36 papers) M (24 papers) L (12 papers)	1) No further escalation of the economic crisis, in the eurozone or elsewhere, 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		13	30	40	
		Source					
		IMF					
	Output Indicator 1.2		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	
	Proportion of research papers accepted for publication in top journals	**Planned**	March 2012 (0)	By March 2013: H (1 papers) M (0 paper) L (0 papers)	By March 2014: H (3 papers) M (1 papers) L (0 paper)	Six papers published in top quality academic journals by March 2015. H (6 papers) M (3 papers) L (1 papers)	
		Achieved		1	7	16	
		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	Milestone 3	Assumptions
IMF research products (policy 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 2012 (0)	By March 2013, evidence of number of country teams applying policy tools and frameworks: H (6) M (3) L (1)	By March 2014, evidence of number of country teams applying policy tools and frameworks: H (14) M (7) L (4)	Application by 18 country teams by March 2015. H (18) M (10) L (6)	
		Achieved		9	21	34	
		Source					
		IMF					
	Output Indicator 2.2		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	
	Application and use of tools and frameworks by country authorities.	**Planned**	March 2012 (0)	By March 2013, evidence of number of country authorities applying policy tools and frameworks: H (1) M (0) L (0)	By March 2014, evidence of number of country authorities applying policy tools and frameworks: H (3) M (2) L (1)	Application by six country authorities by March 2015. H (6) M (4) L (3)	
		Achieved		1	3	7	
		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	Milestone 3	Assumptions
IMF strengthens engagement by senior IMF policymakers macroeconomic on issues affecting LICs	High level policy conferences attended by senior IMF staff reflect findings of research papers funded under this project.	**Planned**	March 2012 (0)	By March 2013, number of policy conferences drawing on outputs from the project: H (3) M (2) L (1)	By March 2014, number of policy conferences drawing on outputs from the project: H (5) M (3) L (2)	Research findings reflected in six high-level conferences by March 2015. H (6) M (4) L (3)	
		Achieved		6	10	12	
		Source					
		IMF					
	Output Indicator 3.2		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	
	Results of the research papers produced reflected in IMF Board discussions, IMF policy papers such as Staff Discussion Notes, policy memos to management, and the like.	**Planned**	March 2012 (0)	By March 2013, evidence of research findings inputting into number of IMF Board/SDN/etc. papers: H (3) M (2) L (1)	By March 2014, evidence of research findings inputting into number of IMF Board /SDN/etc. papers: H (4) M (3) L (2)	Seven IMF Board/SDN/etc. papers using research findings by March 2015. H (7) M (4) L (3)	
		Achieved		4	8	11	
	Output Indicator 3.2.1		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	
	Results of the research papers produced reflected in IMF Board papers.	**Planned**	March 2012 (0)	By March 2013, evidence of research findings inputting in to number of IMF Board Papers H (3) M (2) L (1)	By March 2014, evidence of research findings inputting into number of IMF Board papers H (4) M (3) L (2)	Five IMF Board papers using research findings by March 2015. H (5) M (4) L (3)	
		Achieved		3	6	8	
		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	Milestone 3	Assumptions
IMF strengthens capacity building by expanding the network of LIC researchers who are new to the field of macroeconomic research on LICs.	Number of commissioned research papers produced on thematic areas.	**Planned**	March 2012 (0)	By March 2013, number of commissioned research papers produced: H (0) M (0) L (0)	By March 2014, number of commissioned research papers produced: H (8) M (6) L (4)	Eight commissioned research papers produced by March 2015. H (8) M (6) L (4)	
		Achieved		0	13	13	
		Source					
		IMF					
	Output Indicator 4.2		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	
	Attendance of number of external researchers at high-level policy conferences.	**Planned**	March 2012 (0)	By March 2013, number of conferences: H (2) M (1) L (1)	By March 2014, number of conferences: H (5) M (3) L (2)	Attendance of external researchers at six high-level policy conferences. H (6) M (4) L (3)	
		Achieved		6	11	16	
	Output Indicator 4.3		**Baseline**	**Milestone 1**	**Milestone 2**	**Milestone 3**	
	Outputs and project disseminated in e-newsletter and updated public webpage (number of updates of e-newsletter and/or webpage)		March 2012 (0)	By March 2013, number of updates: H (2) M (2) L (1)	By March 2014, number of updates: H (6) M (4) L (3)	By March 2013, number of updates: H (10) M (6) L (5)	
		Achieved		2	4	10	
		Source					
		IMF					
IMPACT WEIGHTING (%)							
15							

Appendix 2: Financial Reports

EFRMS

International Monetary Fund

SFA GBR LIC 359

Statement of Contributions Received, Interest Earned, and Expenses Paid

May 2010 - March 2015

Report ID: IMFEF006A
Date: 4/28/2015
Time: 10:40:32 AM

Quarterly Activity	Contribution Received (U.S. dollars)	Transferred (U.S. dollars)	Interest Earned /1 (U.S. dollars)	Expenses Paid (U.S. dollars)	Account Balance
Balance Brought Forward as of Apr 2010					**0**
Fiscal Year Total 2012	**2,385,333**	**0**	**86**	**0**	
February-April	2,385,333		86	0	
					2,385,418
Fiscal Year Total 2013	**1,431,773**	**0**	**1,628**	**1,577,395**	
May-July	0		222	143,307	
August-October	0		423	431,791	
November-January	1,431,773		549	545,421	
February-April	0		434	456,876	
					2,241,424
Fiscal Year Total 2014	**2,051,464**	**0**	**499**	**2,292,328**	
May-July	0		177	493,978	
August-October	0		79	681,525	
November-January	1,013,152		139	554,147	
February-April	1,038,313		104	562,678	
					2,001,059
Fiscal Year Total 2015	**4,594,260**	**0**	**501**	**1,730,265**	
May-July	872,712		112	400,284	
August-October	0		132	396,970	
November-January	1,507,204		132	423,522	
February-April	2,214,345		125	509,489	
					4,865,555

Page 1 of 2

Quarterly Activity	U.S. dollars Contribution Received	Transferred	Interest Earned /1	Expenses Paid	Account Balance
Grand Total	**10,462,830**		**2,714**	**5,599,988**	**4,865,556**

Source: Institute for Capacity Development

1/ Interest earned through March 2015

INTERNATIONAL MONETARY FUND
SFA_GBR_LIC_359 (S_GBR13)
LOU Project Status Detail Report
Up to Mar, 2015

Project	Project Description	Status	A Latest Approved Budget /1	B Expected Overall Expenditure /2	C Expenses (Drawdowns) As of Mar, 2015	D = (B - C) Remaining Commitments
IMF_IMF_2012_01	**Macroeconomic Research in Low-**	APPROVED				
	1151 Short Term Experts-- RES		333,000	333,000	251,789	81,211
	1151B Backstopping -- RES		1,263,152	1,263,152	633,353	629,799
	1152 Short Term Experts -- SPR		64,000	64,000	0	64,000
	1152B Backstopping -- SPR		772,935	772,935	388,128	384,807
	1601 Staff Travel -- RES		535,453	535,453	316,959	218,494
	1602 Staff Travel -- SPR		283,635	283,635	18,440	265,195
	1603 Travel Visiting Scholars (RES)		341,815	341,815	25,711	316,104
	1604 Travel Visiting Scholars (SPR)		346,876	346,876	24,258	322,618
	1701 Visiting Scholars -- RES		1,486,227	1,486,227	630,803	855,424
	1702 Visiting Scholars -- SPR		829,885	829,885	343,104	486,781
	1703 Support Services		28,500	28,500	18,500	10,000
	3301 Conferences -- RES		422,084	422,084	200,774	221,309
	3302 Conferences -- SPR		395,723	395,723	196,045	199,678
	5101 Contingency -- RES		60,000	60,000	0	60,000
	5102 Contingency -- SPR		80,000	80,000	0	80,000
	5111 Contractuals (Prof) -- RES		4,205,201	4,205,201	1,421,654	2,783,547
	5112 Contractuals (Prof) -- SPR		2,483,467	2,483,467	664,923	1,818,544
	5341 Project Management -- RES		128,618	128,618	62,596	66,022
	5342 Project Management --SPR		83,912	83,912	36,597	47,315
	Total for Project		**14,144,483**	**14,144,482**	**5,233,634**	**8,910,848**
	Total		**14,144,483**	**14,144,482**	**5,233,634**	**8,910,848**
	Administrative Overhead		**990,114**	**990,114**	**366,354**	**623,759**
	Grand Total		**15,134,597**	**15,134,596**	**5,599,988**	**9,534,607**

INTERNATIONAL MONETARY FUND
SFA_GBR_LIC_359 (S_GBR13)
LOU Project Status Detail Report
Up to Mar, 2015

Run Date : 04/28/2015
Run Time: 10:28 AM
Report ID: IMFEF24A

Project	Project Description	Status	A Latest Approved Budget /1	B Expected Overall Expenditure /2	C Expenses (Drawdowns) As of Mar, 2015	D = (B - C) Remaining Commitments

Arrangement Summary	
Total Contributions Received	10,462,830
Total Transferred	0
Interest Earned	2,714
Total Available Funds as of March 15	**10,465,544**
Expenses	5,599,988
Remaining Commitments	9,534,607
Uncommitted Available Funding	**- 4,669,051**
Expected Future Contributions	4,521,967
Uncommitted Total Funding	**- 147,084**

1/ Latest approved budget in TAIMS, as approved by the donor
2/ Expected Overall Expenditure equals prior years expenses plus current and future years' budgets

Appendix 3: Research Outputs

1.1 Working Papers

1. Public Investment, Public Finance, and Growth: The Impact of Distortionary Taxation, Recurrent Costs, and Incomplete Appropriability
   Christopher Adam and David Bevan

   Summary: Effective public investment requires governments to address the "recurrent cost problem" to ensure operations and maintenance (O&M) expenditures are sufficient to sustain the flow of productive public capital services to private factors of production. Building on the model of Buffie et al (2012), this paper explores the macroeconomic implications of this recurrent cost problem and its resolution in a context that recognizes that taxation is distortionary. The model is also used to examine stylized fiscal reforms including the replacement of a distortionary output tax with a uniform consumption tax and budgetary reforms that restore O&M expenditures to their efficient levels. These experiments are stylized but clearly demonstrate the material consequences of the tax and public expenditure structures for growth and debt sustainability in low-income countries.

2. Introducing a Semi-Structural Macroeconomic Model for Rwanda
   Luisa Charry, Pranav Gupta, and Vimal Thakoor

   Summary: We develop a simple semistructural model for the Rwandan economy to better understand the monetary policy transmission mechanism. A key feature of the model is the introduction of a modified uncovered interest parity condition to capture key structural features of Rwanda's economy and policy framework, such as the limited degree of capital mobility. A filtration of the observed data through the model allows us to illustrate the contribution of various factors to inflation dynamics and its deviations from the inflation target. Our results, consistent with evidence for other countries in the region, suggest that food and oil prices as well as the exchange rate have accounted for the bulk of inflation dynamics in Rwanda.

3. Public Investment as an Engine of Growth
   Andrew M. Warner

   Summary: This paper looks at the empirical record whether big infrastructure and public capital drives have succeeded in accelerating economic growth in low-income countries. It looks at big long-lasting drives in public capital spending, as these were arguably clear and exogenous policy decisions. On average the evidence shows only a weak positive association between investment spending and growth and only in the same year, as lagged impacts are not significant. Furthermore, there is little evidence of long term positive impacts. Some individual countries may be exceptions to this general result, as for example Ethiopia in recent years, as high public investment has coincided with high GDP growth, but it is probably too early to draw definitive conclusions. The fact that the positive association is largely instantaneous argues for the importance of either reverse causality, as capital spending tends to be cut in slumps and increased in booms, or Keynesian demand effects, as spending boosts output in the short run. It argues against the importance of long term productivity effects, as these are triggered by the completed investments (which take several years) and not by the mere spending on the investments. In fact a slump in growth rather than a boom has followed many public capital drives of the past. Case studies indicate that public investment drives tend eventually to be financed by borrowing and have been plagued by poor analytics at the time investment projects were chosen, incentive problems and interest-group-infested investment choices. These observations suggest that the current public investment drives will be more likely to succeed if governments do not behave as in the past, and instead take analytical issues seriously and safeguard their decision process against interests that distort public investment decisions.

4. [Identifying Constraints to Financial Inclusion and Their Impact on GDP and Inequality: A Structural Framework for Policy]
Era Dabla-Norris, Yan Ji, Robert Townsend, and D. Filiz Unsal

Summary: We develop a micro-founded general equilibrium model with heterogeneous agents to identify pertinent constraints to financial inclusion. We evaluate quantitatively the policy impacts of relaxing each of these constraints separately, and in combination, on GDP and inequality. We focus on three dimensions of financial inclusion: access (determined by the size of participation costs), depth (determined by the size of collateral constraints resulting from limited commitment), and intermediation efficiency (determined by the size of interest rate spreads and default possibilities due to costly monitoring). We take the model to a firm-level data from the World Bank Enterprise Survey for six countries at varying degrees of economic development—three low-income countries (Uganda, Kenya, Mozambique), and three emerging market countries (Malaysia, the Philippines, and Egypt). The results suggest that alleviating different financial frictions have a differential impact across countries, with country-specific characteristics playing a central role in determining the linkages and tradeoffs between inclusion, GDP, inequality, and the distribution of gains and losses.

5. [On the First-Round Effects of International Food Price Shocks: the Role of Asset Market Structure]
Rafael Portillo and Luis-Felipe Zanna

Summary: We develop a tractable small open-economy model to study the first-round effects of international food price shocks in developing countries. We define first-round effects as changes in headline inflation that, holding core inflation constant, help implement relative price adjustments. The model features three goods (food, a generic traded good and a non-traded good), varying degrees of tradability of the food basket, and alternative international asset market structures (complete and incomplete markets, and financial autarky). First-round effects depend crucially on the asset market structure and the different transmission mechanisms they trigger. Under complete markets, inter-temporal substitution prevails, making the inflationary impact of international food prices proportional to the food share in consumption, which in developing economies is typically large. Under financial autarky, the income channel is dominant, and first-round effects are instead proportional to the country's food balance—the difference between the country's food endowment and its consumption—which in developing countries is typically small. The latter result holds regardless of the degree of food tradability. Incomplete markets yield a combination of the two extremes. Our results cast some doubt on the view that international food price shocks are inherently inflationary in developing countries.

6. [The Sources of Business Cycles in a Low Income Country]
Romain Houssa, Jolan Mohimont, and Christopher Otrok

Summary: We examine the role of global and domestic shocks in driving macroeconomic fluctuations for Ghana. We are able to study the impact of exogenous shocks including productivity, credit supply, and commodity price shocks. We identify the shocks with a combination of sign and recursive restrictions within Bayesian VAR models. As a benchmark we provide results for South Africa to document the difference between two economies with similar structures but different levels of development. We find that global shocks play a more dominant role in South Africa than in Ghana. These shocks operate through three channels: trade, credit and commodity prices.

7. [IMF Lending and Banking Crisis]
Luca Papi, Andrea Presbitero, and Alberto Zazzaro

Summary: This paper looks at the effects of International Monetary Fund (IMF) lending programs on banking crises in a large sample of developing countries, over the period 1970-2010. The endogeneity of the IMF intervention is addressed by adopting an instrumental variable strategy and a propensity score matching estimator. Controlling for the standard determinants of banking crises, our results indicate that countries participating in IMF-supported lending programs are significantly less likely to experience a future banking crisis than nonborrowing countries. We also provide evidence suggesting that compliance with conditionality and loan size matter.

8. Are Islamic Banks More Resilient during Financial Panics?
Moazzam Farooq and Sajjad Zaheer

Summary: Rapid growth of Islamic banking in developing countries is accompanied with claims about its relative resilience to financial crises as compared to conventional banking. However, little empirical evidence is available to support such claims. Using data from Pakistan, where Islamic and conventional banks co-exist, we compare these banks during a financial panic. Our results show that Islamic bank branches are less prone to deposit withdrawals during financial panics, both unconditionally and after controlling for bank characteristics. The Islamic branches of banks that have both Islamic and conventional operations tend to attract (rather than lose) deposits during panics, which suggests a role for religious branding. We also find that Islamic bank branches grant more loans during financial panics and that their lending decisions are less sensitive to changes in deposits. Our findings suggest that greater financial inclusion of faith-based groups may enhance the stability of the banking system.

9. Harnessing Resource Wealth for Inclusive Growth in Fragile States
Corinne Delechat, Will Clark ; Pranav Gupta, Malangu Kabedi-Mbuyi, Mesmin Koulet-Vickot, Carla Macario, Toomas Orav, Manuel Rosales, Rene Tapsoba, Dmitry Zhdankin, and Susan Yang

Summary: Like other fragile sub-Saharan African countries, Côte d'Ivoire, Guinea, Liberia, and Sierra Leone are seeking to harness their natural resource potential in the context of ambitious development strategies. This study investigates options for scaling up public investment and expanding social safety nets in a general equilibrium setting. First, it assesses the macro-fiscal implications of alternative fiscal rules for public investment, and, second, it explicitly accounts for redistribution through direct cash transfers. Results show that a sustainable non-resource deficit target is robust to the high uncertainty of resources output and prices, while delivering growth benefits through higher public investment. The scaling-up magnitudes, however, depend on the size of projected resource revenue and absorptive capacity. Adding a social transfer raises private consumption, suggesting that a fraction of the resource revenue could be used to expand safety nets.

10. Investment Scaling-up and the Role of Government: the Case of Benin
Matteo F. Ghilardi and Sergio Sola

This paper studies the fiscal implications for the Beninese economy of scaling up of public investment when the government is subject to inefficiencies on the spending and on the tax collection side. While scaling up of public investments results in higher long-run output and consumption levels, a fiscal stabilization package is required in order to preserve fiscal sustainability. A welfare analysis shows that consumers' welfare is increased when the government smoothes the fiscal adjustment via higher borrowing. Moreover, the comparison between several stabilization packages highlights the fact that higher welfare is achieved when the government relies mostly on taxation of capital as this allows higher levels of consumption to materialize earlier. Lower fiscal costs can however be achieved if the government manages to reduce inefficiency in tax collection. Finally, we consider a change in the trade regime that causes a decline in revenues. We find that the higher fiscal burden required to preserve fiscal sustainability would completely wipe out the welfare gain of higher public investments.

1.2 Published Papers

1. Monetary policy in low income countries in the face of the global crisis: A structural analysis *Alfredo Baldini, Jaromir Benes, Andrew Berg, Mai C. Dao and Rafael A. Portillo*
2. Banking market structure and macroeconomic stability: Are low income countries special? *Franziska Bremus and Claudia M. Buch*

3. Are Islamic banks more resilient during financial panics?
   Moazzam Farooq and Sajjad Zaheer
4. The sources of business cycles in a low income country
   Romain Houssa, Jolan Mohimont, and Christopher Otrok
5. International financial flows in low income countries
   Philip R. Lane
6. Investing volatile resource revenues in capital-scarce economies
   Christine Richmond, Irene Yackovlev, and Shu-Chun S. Yang
7. Macroeconomics of low income countries: New perspectives
   Camelia Minoiu and Galina Hale
8. Afghanistan: Balancing Social and Security Spending in the Context of a Shrinking Resource Envelope
   Aqib Aslam, Enrico Berkes, Martin Fukac, Jeta Menkulasi, and Axel Schimmelpfennig
9. On the Sources of Inflation in Kenya: A Model-Based Approach
   Michal Andrle, Andrew Berg, Armando Morales, Rafael Portillo, and Jan Vlcek

2.1 Uptake by IMF Teams

Monetary Policy

Ghana

The project team helped the IMF country team to prepare medium-term projections, and formulate monetary policy advises in advance of the Bank of Ghana (BOG) Monetary Policy Committee (MPC) meetings. The conclusions were summarized in confidential memorandums sent to the BOG authorities before the MPC meetings to inform the authorities about the IMF views regarding the monetary policy stance. This initiative has become particularly important with Ghana's request for and subsequent approval of a loan under the IMF's Extended Credit Facility.

Uganda

The project team was regularly supporting the IMF country team to assess appropriate monetary policy stance and prepare inflation forecasts before country reviews under the Policy Support Instrument program of the IMF. The country team appreciated the support and has expressed interest in updating medium-term projections and consulting monetary policy recommendations on a regular basis before each Bank of Uganda MPC meeting.

Rwanda

The project team helped the IMF country team to extend the semi-structural macroeconomic model for Rwanda from Charry et al. (2014). The model was adapted to reflect money targeting framework of the National Bank of Rwanda, and was used to analyze past money targets misses. The analysis showed that majority of the target misses can be explained by monetary policy shocks and instability of money demand (particularly due to changes in velocity and money multiplier).

Public investment, growth, and debt sustainability

Ethiopia: 2014 Article IV Consultation

IMF staff examined the macroeconomic effects of scaling up public investment using a variant of the model developed by Buffie et al. (2012). The customized model included (i) a state-owned energy sector that exports electricity to neighboring countries and sells to firms and households at controlled, low prices (i.e., below shadow prices); and (ii) a state-owned banking sector that fixes interest rates and lends a large fraction of deposits to the public sector. After calibrating the model to capture Ethiopia's key characteristics, policy scenarios revealed that, despite positive long-run growth effects, transition challenges and trade-offs accompany different financing strategies. For example, reliance on bank borrowing requires substantial fiscal adjustment to prevent macroeconomic instability and crowds out the private sector. Instead, external commercial borrowing eases the fiscal adjustment and allows public investment to increase without crowding out private investment. These gains have to be balanced against the risks associated with significant increases in the ratios of public external debt to GDP. The tradeoffs in other scenarios involving gradual increases in energy prices and slower scaling up of public investment were also analyzed.

Mauritania: Selected Issues

Mauritania's Article IV consultation focused on the issues of natural resource management, public investment and debt sustainability in the economy. Staff presented to the authorities the analytical results. Mauritania—a low-income country endowed with significant mining resources—has embarked upon an ambitious public investment program to address infrastructure gaps and support growth in the non-extractive sectors of the economy, with the objective to achieve faster job creation and poverty reduction. This study applies the Debt, Investment, Growth and Natural Resources (DIGNAR) model to analyze the benefits of the higher public investment as well as the impact of the associated financing requirements on the country's debt and fiscal policy path. The model simulations suggest that the authorities should be prudent regarding their investment plans, in particular in the event of further declines in iron ore prices, and should be ambitious in improving their investment management capacity. In particular, their currently planned public investment path will be costly in terms of foregone private consumption in the medium run—including under current commodity price projections.

Central African Economic and Monetary Community (CEMAC): Select Issues

The CEMAC application of the Buffie et al (2012) model explores the nexus of public investment scaling up, debt sustainability and oil resources. The main findings are: 1) CEMAC's current public investment programs would lead to a public-debt-to GDP ratio of 46 percent in 2030 (compared to the current level of 22 percent). Beyond 2020 when the public investment scaling-up would be completed, public spending would still need to remain elevated in order to maintain the stock of public capital accumulated. 2) Increase in the efficiency and in the return of public capital will reduce public debt sustainability concerns while enhancing non-resource growth. 3) Oil discoveries required to keep debt stable at around 30 percent of GDP beyond 2030 would need to be large enough to allow the oil revenue-to-GDP to rise by 4.5 percentage points above its baseline level, starting in 2015. A negative shock to oil revenue of the same magnitude would lead to an oil revenue-to-GDP ratio close to 60 percent in 2030.

Macroeconomic Management of Natural Resources:

The Democratic Republic of Congo: Article IV Consultation

The Democratic Republic of the Congo: Selected Issues

Joining the IMF Article IV consultation mission in Congo, the team applied the Debt, Investment, Growth and Natural Resources (DIGNAR) model based on Buffie et al. (2012), Berg et al. (2013) and Melina et al. (2014) to analyze a projected decline in oil revenue, which poses a challenge for the design of public investment paths that can foster economic growth while ensuring fiscal and debt sustainability. Simulations show that higher public capital can be achieved with structural reforms rather than aggressive frontloading of public investment, as this second approach puts pressure on the resource fund and public debt. Work continues on extending the model framework to study policy options for other countries that are experiencing an oil well production decline. The model simulations highlight the importance of a prudent approach to public investment.

Niger: Selected Issues

In Niger's Article IV consultation, Staff discussed natural resource management, public investment and debt sustainability issues with the authorities. Niger's medium to long term economic prospects are favorable, given its mineral resources endowment and the ongoing mining extraction, which will turn the country into a natural resource exporter. However, the projected boom in the natural resource revenues poses a policy need in terms of designing a sustainable public investment path for the country. This selected issue summarizes the analytical results from a DSGE model tailored to resource-abundant small-open developing countries, with the purpose of assessing debt sustainability and growth impacts from large public investment scaling-ups in the face of a natural resource revenue boom.

Myanmar: 2014 Article IV Consultation

Natural gas revenues represent an opportunity to expand public investment which, if properly planned and executed, can help close infrastructure gaps, and increase productivity and growth. However, international experience points to the dangers of borrowing against future revenues to accelerate investment which can lead to absorption capacity constraints and threaten debt sustainability. To analyze these issues staff applied the DIGNAR model, which explicitly takes into account the impact of scaled-up investment on economic growth and existing capacity constraints due to low public investment efficiency. Simulations were run around two potential public investment paths and two alternative gas revenue scenarios. The results of this work were produced in collaboration with the DFID team and presented during the mission to representatives of the Ministry of Finance. Simulations indicate that future gas revenue streams in Myanmar should be used to finance a gradual scaling up in public investment while building fiscal space to help maintain a stable macroeconomic environment.

Current Account Norm

Congo

In the last Article IV for Republic of Congo, the model developed in Araujo et al. (2013) was used to assess external sustainability. In particular, the model was used to study the current account dynamics for the country from 2013 to 2019. Since the model captures capital scarcity, which is pervasive in many low-income countries, the returns to public and private capital are higher than the interest rate earned on international assets. Therefore it becomes profitable to invest natural resources domestically instead of saving them abroad. When calibrated to capture several structural conditions of the Congolese economy—e.g., public investment inefficiencies, absorptive capacity constraints, country risk premia, as well as to match several macroeconomic ratios (relative to GDP) for 2013—the model pointed out to some mild overvaluation of the real exchange rate, in contrast to the results from other traditional external sustainability approaches, which do not take account the particular features of resource-rich capital-scarce countries mentioned. The results were discussed with the authorities and featured in the Art. IV staff report.

Gabon: 2014 Article IV Consultation

Methodology developed by the DIFD team solves for a current account norm based on a small open economy model with private and public investment and several frictions such as absorptive capacity constraints, inefficiencies in investment, and borrowing constrains. Results from this methodology suggest an overvaluation of 9.9 and 9.7 percent under cost overrun assumptions of 40 and 20 percent respectively. Higher absorptive capacity constraints are associated with higher current account benchmarks as it is optimal to reduce the pace of investment.

Diversification Toolkit

A diversification toolkit has been created to enable country teams to assess the potential for structural transformation and quality upgrading. Several applications of the toolkit have been completed, and more are underway. This year, 12 internal requests as well as two external requests have been made for the diversification toolkit. In the coming year, the toolkit will be expanded to cover services, and training will be offered to Fund staff and country authorities.

Capital Flows

Capital Account Liberalization Index:

The idea of measuring the openness of the capital account is not new but very few studies have focused on low-income countries, mainly constrained by the lack of an appropriate index. To fill this gap, we construct a de jure index based on information contained in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*. In doing so, the index covers 168 countries with information on 10 types of asset categories over the period 1996 -2013 making it one of the most comprehensive indices available, particularly for low-income countries. Based on this index, we are able to showcase stylized facts on the openness of the capital account including its evolution, regional characteristics, sequencing, etc. We also show potential applications of this index including the link between de jure capital account liberalization with de facto capital flows. As this index is based on disaggregated asset types, we are able to capture the de jure liberalization of a particular asset category and its impact on actual capital flows.

2.2 Uptake by Authorities

Ethiopia

In the context of the Art. IV for Ethiopia, Staff discussed with the authorities the macroeconomic effects of scaling up public investment using a variant of the open-economy Debt, Investment, and Growth (DIG) model developed by Buffie et al (2012). Simulations of the model were helpful to analyze the macroeconomic implications of different financing schemes for the authorities' investment program as an important component of the appropriate policy mix to preserve macroeconomic stability and debt sustainability. Besides the features including in the DIG model, the customized model for Ethiopia incorporated: (i) a state-owned energy sector that exports electricity to neighboring countries and sells to firms and households at controlled, low prices; (ii) a state-owned banking sector that fixes interest rates and lends a large fraction of deposits to the public sector. The model and the investment program were calibrated to capture the key characteristics of Ethiopia's Growth and Transformation Plan. Model simulations showed that reliance on domestic bank borrowing would require substantial fiscal adjustment to prevent macroeconomic instability, while the surge in public investment would also crowd out private investment and trigger a sharp increase in inflation in the short run. By contrast, external commercial borrowing would allow public investment to increase without having cuts in recurrent expenditure, temporary crowding-out of private investment, and a sharp increase in inflation. These gains would have to be balanced against the risks associated with significant increases in the ratios of non-concessional debt and total external debt to GDP. The tradeoffs in other scenarios involving gradual increases in energy prices and slower scaling up of public investment were also analyzed.

Ghana

In response to a request from the Bank of Ghana (BOG), a technical assistance mission visited Accra, Ghana in February, 2015. The TA team has helped the BOG staff to develop its main forecasting tools, train the core staff in using these tools to produce medium-term forecasts and provide policy recommendations, advise on data management, and assist the staff during six real-time forecast updates for the MPC meetings. The authorities have been pleased with the TA provided so far, and expressed interest in continuing the TA to ensure full and successful implementation of the FPAS, which is needed to strengthen the inflation targeting (IT) framework. They have also recently requested to extend the TA topic to provide training to senior management on policy formulation and communication under IT.

Mongolia

IMF staff provided Technical Assistance to the authorities from Bank of Mongolia on debt sustainability modeling for a natural resource rich economy. The staff discussed various features of the model relevant for Mongolia and trained the authorities on Matlab and Dynare to apply these models for their policy analysis. The staff also presented a paper 'From Natural Resource Boom to Sustainable Economic Growth: Lessons for Mongolia' at Bank of Mongolia as part of IMF Article IV policy consultation.

Kenya

The uptake of the DFID financed technical assistance for the Central Bank of Kenya (CBK) has increased significantly. The analytical team of the CBK has been providing regular updates of the medium-term inflation forecast and related policy recommendations at each CBK MPC meeting. In order to successfully adopt the FPAS, the CBK Research Department (now Economics Department) was restructured (including establishing a formal forecasting team), and organization of the forecasting process was improved and formalized.

2.1 High-level Policy Conferences

1. The IMF-DFID team was actively involved in the 2014 IMF Annual Meetings:

   Challenges of Job-Rich and Inclusive Growth

   - Concluding Session: Growth and Reform Challenges
     The concluding session brought together policy makers to discuss the important dilemmas and tradeoffs that countries grapple with as they seek to implement reforms to deliver job-rich and inclusive growth. Deputy Managing Director Min Zhu drew extensively from the diversification work done by the DIFD team.

   - Fiscal Policy and Income Inequality in Sub-Saharan Africa
     The DFID team collaborated with AFR and FAD in organizing this seminar, which addresses the role of fiscal policy in reducing inequality in low-income countries, with a particular focus on Sub-Saharan Africa (SSA). Conventional wisdom has been that in LICs, low levels of both tax revenue and social spending limit the redistributive impact of fiscal policy. This seminar discusses that view against the background of recent successes in LICs at broadening tax bases, the introduction of social transfer systems, and the availability of new technologies, such as mobile banking, which are offering new avenues for fiscal policies to become more redistributive.

2. Preconference Workshop on Capital Flows in Frontier and Emerging Markets
   The workshop held in February 2015 covered topics on the relation of flows and policy cyclicality, the allocation and relocation of flows, international financial flows and macro-financial risk in sub-Saharan African, real effects of capital flows with macroprudential response, and new datasets on capital flows and capital control measures with extended low-income country coverage. The focus was on knowledge exchange related to recent academic and policy research on capital flows covering low- income and emerging market related papers. Participants included members of policy institutions such as the International Monetary Fund, World Bank, Federal Reserve Board, and scholars from Johns Hopkins University, University of Maryland, Trinity College Dublin, and University of Virginia.

3.2 Results of Papers Reflected in IMF Board Discussions and/or Policy Papers

IMF Board Papers:

Macroeconomic Developments and Selected Issues in Small Developing States

The IMF-DFID work was recognized in the IMF Board paper, *Macroeconomic Developments and Selected Issues in Small Developing States.* Box 2 on page 18 highlights the IMF-DFID project's research on diversification in small states, which suggests volatility in growth for small states partly reflects their limited diversification.

Macroeconomic Developments in Low-income Developing Countries

The inaugural IMF policy paper "Macroeconomic Developments in Low-income Developing Countries" (LIDCs) was issued in October 2014. Key messages include: 1) most LIDCs have recorded strong economic growth based primarily on factor accumulation rather than productivity growth; 2) about one-half of LIDCs are classified as being at medium/high vulnerability to a growth shock, with weakened fiscal positions a key source of vulnerability; 3) fiscal institutions should be strengthened to pre-empt the build-up of potential new imbalances.

IMF Staff Guidance Notes:

Staff Guidance Note on Macroprudential Policy – Considerations for LICs

The guidance note explores characteristics of financial systems in low-income countries, such as vulnerability to external shocks and shallow banking systems that should be considered when developing macroprudential policy and frameworks. It also looks at how macroprudential tools can be adapted to the characteristics of the financial systems and policy challenges in LICs.

4.1 Attendance of External Researchers at High-level Policy Conferences

1. Global Development Conference in Accra, Ghana -- June, 2014
   The team presented its recent policy paper on structural transformation and diversification during a plenary session at the conference. The main theme of the conference was "Structural Transformation in Africa and Beyond," and more than 430 participants from 60 countries attended.

2. 11th International Conference Preliminary Program in Wellington, New Zealand – January 2015
   IMF economist Corinne Delechat presented the working paper *Harnessing Resource Wealth for Inclusive Growth in Fragile States* in the Individual Session titled Freedom, Development, and Growth. Over 400 registrants representing 35 countries attended the conference.

3. North American Meeting Econometric Society, Minneapolis, USA
   Adrian Peralta presented the paper, *Commodity price booms: macroeconomic and distributional implications*. The paper finds that an increase in the price of imported food may have a positive impact on the incomes of farmers, but has a negative impact on the income of the urban poor, which are the most fragile group. An increase in the price of commodity exports, in turn, may have a strong positive macroeconomic effect, but also redistributes income from the urban sector to farmers. The impact of a joint shock on both import and export prices is stronger than the sum of the impacts, due to strong nonlinearities in the model.

4. Six papers from the IMF-DFIF project were presented at this CSAE conference. Two IMF staff chaired the sessions:

- Session on Macroeconomics I (chaired by Andrew Berg)
  [Public Investment, Natural Resource Inflows and Fiscal Responses: A DSGE Analysis with Evidence from Uganda]
  Presented by: Tchana Fulbert Tchana, World Bank
  Discussant: Matteo Ghilardi, International Monetary Fund

  Public Investment in Developing Countries Facing Natural Resource Depletion
  Presented by: Matteo Ghilardi, International Monetary Fund
  Discussant: Andrew Berg, International Monetary Fund

  Some Misconceptions about Public Investment Efficiency and Growth
  Presented by: Andrew Berg, International Monetary Fund
  Discussant: Tchana Fulbert Tchana, World Bank

- Session on Macroeconomics 4
  The Distributional Implications of Fiscal Consolidation in Low-Income Countries
  Presented by: Adrian Peralta-Alva, International Monetary Fund
  Discussant: Andrew Berg, International Monetary Fund

  Reshaping the Macroeconomic Effects of Aid: The Role of Reserve and Fiscal Policies
  Presented by: Andrew Berg, International Monetary Fund
  Discussant: Laurence Roope, University of Oxford

  Does Public-sector Employment Fully Crowd Out Private-sector Employment?
  Presented by: Alberto Behar, International Monetary Fund
  Discussant: Adrian Peralta-Alva, International Monetary Fund

- Session on Monetary Policy (chaired by Pranav Gupta)

  The bank lending channel in a frontier economy: Evidence from loan-level data

  Presented by: Andrea Presbitero, International Monetary Fund
  Discussant: Pranav Gupta, International Monetary Fund

  Introducing a Semi-Structural Macroeconomic Model for Rwanda
  Presented by: Pranav Gupta, International Monetary Fund
  Discussant: Andrea Presbitero, International Monetary Fund
  Discussant: Tchana Fulbert Tchana, World Bank

5. IMF Seminar: Sustaining Long-Run Growth and Macroeconomic Stability in Low-Income Countries

   IMF staff Sarwat Jahan presented at Japan International Cooperation Agency (JICA) in June 2014, and separately gave a seminar on *"Sustaining Long-Run Growth and Macroeconomic Stability in Low-Income Countries"* organized by the IMF Regional Office for Asia and the Pacific (OAP), as part of its monthly seminar series. About 30 people from government agencies, private and financial sectors, think tanks, academia, embassies and media attended.

4.2 Results disseminated in e-newsletters

5. May 2014 Newsletter
6. August 2014 Newsletter
7. November 2014 Newsletter
8. February 2015 Newsletter