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Financial Volatility, Macroprudential Regulation and Economic Growth in Low-Income Countries: Completion Report for ESRC-DFID Project ES/L012022/1

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I. Broad Aims and Objectives of the Project

The global financial crisis of 2007-09 highlighted how weaknesses in macroeconomic and regulatory policies, and institutional and market failures, can contribute to a buildup of systemic risks.[1] In this context, a substantial number of proposals aimed at strengthening the financial system and at encouraging more prudent lending behavior in upturns. At the international level, these proposals led to the adoption in November 2010 of the Basel III banking standards, which have been adopted, or are being implemented, in a number of countries around the world (see Basel Committee on Banking Supervision (2011, 2013)).

However, much of the debate focused initially on the implications of financial volatility for *short-term* economic stability, rather than its long-run effects. Yet, financial volatility and financial crises often have large adverse, long-term effects on financial development and economic growth. A key issue therefore is whether macroprudential rules designed to reduce the procyclicality of financial systems and financial instability can be detrimental to long-run growth, due to their effect on the supply of credit or the degree of risk taking by financial intermediaries. This issue is particularly important for the poorest countries, given the need for them to maintain high growth rates to reduce poverty and promote human development (Spratt (2017)).

Accordingly, the purpose of the project was to study, both theoretically and empirically, interactions between financial volatility, prudential regulation, and economic growth, in the context of low-income developing countries and to draw broad policy lessons for the design of macroprudential rules in these countries. The project focused on francophone Sub-Saharan Africa—a region where formal financial systems remain insufficiently developed and the lack of access to credit (as documented in a number of studies) is one of the key constraints on firm performance. Promoting the development of the financial system in the countries of the region is thus important. At the same time, maintaining its stability is essential (Gottschalk (2013)). Indeed, because inadequate access to credit often translates into a limited ability to borrow and smooth shocks, the real effects of financial volatility on firms and individuals can be not only large but also very persistent—thereby translating into adverse growth effects.

Specifically, the project had three main objectives:

1. Contribute to the existing analytical literature in areas related to the links between financial volatility (possibly induced by international capital flows, including foreign aid and remittances) and economic growth, and how the macroprudential regulatory rules embedded in Basel III (especially those deemed appropriate for the institutional context of developing countries, such as reserve or liquidity requirements, , as discussed in for instance in Agénor and Pereira da Silva (2016)) can help to mitigate the adverse effects of that volatility on growth.

[1]The global crisis has also led to a debate about whether there may be "too much finance," and more generally whether beyond a certain threshold financial development may have either a negligible effect, or even a negative impact, on growth. See Arcand et al. (2012), Law and Singh (2014), Ductor and Grechyna (2015), Cecchetti and Kharroubi (2015), and Samargandi et al. (2015. One reason for that is the possibility that financial development may divert capital and labor inputs (especially highly-skilled labor, with a potential to contribute significantly to innovation) from productive activity to speculation, or because it increases the risk of financial crises.

2. Provide new evidence on the impact of financial volatility and its determinants (both domestic and external) on economic growth, with particular attention to the case of the low-income countries in Sub-Saharan Africa, while controlling for factors such as macroeconomic stability, the quality of the regulatory environment, the degree of trade and financial openness, and the degree of financial development.

3. Develop case studies for Francophone Sub-Saharan African countries focusing on the links between financial volatility (broadly defined to include volatility of foreign aid, remittances, and other types of capital flows), macroprudential regulation, and growth, to account for their specific monetary and financial regime.

This Completion Report dwells on all the contributions of the project (including paper-specific policy briefs), to draw broad policy lessons regarding how macroprudential regulation can promote financial growth in low-income countries.

II. Project Contributions

To address these objectives the project developed a number of theoretical and empirical papers and country case studies.[2] All papers subsequently served as inputs in the preparation of specific policy briefs, as well as two integrated policy briefs.

1. Theoretical Contributions

The theoretical contributions of the project focused on a) the links between macroprudential regulation (in the form of reserve requirements), growth and welfare, and b) the effect of aid volatility on human capital accumulation and growth.

1.1 Growth and Welfare Effects of Macroprudential Regulation

As noted in the introduction, the growth effects of prudential regulation have not received much emphasis in the literature and have been largely absent from recent discussions about the implications of the global financial crisis for financial reform. Indeed, much of the recent research on these issues has focused on the benefits of these policies in terms of reduced procyclicality of the financial system. Instead, Agénor (2016*a*) focused on the longer-run, growth effects of these policies, as well as their welfare effects.

Specifically, Agénor (2016*a*) studied the growth and welfare effects of macroprudential regulation in an overlapping generations model of endogenous growth with banking and agency costs. Indivisible investment projects combine with informational imperfections to create a double moral hazard problem—first, entrepreneurs, who need external funds to finance their investment projects, may be tempted to choose less productive projects (shirk) with higher non-verifiable returns; second, although bank monitoring mitigates the moral hazard problem associated with the behavior of entrepreneurs, the fact that banks use deposits from households

[2]All these contributions (in English and French, for the policy briefs) are available on the project's website: http://www.socialsciences.manchester.ac.uk/cgbcr/research/escr-dfid-project/research-outputs/

to fund their loans creates an incentive to shirk when monitoring is costly—and a role for bank monitoring. When the optimal monitoring intensity is endogenously determined, an increase in the reserve requirement rate (motivated by systemic risk considerations) has conflicting effects on investment and growth. On the one hand, requiring banks to put away a fraction of the deposits that they receive reduces the supply of loanable funds. On the other, a higher required ratio mitigates banks' incentives to monitor, thereby lowering monitoring costs and freeing up resources to increase lending. The contribution showed that this trade-off can be internalized by choosing the required reserve ratio that maximizes growth and welfare. However, the risk of disintermediation means that financial supervision may also need to be strengthened, and the perimeter of regulation broadened, if the optimal ratio is too high. The associated policy brief discussed in more detail the practical implications of these results.

1.2 Aid Volatility, Human Capital, and Growth

Recent research has documented the fact that the volatility of aid (one of the key type of financial flows to low-income countries) has increased significantly in recent years. In addition, this volatility seems to affect all categories of aid—including project aid. This is particularly problematic given that this category of aid is designed to promote (directly or indirectly) investment in physical and human capital. Indeed, as emphasized by Agénor and Aizenman (2010), a key implication of lack of predictability in project aid disbursements is that it makes it difficult for recipient governments to formulate medium-term spending plans to spur growth. If aid finances a large fraction of infrastructure investment, as is often the case in low-income countries, and if creating public capital requires time (as a result of a "time to build" assumption, for instance), an aid shortfall could bring the process to a halt if no alternative sources of financing are available. In addition, in response to high volatility, countries may opt to reduce the desired level of investment, which, ceteris paribus, means lower funding requirements; donors, seeing lower requirements, may misinterpret it as a signal of absorption problems, and effectively reduce aid commitments—making the initial concerns about lower assistance self-fulfilling and possibly contributing to the perpetuation of a stagnation equilibrium.

In one of several project contributions to this issue, Agénor (2016*b*) studied the effect of aid volatility on growth, in a model where the decision to invest in skills is endogenous. The analysis focused on a low-income economy where the cost of acquiring education benefits from public subsidies, which are partly financed through foreign aid. Thus, aid plays a critical role in determining the distribution of skills across workers. By creating uncertainty about the net return to education, a high degree of aid volatility mitigates agents' incentives to invest in skills. If savings and growth depend on the composition of the labor force, and if more able workers are more productive, aid volatility may have an adverse effect on the mean growth rates of investment and output. Aid volatility may therefore contribute to the persistence of a stagnation equilibrium.

The associated policy brief discussed in more detail two approaches to improve aid predictability. The first approach has been to urge recipients to protect themselves from fickle donors by saving (at least a fraction of) aid windfalls in a reserve or stabilization fund. In principle, saving aid windfalls would allow building up space for future aid shortfalls and could be part of a strategy to manage unpredictable aid. However, can a contingency fund—financed partly through aid proceeds but also partly through domestic taxation, mitigate the adverse effects of aid volatility? Agénor and Aizenman (2010) have argued that a contingency fund can create a

moral hazard effect. If in response to high aid volatility countries opt to allocate a fraction of aid flows to a contingency fund, donors may misinterpret this policy adjustment as a signal of absorption problems. As a result, they may effectively reduce aid commitments—making the initial concerns about lower assistance self-fulfilling. If indeed future aid depends on the size of the fund, precautionary public savings may not be able to mitigate the adverse effects of fluctuations in foreign aid on government spending and eventually on economic growth. The same issue would arise if the fund is built for the specific purpose of stabilizing spending on education, in line with the foregoing discussion.

The second approach is to promote more stable donor-recipient relationships, that is, to encourage donors to move away from fragmented, conditionality-based funding and make multi-year pre-commitments, with appropriate safeguards, to ensure a longer time horizon (Eifert and Gelb (2006)). By lengthening aid allocation periods and by tying them to slower-moving country indicators rather than reconsidering fast-disbursing aid volumes annually within annual conditionality frameworks, discretion over aid disbursements would be removed. Yet, it would still allow donors to rapidly cut aid if policies and/or governance in a country deteriorate sharply. This would mean significant changes for the international aid architecture. Currently, many aid budgets are set annually, and multilateral institutions need to replenish their resources for low-income countries every three years. Longer-term commitments to budget aid—say, over a 10-year horizon—would imply that aid funding mechanisms, including for multilateral institutions, would have to be reconsidered. Unfortunately, there has been very little progress in that direction in recent years, and there is very little to suggest (given the dire situation of public finances in many donor countries) that this situation will improve any time soon.

2. Econometric Contributions

Much of the empirical literature concerned with the effect of financial factors on growth has focused on *levels*; there has been limited research on the impact of financial *volatility* (domestic or international) on growth. However, even though financial development may stimulate private investment and raise growth in the long run, financial volatility may at the same time hamper investment—for instance by blurring price signals and making it more costly to monitor borrowers and thereby increasing borrowing costs. Volatility may also deter investment due to irreversibility problems, a well-documented issue for Sub-Saharan Africa (see Agénor (2004, Chapter 2)). At the same time, volatility may also increase savings (due to precautionary behavior), but such savings may not be invested domestically and instead transferred abroad, fueling capital flight—with potentially an adverse effect on growth.

The project's contributions to this debate have focused on *a*) the links between financial volatility, macroprudential regulation, and growth; and *b*) the links between capital flows (both in levels and volatility), the real exchange rate, and growth.

2.1 Financial Volatility, Macroprudential Regulation, and Growth

Neanidis (2015) examined the links among macroprudential regulation, the volatility of financial flows, and economic growth. In particular, he explored whether macroprudential regulation mitigates the adverse effects of capital flows volatility on economic growth. Using cross-country data for the period 1973-2013, he found that macroprudential regulation promotes economic growth by reducing the negative impact of volatile capital flows. These findings hold

for both aggregate capital flows and their various components, while they are also robust for various indicators of macroprudential policies. His results support the argument that macroprudential policy rules designed to ensure financial stability are beneficial to long-run economic growth.

The associated policy brief discussed in more detail the practical implications of these results. He suggested that these results support the decisions in many countries, developed and developing alike, to put in place macroprudential policies aimed at strengthening the safeguards against financial instability and financial crises. Such regulatory frameworks, however, need to be judged for their effectiveness not only against the objective of short-term economic stability, but also with reference to their long-run growth implications. His analysis took this consideration into account and investigated the role of macroprudential rules in the long-run growth process by focusing on the way financial regulation influences financial volatility. His results showed that macroprudential policies succeed in mitigating the negative growth effects of unstable capital flows and, by so doing, become effective in limiting financial system vulnerabilities. Further results qualify that these outcomes are mainly restricted in the sample of middle-income countries, while countries that are relatively open, with deep financial systems and exposed to macroeconomic volatility experience lower marginal gains—although they still benefit. At the same time, Sub-Saharan Africa (and within it its Francophone countries) gain enormously from the imposition of macroprudential regulation, over and above the average gains in the sample. This implies that the marginal benefits in these regions have the potential to continue with the spread of pan-African banking groups so long as financial regulation is not outpaced.

2.2 Aid, Remittances, Economic Volatility and Inequality

Chauvet et al. (2016) examined the adverse impact of macroeconomic volatility on inequality and the role that aid and remittances could play in mitigating this effect. Using a panel of 142 countries over 1973-2012, they found that macroeconomic volatility has an adverse impact on economic inequality and that the poorest are the most exposed to these fluctuations. However, while aid and remittances do not seem to have a clear direct impact on inequality, they found robust evidence that aid helps to dampen the negative effects of volatility on the distribution of income, while remittances do not.

The associated policy brief discussed in more detail the practical implications of some of their results. They argued that in order to reduce poverty foreign aid should be allocated preferentially to the countries, which are the more vulnerable to external shocks. It is at the opposite of the practice of the Development Banks (notably the World Bank) whose "performance based allocation formula" gives priority to good governance. Taking vulnerability to external shocks into account would be in accordance with the will of the international community to help mainly the Least Developed Countries (LDCs) as economic vulnerability is one of the three criteria of inclusion of a country in the category, beside a low income per capita and a low level of human capital.

2.3 Capital Inflows, the Real Exchange Rate, and Economic Growth

Combes et al. (2016) focused on the growth impact of capital inflows. They began by pointing out that capital inflows can directly support economic growth by relaxing constraints on domestic resources, but can also indirectly weaken growth by hampering competitiveness

through a real appreciation of the exchange rate. They used for their analysis a large sample of 77 low-income countries (LICs) and middle-income countries (MICs) over the period 1980-2012. Their results showed that capital inflows affect directly and indirectly economic growth. Specifically, their main findings were (i) a 1 percent increase in total net capital inflows appreciates the real exchange rate by 0.5 percent; (ii) the real exchange rate appreciation effect of remittances is twice as big as the effect of aid, and ten times bigger than the effect of FDI; and (iii) overall, capital inflows are associated with higher economic growth after netting out the negative impact of real exchange rate appreciation. Doubling capital inflows per capita would increase growth by about half of the average annual growth rate observed within the sample over the period 1980-2012, resulting in a gain of roughly 2 additional percentage points.

The associated policy brief discussed in more detail the practical implications of some of their results. They argued, in particular, that the fact that the impact of FDI on growth is much more direct and stronger in LICs than in MICs (most likely reflecting higher returns in these economies) conflicts to some extent with the view that the attractiveness of a country is conditional on the quality of its institutions, the availability of a high level of human capital or the quality of financial markets. Nevertheless, LICs generally benefit from FDI oriented to the exploitation of natural resources with few backward and forward spillovers effects, whereas FDI in MICs are likely to have stronger horizontal and vertical influences within the domestic economy. Therefore, the challenge for LICs is to use FDI as a lever to promote both raw material processing and a larger participation in global value chains. More generally, developing countries should fully take into account the fact that capital inflows while critical to finance development needs and spur economic growth, can hamper competitiveness.

2.4 Information Sharing, Credit, and Financial Stability

Recent work has highlighted that the development of credit information sharing (CIS) strengthens financial systems. The theoretical literature has explored three channels by which credit information sharing reduces banking fragility. First, information sharing can reduce moral hazard and enhance the borrowers' incentives to repay. Borrowers repay their loans because they know that defaulters will be blacklisted, reducing external finance in future. Furthermore, mitigation of the hold-up problem allowed by information sharing reduces interest rates, increasing entrepreneurs' incentives to exert effort and therefore reducing moral hazard. Second, CIS reduces adverse selection by improving bank's information on credit applicants. Third, credit information sharing reduces the risk of over-borrowing as individual lenders can access information on the overall indebtedness of borrowers from all lending sources. Empirical papers show that credit information sharing is beneficial for stability at the microeconomic level. Information sharing reduces credit risk and default rates. While credit information sharing reduces individual risks of defaults, it has ambiguous effects at the macro level due to composition effect. CIS may lead to greater access to credit for riskier borrowers and banks' portfolio quality can be reduced. Recent empirical document that greater information sharing leads to a reduced likelihood of financial crisis.

Guérineau and Léon (2016) contributed to this debate by studying the impact of CIS on financial stability, with special attention to its interactions with credit booms. A probit estimation of financial vulnerability episodes—identified by jumps in the ratio of nonperforming loans to total loans—was run for a sample of 159 countries dividing in two sub-samples according to their level of development: 80 advanced or emerging economies and 79 less developed countries. The

results show that: (i) credit information sharing reduces financial fragility for both groups of countries; (ii) for less developed countries, the main effect is the direct effect (reduction of NPL ratio once credit boom is controlled), suggesting a portfolio quality effect; (iii) for advanced and emerging countries, credit information sharing also mitigates the detrimental impact of credit boom on financial fragility; and (iv) the depth of information sharing has an negative impact on the likelihood of credit booms.

The associated policy brief identified several policy implications of these results. First, credit growth is a key variable for macro-prudential policies in low and middle-income countries. Second, current efforts to develop CIS schemes should be strengthened, since the latter allow for credit expansion without excessive increase in the overall credit risk. Third, CIS has little impact on credit booms in developing countries, which justifies the extension of other tools—such as macroprudential policies—to prevent excessive credit growth. Finally, extending the coverage of information sharing systems may not be enough, because the depth of information sharing appears to be more efficient in preventing credit booms.

3. Case Studies

The project also developed two case studies, both of which focused on French-Speaking Sub-Saharan Africa.

1. The first case study, by Guérineau et al. (2016) and entitled **Macroprudential Policies in WAEMU Countries**, focused on reviewing the existing macroprudential regime, and offered proposals for reform, in the WAEMU zone. Its goal was to assess the relevance, easiness of implementation, and expected effectiveness, of a macroprudential framework that goes beyond standard microprudential tools of financial regulation and supervision in the WAEMU.

The study first reviewed the existing prudential framework in WAEMU countries, especially with regard to the implementation of Basel II. This diagnosis of the current limitations of the prudential framework served as a crucial step to assess the capacity of WAEMU countries to implement new regulations. Second, it analyzed the tools of macroprudential supervision set by Basel III, particularly the strengthening of the risk coverage of the capital framework (countercyclical buffer capital and leverage ratio requirement) in the context of these countries. Several points received particular attention: (i) constraints imposed by the low financial development in the region; (ii) the consistency of the overall financial stability framework, i.e. between the macroprudential scheme and others tools of financial stability, microprudential framework, information sharing system, crisis resolution schemes, but also monetary policy; (iii) the potential undesired effects of countercyclical tools, for instance through a signaling effect.

Third, the study focused on how the specific features of the WAEMU area—the existence of a monetary and economic union (a common banking supervision agency, a single monetary policy) and the membership to the CFA franc Zone (fixed exchange rate, convertibility backed by the "operation account" mechanism)—may affect the implementation and the effectiveness of a new macroprudential framework.

The policy recommendations regarding the need to adapt Basel III rules in WAEMU (tools and phase-in process) and the priority actions to launch were presented to the regulatory authorities of the region. With its focus on western Africa, this study complemented those

developed in the context of another project funded under Phase 1 of the DFID-ESRC Growth Programme (*Financial regulation in low-income countries: Balancing inclusive growth with financial stability*, ES/J008621/1), which focused on Eastern Africa.

2. The second case study, by Gabin et al. (2017) and entitled **When is aid destabilizing? Analysing profiles of aid flows in four low income countries**, focused on the cyclicality and stabilizing profiles of aid inflows in four countries: Benin, Burkina Faso (BFA), Central African Republic (CAR), and the Democratic Republic of Congo (DRC). The four countries in their analysis experienced different aid shocks. As post-conflict states, CAR and DRC received more contracyclical aid, whereas aid flows to Benin and BFA were procyclical. However, the capacity of aid inflows to stabilize the economy does not structurally depend on the cyclicality of aid inflows. This capacity appears to be more influenced by government capacities constraints and policies choices. Based on these case studies, Gabin et al. (2017) drew the following conclusions and policy recommendations: (i) The internal political environment and the relationship with international partners affect the composition and cyclicality of aid inflows; and (ii) Aid volatility affects significantly government revenue and expenditures. Stronger reliance on domestic bank financing, lower investment rates and unstable taxes are the most likely costs associated with volatile aid inflows; (iii) By increasing the absorptive capacity of the economy, private sector investment is associated with a more stabilizing effect; (iv) The level of international reserves accumulation seems to be associated with the stabilizing effect. Central banks in all four countries appear indeed to have protected themselves from aid volatility by adjusting the level of their international reserves; and (vi) Administrative and absorptive capacity constraints need to be addressed to increase the stabilizing effect of foreign aid inflows.

4. Integrated Policy Briefs

The material developed in the theoretical contributions, the econometric studies, and the country case studies served as a basis for the preparation of two integrated policy briefs, which reviewed the specific policy lessons that can be drawn from the research conducted in the context of the project. The first integrated policy brief, **Macroprudential Regulation for Promoting Growth in Low-Income Countries: Lessons from an ESRC-DFID Project**, focused on the contributions of the project for understanding the links between macroprudential regulation, financial volatility and growth. The second integrated policy brief, **International Financial Integration, Financial Volatility and Growth: Lessons from an ESRC-DFID Project**, focused on the contributions of the project for understanding the links between International Financial Integration, Financial Volatility and Growth.

III. Workshops, Conferences, and other Activities

All other activities under the Project progressed very much in line with the original plans. Two one-day workshops took place in April 2015 and April 2016 in Clermont-Ferrand, France, with participation of all of the researchers involved in the project. All investigators participated in numerous seminars (both in academic and policy circles) and conferences to disseminate the project's outputs. A very active blog, both in French and English, was also run for several months and helped to disseminate further the project's contributions. Participants involved academics and policymakers from numerous countries.

The project's closing conference took place on November 9th, 2016, in Dakar Senegal, as initially planned. The conference was hosted by BCEAO (the Central Bank of Western African States), one of the main stakeholders in the area of macroprudential regulation in Western Africa. The conference was attended by more than 60 people, including Staff from BCEAO's Research Department and Financial Stability Department, as well as staff from BEAC (Bank of Central African States, BCEAO's sister institution in the CFA franc zone), the African Development Bank, the International Monetary Fund, the World Bank, and academics.

A one-day training event on current challenges in macroprudential regulation, and econometric methods to assess the impact of financial regulation on growth, also took place in Dakar the day before the conference (see below).

IV. Impact and Capacity Building

1. Impact

The project, whose outputs (both in French and English, for the policy briefs) have been, and will continue to be, widely circulated, has already achieved both *conceptual impact* and *instrumental impact*.

1. In terms of *conceptual impact*, there are two dimensions to highlight. At the analytical level, one of the contributions of the project developed a formal framework to study the links between financial stability, macroprudential regulation, and economic growth. This is an important because much of the literature in recent years has focused on assessing how macroprudential financial regulation should be designed to reduce *short-run* procyclicality and mitigate the risk of financial crises. However, policies designed with those objectives in mind could well be detrimental to economic growth in the *longer run*, as a result of their adverse effect on risk taking and incentives to borrow and lend. In low-income countries, where sustaining high growth rates is essential to increase standards of living and escape poverty, understanding the terms of this trade-off is essential. The paper is one of the first to discuss these issues and can be built upon or extended in a number of fruitful directions by other researchers.

Another analytical contribution of the project is the development of an econometric methodology to analyse (using a newly-compiled dataset) the impact of macroprudential policies on growth, using dynamic panel data techniques. This methodology, which importantly accounts for possible threshold effects and interactions among variables, is likely to prove useful to other researchers in that area.

2. In terms of *instrumental impact*, the project has been successful for several reasons.

a) Each core academic paper was systematically accompanied by the preparation of a policy brief, which helped to draw together in a mostly nontechnical way the main policy implications of each contribution. These briefs have been widely circulated to policymakers.

b) A major stakeholder in the region, BCEAO (one of the two central banks of the CFA franc zone), was involved in the project at the outset. Indeed, the Director of BCEAO's Financial Stability Department was from the very beginning a co-investigator and was directly involved in the project's design and scope. He co-authored one of the policy briefs produced by the project. Moreover, two other co-investigators are staff members of two important non-academic stakeholders in the region, the African Development Bank and International Monetary Fund. In particular, in the context of its surveillance mandate for its member countries, the Fund has a direct interest in the issues addressed by the project and their policy implications.[3] These two co-investigators have helped to disseminate the project's contributions within their institution, thereby promoting impact.

c) As noted earlier, a detailed case study on the current macroprudential regime in the Western African Economic and Monetary Union (WAEMU, the group of countries covered by BCEAO), and ways to improve it (based in part on the research conducted in the context of the project) was prepared by project members in close collaboration with BCEAO staff and immediately caught the attention of the Authorities at the highest levels of the institution. It is expected that this may lead to the adoption of (some of, if not all) the recommendations made in the study. Moreover, these recommendations are expected to be carefully examined by BCEAO's sister institution in the CFA franc zone in Central Africa, BEAC, and to lead to regulatory reforms in that region as well.

d) Project contributions have been presented (both in English and French) in a number of academic and policy-oriented events, including the project's final conference, which took place in Dakar, Senegal, in November 2016. Several of these events were attended by policymakers from national institutions, the region, and international organizations.

e) An active blog (see http://projects.socialsciences.manchester.ac.uk/esrc-dfid/) has been maintained around the papers and themes covered by the project, with participation from policy-oriented economists from all around the world—including some from major international institutions (e.g., the International Monetary Fund and the World Bank). The blog has been run in both English and French.

To achieve further impact, the following actions are planned.

a) Continue to disseminate the project's outputs, both academic and policy-oriented, through more publicity for the project's website (by exploiting existing distribution lists of current and future collaborators for instance) and maintain an active blog, to continue to promote the discussion around the themes covered by the project.

b) Collaborate with BCEAO and provide feedback on the eventual implementation of the recommendations provided in the case study referred to earlier, and encourage BEAC to review and reflect on these recommendations as well, by capitalizing on the close links between these two institutions and the fact that the Director of BCEAO's Financial Stability Department is a co-Investigator and actively participated in shaping them up.

[3]See International Monetary Fund (2013, 2014) for instance.

c) Circulate widely the two summary policy briefs, which integrated (as noted earlier) the policy recommendations of all the individual contributions (also referred to earlier).

d) Dwell on the large network of government officials in francophone Africa connected with BCEAO and BEAC (given their central role as major policy institutions in the region) and the connections of the members of the project's International Advisory Committee (which consists of former senior policymakers in Francophone Sub-Saharan Africa and experts on the region in international organizations), to further disseminate the project's outputs and promote impact in national and international development institutions.

The policy recommendations of the project, to the extent that they demonstrate practical relevance to decision-makers and practitioners in the field, will prove useful as well to international organisations like the African Development Bank, the International Monetary Fund, and the World Bank, which are all involved in providing advice to the region on financial sector policies and financial regulation.

In addition to policymakers in regional central banks and international institutions, academics working (from analytical, empirical, and policy perspectives) on financial sector issues and growth in Sub-Saharan Africa will also benefit from the research, methodological contributions, and the findings of the project.

Impact on these different groups of stakeholders is expected to materialize not only in the short run (for instance in terms of affecting the short-term policy agenda of BCEAO and BEAC on financial regulation, as well as policy reports on the region by international organisations) but also over time, in terms of structural institutional reforms aimed at adapting the existing macroprudential regulatory regimes in the region, in line with the project's policy recommendations. Over time, the project's outputs will also help international organisations to shape their advice on structural financial policies, in order at promote financial stability and economic growth in the region.

To ensure that these outcomes materialize, it is important to maintain contact with the co-investigators from these institutions. Senior project members have committed themselves to do so on a personal basis, but ESRC can also help by providing funding on an annual basis for the next 3-4 years to the Principal Investigator, or another senior co-Investigator, to finance a short visit to BCEAO in order to review and discuss onsite with the institution how the project's recommendations are being implemented and provide feedback on potential obstacles—either conceptual or practical—if any.

2. Capacity Building

By its very design, the project involved capacity building. The Director of BCEAO's Financial Stability Department was one of the co-Investigators and staff from his department were involved in the preparation of the case study focusing on macroprudential regulation in Western Africa. At the same time, there was also sharing of datasets and techniques between co-investigators and BCEAO. These activities had a direct capacity building effect. Co-authorship of two papers was also beneficial in terms of capacity building.

In addition, participants at the project's closing conference in Dakar benefited from onsite specialized training on the international evidence on macroprudential regulation, and on the econometric methods used in some of the project's papers, as well as on the use of the datasets and relevant computer codes prepared in the context of that research. This capacity-building effort (which was not part of the project's initial plans but was added at a later stage) was able to capitalize on the presence of a large specialized audience in Dakar. Participants to the event included not only staff from BCEAO and BEAC (including staff from BCEAO's Research Department) but also a number of academics working on financial sector issues and growth in Sub-Saharan Africa.

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