Growth Research Programme

Financial volatility, macroprudential regulation, and economic growth in low-income countries

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Key messages:

1. Macroprudential regulation and credit information sharing are crucial policy tools for achieving growth in low-income countries, helping to strike the right balance between financial stability and credit growth.

2. Aid can be volatile, but can also mitigate the harmful effects of economic volatility on growth and development. Aid could therefore target those countries more vulnerable to shocks.

3. Exchange rate management and productive use of capital inflows are essential. A doubling in new capital inflows to poor countries raises growth by 2 percentage points, but this could jump to 3.5 percentage points if negative effects through real effective exchange rate appreciation are eliminated.

This brief summarises and sets in context findings from DEGRP research project 'Financial volatility, macroprudential regulation and economic growth in low income countries', led by Professor Pierre-Richard Agénor of University of Manchester with researchers from Manchester, Fondation pour les Études et Récherches sur le Développement International, Université d'Auvergne, International Monetary Fund, and the African Development Bank.

Volatility and growth

The global financial crisis of 2007-2009 has led to renewed interest in managing economic shocks and their impact on growth and development. Whilst the crisis emerged in developed countries and affected these countries most, developing countries were also affected. And given the systemic nature of financial shocks in developed countries, there is no reason to think that developing countries will be immune to them in the future. It is therefore important to think about how financial crises can be managed (Griffith-Jones and Gottschalk, 2016).

Managing shocks is a delicate balance. On the one hand, less volatility raises the investment rate, but on the other hand, reducing risk-taking to promote stability will also remove incentives for private actors to invest in future projects with high returns. The choice between highly volatile but high mean growth and low volatile and low mean growth can be a difficult one, even when we know how to regulate financial crises.

Economic volatility more generally is a key issue in development. Low-income countries (LICs), defined as such on the basis of their 2008 GNI per capita, increased their per capita GDP by only 0.2% annually between 1960 and 2007, but they could have increased it by 2.0% if they had eliminated years with negative growth rates (Winters et al., 2010).

These countries remain poor partly because they are plagued by volatile growth, with frequent periods of deeply negative growth, or downturns, that more than cancel out prior periods of positive growth. They are also often poorly equipped to deal with, and recover from a range of adverse shocks, from global economic shocks, to severe

commodity price volatility, domestic financial shocks, to famine and other devastating natural disasters. These shocks can have long term impacts on growth by deferring investment in human or physical capital.

The development community has also long debated the effects of aid on growth, and the conditions under which aid's growth effects can be enhanced. Whilst there are many facilities at the IMF, World Bank and EU aimed at reducing volatility (te Velde et al., 2011), questions remain around aid's efficacy in reducing economic volatility. It has also been asked whether the volatility in aid itself contributes to economic volatility in LICs, rather than mitigating it (Agénor and Aizenman, 2010).

The DEGRP research

Aims

The DEGRP project's aims were threefold.

First, it aimed to shed light on the links between financial volatility (e.g. through international capital flows including foreign aid) and economic growth, and how macroprudential regulatory rules (including those embedded in the Basel III banking agreement) affect this link.

Second, it aimed to provide new evidence on the determinants of financial volatility and the impact of financial volatility on economic growth, specifically in relation to low-income countries in sub-Saharan Africa.

Finally, it aimed to develop case studies for Francophone sub-Saharan African countries focusing on the links between financial volatility, macroprudential regulation, and growth.

Methods

The project used a range of methods in pursuit of these aims. These include a number of theoretical contributions analysing the impact of macro-prudential regulation. For example, one paper explores one channel through which aid volatility may adversely affect growth (and possibly welfare) in a model where the decision to invest in skills is endogenous.

The project also used a number of statistical methods, based on panel data analyses, and dynamic Generalised Methods of Moment system estimators (which address potential endogeneity of the explanatory variables) to obtain policy-relevant insights. One paper used panel data from 142 countries for five year averages over 1973-2012 to estimate economic volatility through aid and a range of other factors. Another empirical paper uses a probit estimation of financial vulnerability in a sample of 159 countries over 2008-2014, yielding a maximum of around 1000 observations.

The team also developed an econometric methodology for analysing the impact of macroprudential policies on growth, using dynamic panel data techniques and accounting for threshold effects and interactions among variables.

In addition, the project included qualitative case studies on the implementation of macroprudential regulation in Francophone West African countries.

Box A: Key terms

Financial volatility refers to the degree of variation in the level of financial flows (including e.g. domestic credit and international financial flows) from their average (trend) levels.

Macro-prudential regulation refers to regulation aimed at reducing or mitigating systemic financial risks through instruments such as bank capital requirements or reserve requirements.

Credit information sharing refers to the process where credit providers (including bank and non-bank financial institutions) exchange information on their outstanding lending portfolios.

Findings

The project has conceptual and empirical findings which can be categorised into the following broad areas.

The finance-growth link, macroprudential regulation and banking fragility

On **macroprudential regulation**, the project develops a model to think about choosing the required reserve ratio that maximises growth and welfare (Agénor, 2016a). It helps us to think about the trade-offs between short-run and long-run effects of stabilisation policies through a formal framework, arguing there is a potential trade-off between the stability and growth effects of reserve requirements which can be addressed through the optimal setting of reserve requirements.

Analysis of cross-country data over 1973-2013 for more than 80 countries showed that macro-prudential regulation promotes growth by mitigating adverse effects of capital flows volatility on growth (Neanidis, 2015). This effect relates specifically to middle-income countries and to sub-Saharan Africa. On the other hand, macroprudential regulation is less effective in countries more open to trade and with deeper financial systems.

In addition to macroprudential regulation, **credit information sharing** (CIS) may also help to stabilise economies by reducing the likelihood of banking fragility. In conceptual terms, CIS could (i) reduce moral hazard by borrowers and improve the incentives to repay; (ii) reduce adverse selection around credit applications; and (iii) reduce over-borrowing.

An empirical paper (Guérineau and Léon, 2016) based on 159 countries and some 1000 observations suggests that CIS reduces financial fragility by a reduction in non-performing loans, reduces the detrimental effects of credit booms, and leads to fewer credit booms in the first place, although this latter effect is not present in the sub-sample of developing countries.

Guérineau et al.'s (2016) review of existing macroprudential regimes in Western African Economic and Monetary Union (WAEMU) countries helped to highlight the current limitations of the prudential framework in low income countries: (i) low financial development; (ii) the lack of consistency in the overall financial stability framework, i.e. between the macroprudential scheme and others tools of financial stability, micro-prudential framework, information sharing system, crisis resolution schemes, but also monetary policy, and (iii) the potential undesired effects of countercyclical tools, for instance through a signalling effect. All these issues need further attention when designing appropriate macro-prudential regulation.

Aid volatility, economic volatility and growth

The project also has new findings around **aid and economic volatility.** In a conceptual paper Agénor (2016b) examines the incentives to invest in skills. Aid has become more volatile at country level and such volatility can have harmful impacts on growth if increased volatility leads households to choose not to invest in human capital, because of low expected returns from education.

An empirical paper by Chauvet et al. (2016) uses a dataset of 142 countries over 1973-2012. They find that whilst output volatility has an adverse effect on income distribution, inequality and poverty, aid in time of heightened volatility, tends to dampen this adverse effect of output volatility. Thus aid, through the pro-poor impact of expenditure and stabilising purposes, is found to reduce income inequality by smoothing the adverse impact of output volatility. This has implications for the optimal allocation of aid.

Capital flows and exchange rate management

A number of important empirical findings relate to the **impact of international capital flows and associated macroeconomic policies**. The

empirical paper by Combes et al. (2016) examines a large sample of 77 low- and middle-income economies over the period 1980-2012 and finds that capital inflows have a direct and positive impact on growth, but they indirectly lower growth prospects by appreciating the real effective exchange rate (REER) and weakening the recipient country's competitiveness. Low-income economies need to understand that capital inflows, while critical to finance development needs and to spurring economic growth, can also lead to significant REER appreciation and loss of competitiveness, thereby complicating macroeconomic management.

The paper also compares how different types of capital flows relate to the REER, arguing that the impact of remittances on the REER is twice as big as aid, and ten times as big as the impact of FDI. Finally, the project estimates that a doubling in new capital inflows raises growth by 2 percentage points, but if there had been no negative effects on the REER, they could raise growth 3.5 percentage points. These findings have implications for how countries need to balance the need for capital inflows with management of the REER.

Implications

The project findings have major implications and relevance for the debate on the link between finance and growth, the management of capital flows, and the link between aid and volatility.

The project contributes to other DEGRP findings (e.g. the work led by Griffith Jones) and related policy debates around the finance and growth link. There was a prevailing view prior to the financial crisis that more credit (financial development) is always good for growth. This view has been refined significantly in recent years, including by previous DEGRP research.

This project contributes to this, by arguing: (i) that macro-prudential regulation is essential in striking the right balance between financial stability and increasing credit; (ii) the setting of macroprudential instruments should go beyond short-run financial stability considerations and internalise potential trade-offs between financial stability and growth; and (iii) that credit information sharing schemes should be developed further even though they on their own are not sufficient in reducing harmful credit booms and busts in the poorest countries. Every central bank should consider next steps on these policy lessons.

The potential for international capital flows to contribute to growth and development is not in doubt. The financial landscape faced by the poorest countries is also changing rapidly as even low-income countries access the market for international sovereign bonds or, as is the case with sub-Saharan Africa, receive finance from China. However, capital inflows are not without challenges for recipient countries and more thought needs to go into how capital flows are attracted and managed.

More specifically, capital inflows which may contribute to growth initially often lead to a significant appreciation in the real effective exchange rate which in turn hampers competitiveness and reduces the growth impact of inflows. Different flows tend to have different impacts on the REER. However, the fundamental question is what can be done to ensure that capital inflows are used productively and raise efficiency. This is very important as the impact of capital flows on growth can be doubled only if the REER remains constant. This raises significant challenges for the quality of governance.

As for the aid question, aid can itself be volatile, which can have major effects on economic volatility in countries dependent on aid (especially project aid). Given this risk, aid should ideally become more predictable. However, the current circumstances are unlikely to be conducive to this, as aid disbursements are determined by uncertain political factors in donor countries (e.g. around sectoral or geographical allocations) and in recipient countries (ability to absorb capital, especially in the most fragile contexts). In addition, much of the recent debate on aid effectiveness emphasises adaptive aid and the importance of flexibility to local needs, circumstances and achievements, as

opposed to predictable aid based on inflexible log frames (Booth, 2016).

That said, the finding that aid dampens the impact of economic volatility on poverty reduction suggests that aid can play a very useful role in countries vulnerable to shocks, contributing to growth and resilience building. Future research (both analytical and empirical) on this issue would be beneficial, to clarify exact pathways and mechanisms through which this could happen, or already does.

References

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Key project outputs to date

The project produced a range of papers, reports, and policy briefs, all of which are available on the project website and summarised in a final report and two briefings. Key outputs include:

- Agénor, P-R. (2016a)
- Chauvet et al. (2016)
- Combes et al. (2016)
- Neanidis (2015)

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