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Research Summaries

External Conditions and Debt Sustainability in Latin America

Gustavo Adler and Sebastian Sosa



In a context of highly favorable external conditions, especially for commodity exporters, Latin America's fiscal and external fundamentals improved markedly over the last decade. But, how dependent are these gains on a continuation of such conditions? To address this question, we

develop a framework that integrates econometric estimates of the effect of global factors on key domestic variables that determine debt dynamics, and use this framework to assess debt sustainability under less favorable external scenarios.

Over the last decade, and especially during the 2003–08 period, Latin America experienced a remarkable improvement in key macroeconomic fundamentals, reducing public and external debt ratios, accumulating foreign assets, strengthening fiscal and external current account balances, and reducing debt structure vulnerabilities. While prudent policies played an important role, much of these

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Monetary Policy Cyclicity in Emerging Markets

Donal McGettigan, Kenji Moriyama, and Chad Steinberg



Does monetary policy help smooth or amplify economic cycles? In most advanced markets monetary policy helps smooth cycles. However, for emerging markets, procyclical monetary policy has been a problem, with macroeconomic policies amplifying economic upswings and deepening downturns. This article summarizes research in this area, focusing on monetary policy. Key findings in the research include: (i) Emerging markets have adopted increasingly countercyclical monetary policy over time, although large differences remain among emerging markets and policies became more procyclical during the recent crisis, and (ii) inflation targeting and better institutions have been key factors behind the move to countercyclicity. In our research we confirm these findings using a comprehensive dataset and we also find that more countercyclical policy is associated with far less volatile output.

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gains also reflected the effect of a highly favorable external environment, characterized by strong external demand, a commodity price boom, and benign external financing conditions (for studies of the role played by external factors in Latin America's macro performance see Inter-American Development Bank, 2008; Izquierdo and others, 2008; and Osterholm and Zettelmeyer, 2008). However, with prospects of a less favorable global environment ahead, the strength of the region's fundamentals remains an open question. In particular, have countries strengthened their fiscal and external positions enough to guard themselves from a weakening of external conditions?

Our recent paper (Adler and Sosa, 2013) sheds light on this question by developing an *integrated framework for debt sustainability analysis* (DSA) that incorporates econometric estimates of the effect of exogenous external variables (such as commodity prices, world GDP growth, and global financial conditions) on key domestic variables (output growth, real exchange rate, sovereign spreads, and the trade balance) that drive public and external debt dynamics (Figure 1). This integrated DSA framework allows us to examine debt dynamics under alternative global scenarios, and consequently assess the vulnerability of current fiscal and external positions for 11 Latin American economies.

This work entails a methodological contribution to existing DSA templates, as the latter are not well equipped to assess how changes in external conditions affect debt dynamics, given their lack of linkages between global and domestic variables. Unlike traditional debt sustainability analysis (with stress tests that consider shocks to certain variables in isolation), our framework also takes into account the correlation among shocks and their joint dynamic responses (see IMF 2002, 2003, 2005, 2011, and 2012 for details on IMF's DSA framework).

The paper relates to a growing literature seeking to improve debt sustainability analysis. Most of these recent contributions (Celasun and others, 2006; Cherif and Hasanov, 2012; Favero and Giavazzi, 2007 and 2009; Kawakami and Romeu, 2011; and Tanner and Samake, 2008) have focused primarily on the joint stochastic properties of shocks, aiming at developing a probabilistic approach to DSA, including by incorporating explicit fiscal reaction functions to take into account the policy response to shocks

and the feedback effects of fiscal policy on macroeconomic variables. Like our paper, recent studies rely on a methodology that combines vector auto regressive (VAR) models with debt feedback to assess the impact of a set of macroeconomic shocks on public debt dynamics. These studies, however, do not examine the impact of specific external shocks on debt dynamics, despite the fact that these are highly relevant for emerging markets and especially for those that are highly financially integrated and/or rely heavily on commodity exports. Our study fills this gap in the literature.

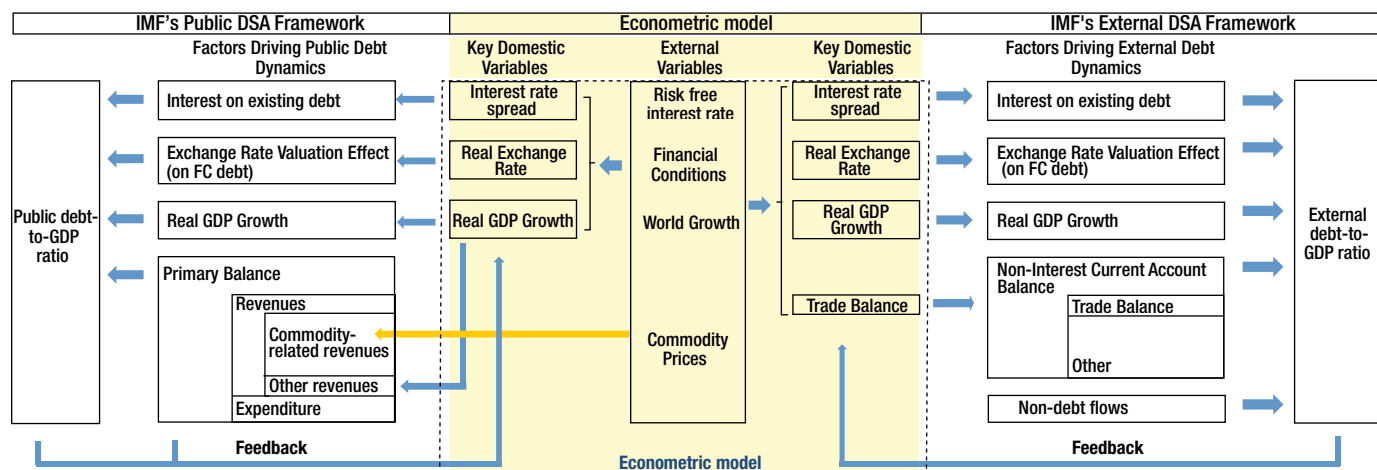
“However, with prospects of a less favorable global environment ahead, the strength of the region’s fundamentals remains an open question.”

Specifically, we derive the effect of global factors on key domestic variables from the estimation of country-specific VAR models. Each VAR includes a set of endogenous variables (real GDP growth, the trade balance, and the real exchange rate) and exogenous variables (global real GDP growth, the VIX index, key commodity prices), and is estimated using quarterly data for the period 1990–2012. A sovereign spread equation is estimated separately (due to data limitations) to capture the effect of external shocks on interest rates. These econometric estimates are then used to obtain forecasts of the domestic variables—conditional on a set of assumed global variables (scenarios)—and thus derive debt dynamics under these different scenarios.

A key feature of our framework is that primary balances and debt levels (in percent of GDP) are included in the VAR to allow feedback effects from these variables to the other domestic variables. Our approach, however, does not entail estimating a fiscal reaction function, as our objective is not to obtain debt paths under fiscal responses that mirror those of the past—which may have been constrained (or sub-optimal)—but rather under broadly unconstrained policies. In our analysis, primary balances are projected by linking fiscal revenues to commodity prices and output growth, as well as evaluating different exogenous expenditure rules.

We focus on four—two temporary and two persistent—adverse global scenarios, defined as deviations of the key global variables from the World Economic Outlook baseline:

Figure 1. Integrated Public and External Debt Sustainability Framework



- i. A temporary financial shock, with a spike of the VIX similar to the one observed following the Lehman event.
- ii. A temporary real shock, entailing lower global growth and commodity prices.
- iii. A protracted global slowdown, with lower global growth and commodity prices, and a higher level of uncertainty.
- iv. A tail event, with an impact on all global variables of magnitudes similar to those observed after the Lehman event, but somewhat more persistent.

Debt trajectories under the different scenarios are constructed by adding the estimated impact of these external shocks to the baseline projections. A key factor in the dynamics of public debt is the primary balance path, which is determined not only by the behavior of endogenous variables (output and commodity-related revenues) but also by discretionary policies. The former are derived from the conditional VAR forecasts, whereas the latter require some assumptions on fiscal policy responses. We consider two different responses: (i) neutral fiscal policy, with expenditure growing at the pace of potential GDP—thus only allowing for automatic stabilizers to operate; and (ii) countercyclical fiscal policy, with expenditure outpacing potential GDP by a margin that is proportional to the gap between actual and potential GDP growth. Exploring these alternative expenditure rules allows us to assess the extent to which, under each scenario, fiscal buffers are: appropriate to respond with fiscal stimulus, without jeopardizing debt sustainability; just enough to allow automatic stabilizers to work; or whether a fiscal tightening is necessary to ensure debt sustainability.

The results suggest that most countries in Latin America should be in a position to deploy (expansive) countercyclical fiscal responses under temporary shocks (not shown here), without raising debt sustainability concerns. On the other hand, fiscal space to deal with more persistent shocks appears to be more limited, and countries can be broadly classified into three groups (Figure 2):

- A first group of countries (Venezuela and, to a lesser extent, Argentina) that would need to strengthen their current fiscal position considerably, otherwise they may have to undertake sizable (procyclical) fiscal consolidation in the face of adverse shocks.
- A second group (Brazil, Ecuador, Mexico, and Uruguay) that could manage moderate shocks but would benefit from building additional fiscal space to be in a position to deploy countercyclical policies (and even neutral policies in some cases) under more adverse scenarios, without reaching debt and/or primary balance levels that could raise concerns about fiscal sustainability.
- A third group (Bolivia, Chile, Paraguay, Peru, and to a lesser extent Colombia) with a relatively solid fiscal position to withstand sizable external shocks—even responding with expansionary policies—without putting fiscal solvency at risk.

On the external front, even under the more severe scenarios, countries in the region (except Venezuela) appear to be in a position to maintain external debt sustainability.

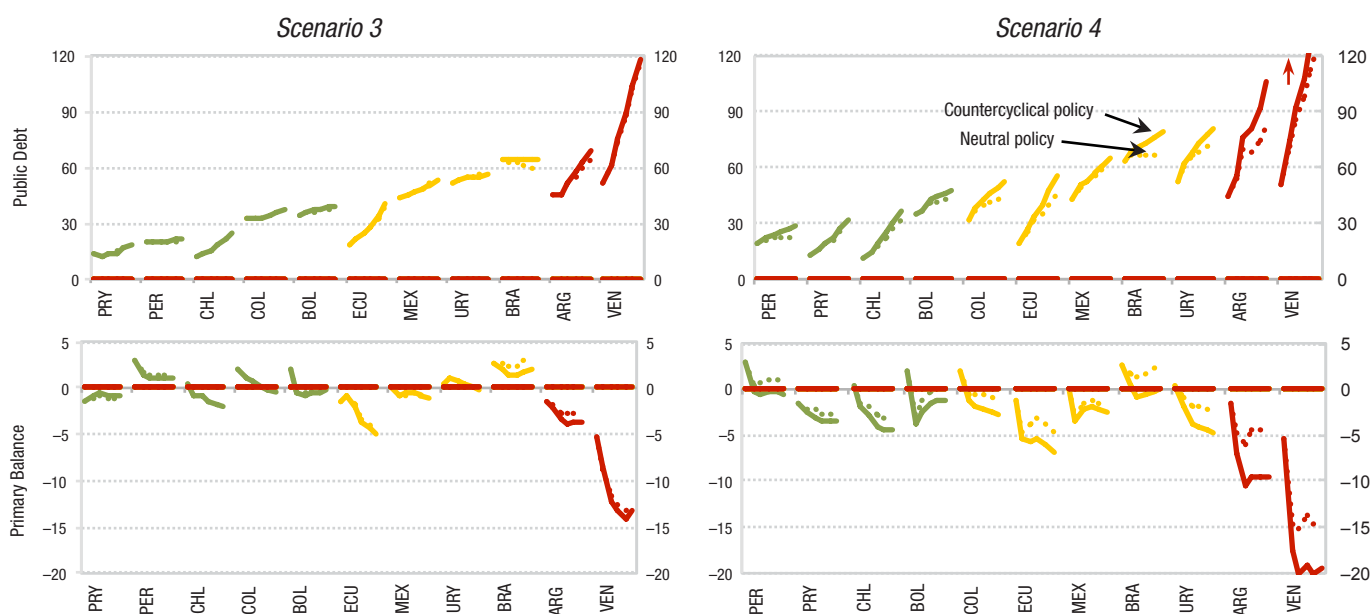
In sum, the application of our integrated DSA framework to Latin America provides valuable insights about the

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External Conditions and Debt Sustainability in Latin America

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Figure 2: Key Fiscal Indicators under Different Scenarios, 2012–2017¹
(Percent of GDP)



Source: IMF staff calculations.

¹Series indicate, from left to right, the path of public debt and primary balance from 2012 to 2017 for each country. Solid (dotted) lines denote path under counter-cyclical (neutral) policies.

region’s vulnerability to external shocks. The results indicate that, while external sustainability does not appear to be, at this point, a source of concern, fiscal space may still be limited in several countries. These countries would benefit from building further fiscal space while favorable conditions last, to be in a position to actively use fiscal policy should the external environment deteriorate markedly.

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Seven Questions on Macroprudential Policy Frameworks

Itai Agur and Sunil Sharma



Implementing macroprudential policy and dealing with the political economy is likely to be hard. But limiting policy discretion through the formulation

of macroprudential rules is complicated by the difficulties in detecting and measuring systemic risk. This Q&A article provides brief answers to seven questions about macroprudential policy in light of recent research by Itai Agur and Sunil Sharma (2013). Their findings suggest that oversight is best served by having a strong baseline regulatory regime on which a time-varying macroprudential policy can be added as conditions warrant and permit.

Question 1: What is the justification for requiring a greater macroprudential orientation for economic and financial policies?

Three types of externalities that can lead to systemic fragilities justify the need for macroprudential policies (De Nicolò, Favara, and Ratnovski, 2012): (i) interconnectedness of markets and intermediaries that can propagate shocks through the financial system; (ii) strategic complementarities that generate correlated risks among financial institutions and markets; and (iii) fire sales of financial assets that can lead to a cycle of declining asset prices and weakened balance sheets of financial intermediaries.

The objective of macroprudential policy is to limit systemic risk by finding ways to dampen the effects of business and financial cycles, to handle interconnectedness and the buildup of common exposures by institutions and market players, and to catch credit and asset bubbles in their infancy rather than having to deal with them when they are considerably distended and puncturing asset bubbles may lead to much economic and financial mayhem.

Question 2: What are the challenges inherent in measuring systemic risk?

By their very nature, systemic threats are “tail events,” they represent an agglomeration of risks from a variety of channels, and collecting data and views to make assessments

is difficult since in most situations it is likely to involve a multiplicity of sources and agencies. While systemic risk measurement has made some progress in recent years prodded on by the financial crisis, it has not yet produced a satisfactory measure, despite the variety and complexity of models and methods used (Bisias and others, 2012). The measurement of systemic risk thus continues to proceed without a comprehensive operational definition.

Systemic risk in the future may also arise in very different ways and it may not be captured by our existing intelligence systems. Moreover, one lesson from this crisis that surely carries over to future crises is the non-linearity of effects in a complex evolving economy (Haldane, 2012). Suddenly, some very fuzzy boundaries are crossed and the system spirals away from an ostensibly stable equilibrium, into the abyss. Threshold effects severely complicate efforts to quantify the risk of a systemic crisis, and make it particularly difficult for a warning system to be “early,” and not just begin to flash red when it is too late to contain the risks or the fallout from their realization.

Question 3: How do the nature of systemic risk and the difficulties associated with measuring it influence the conduct of macroprudential policy?

Consider how policymakers would use an early warning system. They have two options: either they specify in advance what measures will be taken when systemic risk is apparent, or they wait until the warning signals are flashing red and then decide on a set of actions. The latter option leaves full discretion in the hands of the regulators, and depending on institutional and political structures such discretion could open the door to resistance from the financial industry, politicians, and even the public.

The challenges associated with systemic risk measurement make it difficult to operationalize the first option: a time-varying policy that is rules based. The key to a successful rule is the ability to specify in advance the policy action that will be taken when a certain event happens, and having the credibility to implement the policy when the need arises. In the context of macroprudential regulation, the “event” is the rise of systemic risk beyond some threshold and the “action” is the

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Seven Questions

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application of macroprudential tools to reduce systemic risk to acceptable levels. Given the intrinsic problems in making systemic risk assessments and designing a suitable macroprudential toolkit, trying to define preemptive responses to a rare event using fuzzy measures to calibrate (infrequently used) tools is going to be difficult and a hard sell.

Question 4: Is macroprudential policy harder to implement than monetary policy?

When a central bank targets inflation, the “event,” inflation, is well defined, as is the “act” of raising short-term interest rates. Further, there is historical experience, data, and reasonably well-founded models that tell us how interest rates have an impact on inflation. Moreover, the inflation gauge is a simple one, which is readily available and comprehensible to the public. In the realm of macroprudential regulation, however, any single measure is bound to be inadequate. Creating a rule that links an array of measures to a set of tools will be tough, both in terms of calibration and communication with the public. This is especially true since macroprudential tools are unlikely to be changed frequently and their effect on systemic risk will have to be judged relative to a counterfactual that is based more on assertions than evidence.

In implementing macroprudential remedies, measurement problems interact with the political economy of policy formulation. If a central bank moves to raise interest rates when it finds that inflationary pressures are building up, there is little scope for a lobby to counter that inflation is not being properly measured. Industry lobbies will not see much scope for influencing policy, since it applies to everyone. Instead, when a macroprudential policy is made more stringent because some indicators show systemic or sectoral risks are building up, lobbies have scope to argue with the measurement itself. Furthermore, it is more difficult to tell only a few of the proverbial partygoers that they cannot touch a punch bowl than to take the bowl out of the room. When one sector is singled out, especially one that is highly concentrated and has the resources to wield a lot of power, resistance to targeted restrictions may be intense.

Question 5: What are the implications of assigning the mandate for macroprudential policy to the central bank?

Central bank leadership unifies systemic risk analysis and macroprudential decision making, and the central

bank does not need to coordinate public communication with other agencies. However, this “lack of involvement” of other agencies is also a drawback and raises the possibility of inter-agency conflict, because the bank and markets regulators must provide key inputs to the central bank and implement the policy response that is devised, without having a say in the decision making. This could endanger the flow of soft supervisory information, as well as the speed and extent of policy implementation, and thereby also the ability to credibly communicate macroprudential policy to the public. Directives that give the central bank overarching powers to make the bank regulator do its bidding will be difficult to define and enforce.

A joint committee where all the agencies have a say could prevent dogmatic thinking. Deliberations among officials with different backgrounds and experience should improve the design of policy. Such an arrangement should also minimize inter-agency conflicts and facilitate implementation. However, consensus on policy interventions may be harder to forge with a committee of representatives from different agencies. It may hamper the speed with which macroprudential policy can respond to fast changing circumstances, and increase the difficulty of coordinating a coherent message to the public. In addition, with multiple decision makers, a committee structure can increase the channels by which the industry may be able to exercise its influence on regulation and supervision. For example, some of the agencies on the committee may not have the requisite budgetary and political independence.

Question 6: To make it easier to plan and manage macroprudential interventions, should central banks be given the responsibility for regulating the banking system?

The answer to this question will depend on a country’s size, history, and the evolution of its political and institutional structures. The creation of a super-agency with responsibilities for micro- and macroprudential regulation, as well as monetary policy does resolve the problems of inter-agency conflict. But it creates an unwieldy institution with far-reaching powers that is outside the realm of democratic accountability. Moreover, the timing of macroprudential interventions is difficult to make because of the preemptive nature of the policy, the difficulties associated with identifying and measuring systemic risk, and likely industry resistance. Faced with these hurdles, central banks may not make the right tradeoffs in using the two policies at their disposal. For example, central banks may be tempted to delay the use

of macroprudential tools with the knowledge that liquidity provision can be used to deal with systemic disturbances. The “Greenspan Put” was one illustration: since bubbles are difficult to identify *ex ante* the central bank should not attempt to prick or defuse them, but instead provide ample liquidity if, and when, things do go wrong.

Question 7: Given the recent crisis experience, what lessons would you draw for the design of macroprudential frameworks?

Given the impediments to designing and implementing a time-varying macroprudential policy, governments should strive to build a strong baseline regulatory regime and then supplement that with a time-varying component. In this type of regulatory framework, there would be trade-offs involved in combining time-invariant (or baseline) and time-varying macroprudential policy. Implementing the time-varying component requires conservative “markers or thresholds” which when crossed force a public examination of trends in financial and real variables (Goodhart, 2011), and hence lead to appropriate responses from private and public actors that reduce the likelihood of precipitating a systemic crisis.

In this context, the institutional structure of regulation and supervision, and the incentives it embodies will be critical. Also, widening the perimeter of regulation to cover the entire financial system is essential. The devastation caused

and the costs imposed by the global financial crisis suggest that the system of oversight must be designed to prevent the emergence of systemic threats because once a system-wide meltdown starts it is hard to control due to the complexity of the system, the struggle of managing expectations under stress, and the challenges of coordinating and implementing policy through multiple agencies.

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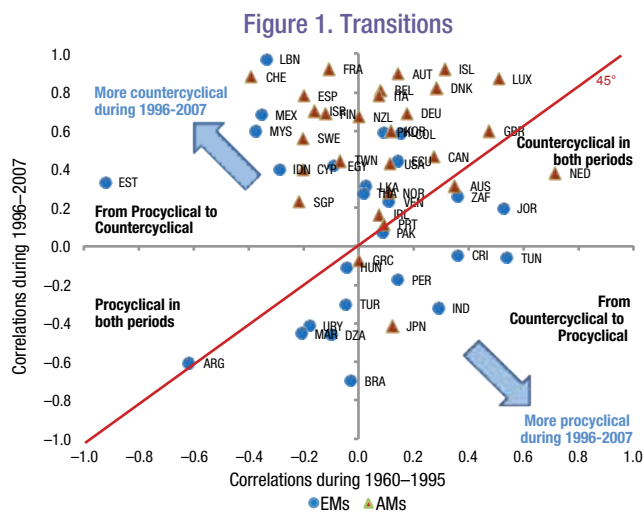
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Monetary Policy Cyclicity in Emerging Markets

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Procyclical policy has been a problem for emerging markets (EMs). This contrasts sharply with advanced markets (AMs), where policies tend to be countercyclical. Much attention has been given to the cyclical nature of fiscal policy in emerging markets. The literature provides ample evidence that fiscal policy in emerging markets has been procyclical, but with recent work finding it has become less so due to stronger institutions (Gavin and Perotti, 1997; Lane, 2003; Akitoby and others, 2004; Kaminsky, Reinhart, and Végh, 2005; Talvi and Végh, 2005; Alesina, Campante, and Tabellini, 2008; Ilzetzki and Végh, 2008; and Frankel, Végh, and Vuletin, 2012).

By contrast, the literature on monetary policy cyclicity in emerging markets is sparse. In parallel to the fiscal literature, these studies contrast the countercyclical nature of monetary policy in advanced markets with the procyclical stance of emerging markets. Kaminsky, Reinhart, and Végh (2005) present the first systematic effort to document empirically the cyclical properties of monetary policy in emerging markets using data for 104 countries from 1960 to 2003. They show a clear contrast between countercyclical monetary policy in advanced markets and a procyclical stance in emerging markets. In a more recent paper, Coulibaly (2012) concentrates on the behavior of monetary policy during crisis periods using data for 188 countries from 1970 to 2009. His results confirm that advanced markets had, during past crises, conducted countercyclical monetary policy, but that emerging markets tended to tighten monetary policy during crises. He finds, however, that emerging markets conducted more countercyclical policy during the 2008–09 period. He also finds that stronger macroeconomic fundamentals, lower vulnerabilities, greater openness, and, most importantly, financial reforms and inflation targeting, helped the move to countercyclical monetary policy among emerging markets. Likewise, Végh and Vuletin (2012) find evidence of emerging markets “graduation” on the monetary policy side. In a study covering 68 countries for the period 1960–2009, they find that more than a third of emerging markets graduated to countercyclical monetary policy in the 2000s, on top of the third that already had such policies in place. (Only 7 percent reverted to procyclical monetary policy.) They relate this move to the success, in many emerging markets, of overcoming what they term the “fear of free falling.” Where this fear is present, the policymaker raises interest rates to defend the currency in crisis times, which precludes the possibility of using monetary policy to stimulate the economy. They in turn relate the fear of



free falling to institutional quality and find a strong relationship between the two, with fear of free falling subsiding as reforms take hold. Finally, in a narrower study, Takáts (2012) looks at monetary policy from 2000 to 2011 for 14 emerging markets that have adopted inflation targeting and finds that most emerging markets were able to pursue countercyclical monetary policy during the recent decade.

Our research builds on this literature. Our comprehensive dataset covers 84 countries—35 advanced markets and 49 emerging markets—from 1960 to 2011 (McGettigan and others, 2013). Our analysis confirms that monetary policy in advanced markets is typically more countercyclical than in emerging markets, but that both advanced markets and emerging markets have become more countercyclical over the past half century. Among other methods, we use the four-quadrant “graduate” approach employed by Végh and Vuletin (2012), which shows movements in monetary policy cyclicity. From Figure 1, it is clear that emerging markets have adopted increasingly countercyclical monetary policy over time. The figure shows the cyclicity of monetary policy from 1960 to 1995 on the horizontal axis, and from 1996 to 2007 on the vertical axis. This figure divides covered countries into four “quadrant” categories (four black sub-labels). The countries in the top-right quadrant are countries that have been countercyclical over the past fifty years, and unsurprisingly, include many advanced markets. From 1960 to 1995, 68 percent of advanced markets (in red) were implementing counter-cyclical monetary policy (countries situated on the right of the figure) compared to 50 percent for emerging markets (in blue). Between 1996 and 2007, advanced markets have become almost uniformly coun-

tercyclical and more emerging markets (60 percent) were implementing counter-cyclical monetary policy (countries in the top part of the figure).

Following the advent of the global crisis, however, and in contrast to the findings of Coulibaly (2012), we find that monetary policy has become decidedly less countercyclical across both advanced markets and emerging markets according to our CoMP¹ measure (Figure 2). For advanced markets this, in part, likely reflects central banks running into the interest rate lower bound. For emerging markets, global food and commodity price shock may have played a role given their large weight in the CPI baskets of many emerging markets. Coming into the crisis, the central banks in emerging markets were concerned with second round effects from the run-up in commodity prices, meaning that a full response to headline commodity-related inflation increases was not needed. After the crisis hit, inflation fell quickly with commodity prices, but capital also started to quickly flow back to the core. As a result, there was less room for central banks in emerging markets to loosen monetary policy, and less need from a strictly inflationary viewpoint, increasing measured monetary policy procyclicality.

Robustness tests confirm our findings. Using variants of the Taylor rule, we find a strong relationship between our correlation measures and the estimated coefficients from Taylor rules (i.e., on the output gap). Moreover, our CoMP measure is very strongly correlated to the correlation between monetary aggregates (private credit) and output gaps over the sample period, implying that CoMP is a good proxy for monetary policy stance even if the stance is characterized by monetary aggregates (see Figure 3).

Past research has also attempted to explain both the differences across emerging markets and over time in the degree of monetary policy cyclicity. Coulibaly ascribes improvements in countercyclicality in emerging markets to macroeconomic fundamentals, vulnerabilities, financial sector reform, and inflation targeting (IT). Végh and Vuletin (2012) regard the lack of exchange rate flexibility, in turn related to institutional quality, as a key determinant. Our research relates monetary policy cyclicity (CoMP) to a variety of explanatory variables, including the monetary policy regime, the exchange rate regime, financial market development, and institutional strength.

Figure 2. CoMP over Time

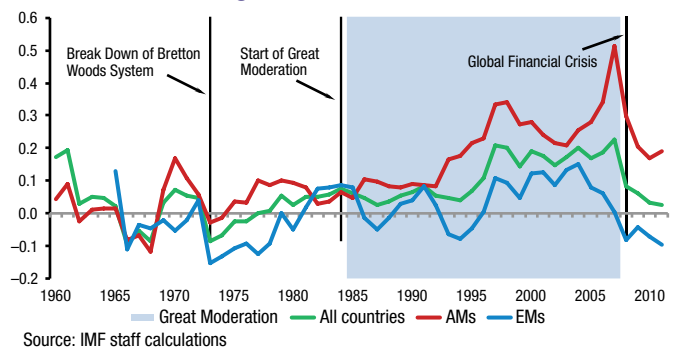
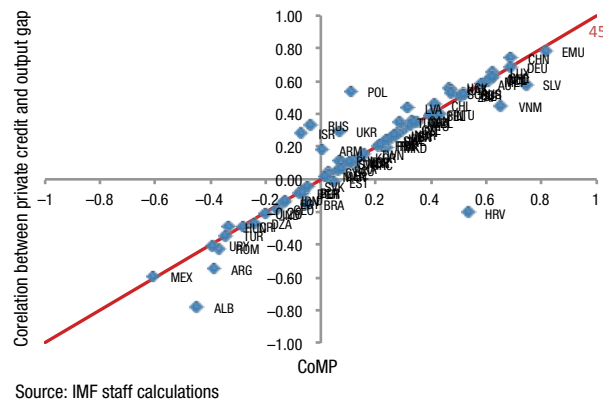


Figure 3. Comparison of Our CoMP Measures and Correlation Between Private Credit and Output Gap 1960–2009



We find that IT and institutions are significant and robust drivers of monetary policy countercyclicality. Specifically, we find that countries that have implemented IT regimes and/or have improved their institutions tend to have more countercyclical monetary policy. These results withstand a multitude of specification and robustness checks.

The results are also economically significant, carrying policy implications. Implementation of IT is found to improve the correlation between real interest rates and output by nearly 0.6–0.7. That is a surprising 1.3–1.5 standard deviation improvement. Therefore, the adoption of IT, and all that this typically involves, should help substantially improve effectiveness of monetary policy in stabilizing the economy. Similarly, a one-standard deviation improvement in institutional quality is associated with a quarter standard deviation improvement in monetary policy countercyclicality. Although these results are based on within regression results, the cross-section is equally convincing.

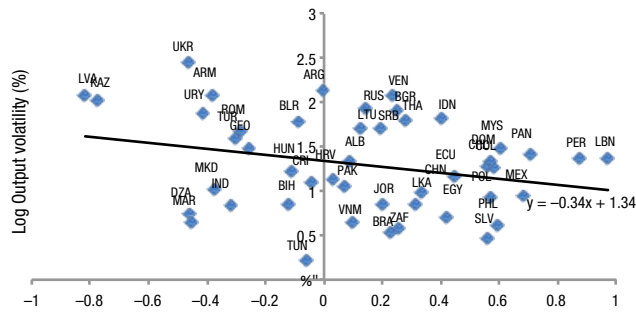
¹ Cyclicity of Monetary Policy (CoMP) is derived as the 10-year window of rolling correlations between the real interest rate (nominal interest rate minus actual inflation) and the output gap.

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Monetary Policy Cyclical in Emerging Markets

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Figure 4. Log Output Volatility for EMs, 1996–2007



Source: IMF staff calculations

Only with deep financial systems can emerging markets with flexible exchange rate regimes eliminate procyclicality. This could be linked to “fear of floating” in less financially developed emerging markets and improved monetary transmission mechanisms in emerging markets with more developed financial sectors.

The results were surprisingly weak for many remaining explanatory variables analyzed. The bilateral estimation for exchange rate regime and financial deepening are both statistically insignificant when considered individually. Variables that are not shown, but were also found to be insignificant under various specifications, include private credit, capital account openness, terms of trade shocks, the fiscal deficit, public debt, and GDP growth volatility.

Scatter plots confirm that more countercyclical monetary policy is associated with lower levels of output volatility (Figure 4). We also investigate the impact on inflation volatility but results are inconclusive despite a tendency for both output variability and inflation variability to be highly correlated. Regression analysis substantiates that this result is robust to controls for external volatility. These findings are also consistent with previous work on emerging markets. Lane (2003), for example, shows that procyclical macroeconomic policies in emerging markets have been associated with more extreme cyclical fluctuations in output.

In conclusion, recent research, including at the IMF, confirms that emerging markets have adopted increasingly countercyclical monetary policy over time, driven by inflation targeting and better institutions. This countercyclical policy is associated with less volatile output, suggesting large economic benefits.

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The conference program will feature an outstanding group of speakers. Paul Krugman (Princeton University) will deliver the Mundell-Fleming Lecture. The program will include papers by Viral V. Acharya and Bruce Tuckman; Roberto Alvarez and José De Gregorio; Ariel Burstein and Iván Werning; Anusha Chari and Peter Blair Henry; William English, David López-Salido, and Robert Tetlow; Emmanuel Farhi and Iván Werning; Kristin Forbes and Michael Klein; Atish R. Ghosh, Jonathan D. Ostry, and Mahvash S. Qureshi; Takeo Hoshi and Anil Kashyap; Kenneth N. Kuttner and Adam S. Posen; Maurice Obstfeld; David Reifschneider, William L. Wascher, and David W. Wilcox; and Carlos A. Végh and Guillermo J. Vuletin. The list of discussants will include Ricardo Caballero, Guy Debelle, Martin Feldstein, Jeffrey Frankel, Ilan Goldfajn, Gregory Mankiw, Frederic Mishkin, Carmen Reinhart, Christina Romer, David Romer, and Jeffrey Sachs. The policy panel at the conference will feature Ben Bernanke, Olivier Blanchard, Stanley Fischer, and Kenneth Rogoff.

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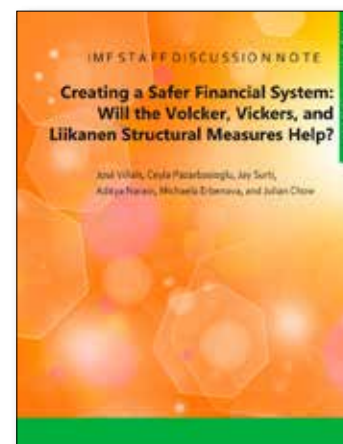
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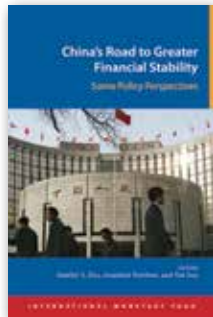
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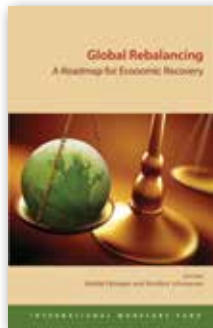
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