IMF RESEARCH BULLETIN

Volume 14, Number 3 September 2013

www.imf.org/researchbulletin

In This Issue

1 External Conditions and Debt Sustainability in Latin America

1 Monetary Policy Cyclicality in Emerging Markets

5 Q&A: Seven Questions on Macroprudential Policy Frameworks

11 IMF Working Papers

14 Fourteenth Jacques Polak Annual Research Conference

15 New Impact Factor for *IMF Economic Review*

15 Staff Discussion Notes

16 Recommended Readings from the IMF Bookstore

Online Subscriptions

The *IMF Research Bulletin* is available exclusively online. To receive a free e-mail notification when quarterly issues are posted, please subscribe at *www.imf.org/external/cntpst*. Readers may also access the *Bulletin* at any time at *www.imf.org/researchbulletin.*

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

(continued on page 2)

Monetary Policy Cyclicality 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 countercyclicality. 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.

(continued on page 8)

©International Monetary Fund. Not for Redistribution

External Conditions and Debt Sustainability in Latin America

(continued from page 1)

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."

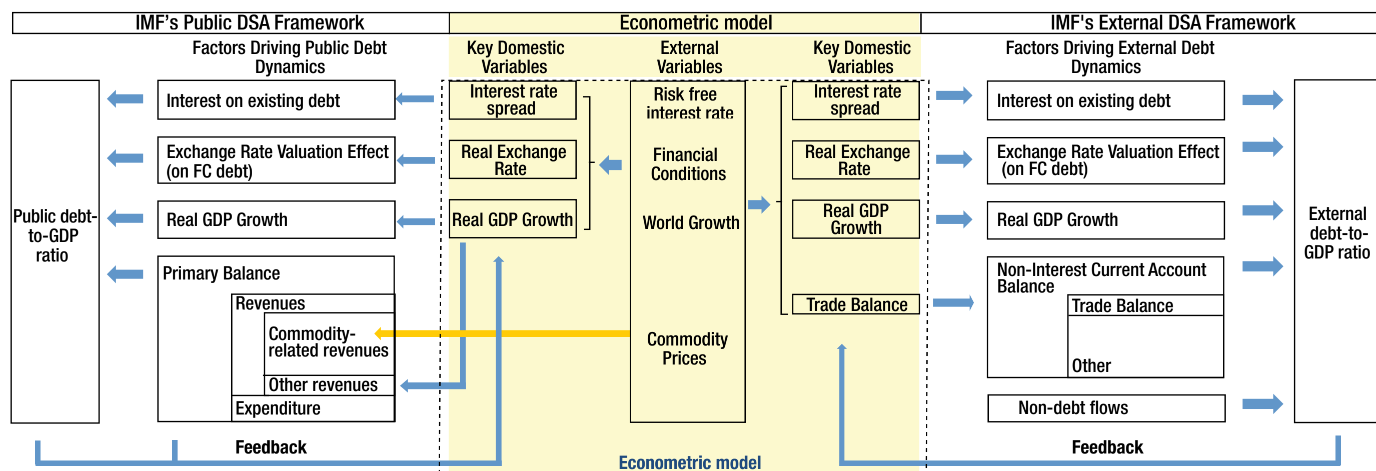
Specifically, we derive the effect of global factors on key domestic variables from the estimation of country-specific VAR models. Each VAR includes a set of endogenous variables (real GDP growth, the trade balance, and the real exchange rate) and exogenous variables (global real GDP growth, the VIX 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:

©International Monetary Fund. Not for Redistribution

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 (expansionary) 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

(continued on page 4)

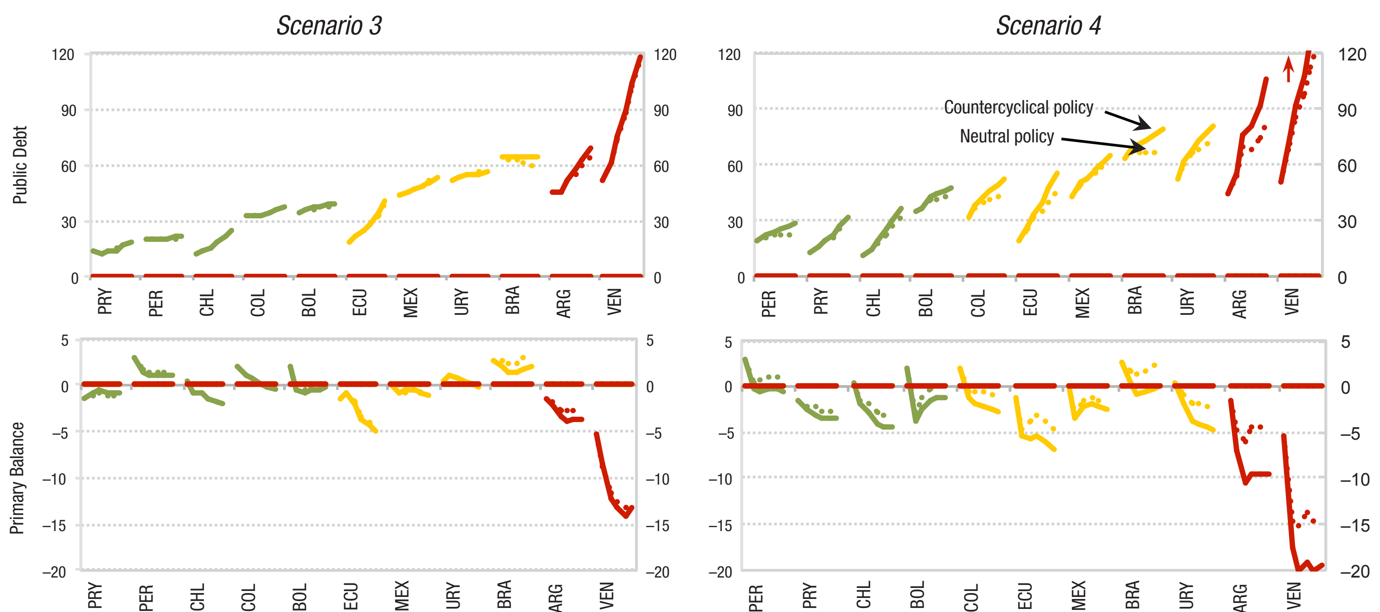
©International Monetary Fund. Not for Redistribution

External Conditions and Debt Sustainability in Latin America

(continued from page 3)

Figure 2: Key Fiscal Indicators under Different Scenarios, 2012–2017[1]

(Percent of GDP)



Source: IMF staff calculations.

[1]Series 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 countercyclical (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.

References

Adler, G., and S. Sosa, 2013, "External Conditions and Debt Sustainability in Latin America," IMF Working Paper 13/27 (Washington: International Monetary Fund).

Celasun, O., X. Debrun, and J.D. Ostry, 2006, "Primary Surplus Behavior and Risks to Fiscal Sustainability in Emerging Market Countries: A 'Fan-Chart' Approach," IMF Working Paper 06/67 (Washington: International Monetary Fund).

Cherif, R., and F. Hasanov, 2012, "Public Debt Dynamics: The Effects of Austerity, Inflation, and Growth Shocks," IMF Working Paper 12/230 (Washington: International Monetary Fund).

Favero, C., and F. Giavazzi, 2007, "Debt and the Effects of Fiscal Policy," NBER Working Paper No. 12822 (Cambridge, Massachusetts: National Bureau of Economic Research).

————, 2009, "How Large Are the Effects of Tax Changes?," NBER Working Papers No. 15303 (Cambridge, Massachusetts: National Bureau of Economic Research).

Inter-American Development Bank, 2008, "All That Glitters May Not Be Gold: Assessing Latin America's Recent Macroeconomic Performance," Annual Report.

International Monetary Fund, 2002, Assessing Sustainability (Washington: International Monetary Fund). Available at: www.imf.org/external/np/pdr/sus/2002/eng/052802.pdf

————, 2003, *Sustainability Assessments-Review of Application and Methodological Refinements* (Washington: International Monetary Fund). Available at: www.imf.org/external/np/pdr/sustain/2003/061003.pdf

(continued on page 7)

©International Monetary Fund. Not for Redistribution