

# I Introduction

**M**ember countries are routinely faced with a range of shocks that can contribute to higher volatility in aggregate output and, in extreme cases, to economic crises. The presence of such risks underlies a potential demand for mechanisms to soften the blow from adverse economic shocks. Such a protective infrastructure—which may, of course, have ancillary benefits that are not related to offering protection against the impact of adverse shocks—will be referred to in this paper as “country insurance.” Protective measures that countries can take themselves (“self-insurance”) include sound economic policies, robust financial structures, and adequate reserve coverage. Beyond self-insurance, countries have also established regional arrangements that pool risks while, at the multilateral level, the IMF has a central role in making its resources temporarily available to ease the costs of economic adjustment when shocks create balance of payments difficulties for a member country. In addition, the IMF, through the policy advice it provides under surveillance, has a key role in helping countries improve their own crisis-proofing armor.

This paper analyzes a number of mechanisms through which countries can self-insure, with particular focus on national balance sheets—including the roles of countries’ external liability structures and self-insurance through reserves accumulation. As foreshadowed in the IMF Managing Director’s medium-term strategy (see IMF, 2005a), separate staff papers are expected to address collective insurance arrangements—regional reserve pooling arrangements, and global arrangements using a possible new lending instrument to provide high-access contingent financing for countries that have strong macroeconomic policies, sustainable debt, and transparent reporting, but nevertheless remain vulnerable to shocks.<sup>1</sup>

The nature of the shocks that countries face—and for which they may seek insurance—is worthy of examina-

tion in its own right, because having a clear notion of which shocks are relatively frequent and costly—and for which members—is an essential step toward tailoring insurance solutions appropriately. For example, if terms of trade shocks or natural disasters are important for one group of countries, but sudden stops in financial flows are important for another, then appropriate insurance arrangements for them may well differ. Information on the structure of shocks (and their costs) for different countries is key in both tailoring policy advice on country insurance matters and drawing on regional or multilateral facilities to meet the diverse needs of member countries. Likewise, decisions about the appropriate or warranted level of official reserves for a country are likely to depend on the probability of facing different disturbances and the consequences of such shocks.

Against this background, our paper begins with an analysis of the frequency and economic costs of the most important shocks faced by different groups of member countries (mainly emerging market and developing countries). Output drops are found to be associated primarily with real shocks (notably terms of trade declines) in developing countries, while financial shocks (such as sudden stops) appear to play a lead role in emerging market countries. Although wars and episodes of political turmoil are relatively infrequent over the entire sample, they are extremely costly, particularly for developing countries, when they do occur.

Following the analysis of shocks, the paper considers some of the actions that member countries can take to self-insure. The major and long-lasting damage inflicted by currency, debt, and banking crises reemphasizes the role of sound macroeconomic policies and supporting institutions as a first line of defense. Beyond this, evidence outlined in the paper shows that sound policies may facilitate the issuance of long-term, domestic currency debt, with commensurately lower rollover and foreign exchange risk, and that longer-run reforms aimed at improving broad institutional quality may also foster increases in the share of equity-like liabilities (such as foreign direct investment (FDI)) in countries’ external liability structures, thereby strengthening links between external payments and countries’ ability to pay.

<sup>1</sup>See IMF (2004, 2005a, and 2006 and, relatedly, a variety of other external and internal proposals on the Fund’s possible role in providing country insurance, including Calomiris (1998), Cordella and Levy-Yeyati (2005), Council on Foreign Relations Task Force (1999), Krueger (2006), Meltzer (2005), Ostry and Zettelmeyer (2005), and Rajan (2006).

Underutilized private sector arrangements or financial instruments may also have a role to play in providing country insurance. Relevant examples include catastrophe bonds and insurance against natural disasters for smaller, disaster-prone countries; commodity price futures or other instruments aimed at hedging against commodity price fluctuations for countries with heavily concentrated production structures; and GDP growth-indexed bonds for a broader segment of the IMF membership. As with many types of financial innovation, issuance of new types of instruments would have a greater chance of success when undertaken by larger economies, which are more likely to provide the necessary critical mass for a deep and liquid secondary market, and by countries with transparent institutions and statistics—these are especially relevant to overcoming measurement challenges posed by growth-indexed bonds.

On the asset side, the main form of self-insurance is, of course, reserve holdings—a flexible and reliable form of insurance against a wide variety of shocks. Relatively high stocks of reserves are especially desirable for emerging market countries that are exposed to sudden stops in financial flows and, more generally, for countries facing large shocks that cannot be hedged using alternative instruments. In determining a desired level of reserves, countries need to trade off the financial costs of holding reserves against the consumption-smoothing benefits of having a ready stock of reserve assets. To help guide judgments about the desirable level of self-insurance through

reserves, this paper develops an analytical framework that takes into account the costs of reserve holdings, their consumption-smoothing benefits, and the role of country fundamentals in determining the likelihood of crisis.

The framework yields a number of insights about the degree to which reserve accumulation in different regions is warranted by the fundamentals captured by the model. For example, although reserve buildups observed in Asian emerging markets since the early 1990s are assessed to have been initially commensurate with these countries' insurance needs, they appear more recently to have exceeded what could be justified on the basis of plausible changes in fundamentals. Further, although Latin American emerging markets seem to have been underinsured in the early 1990s, their reserves are now assessed as providing a broadly appropriate degree of self-insurance, given the fundamentals faced by these countries.

The remainder of this paper is organized as follows. Section II examines the nature and economic costs of various types of shock across different segments of the IMF's membership. Section III analyzes the roles of sound fundamentals and liability structures, especially in relation to the external capital structures of countries and their public debt management. Section IV turns to the asset side of countries' balance sheets and develops an analytical framework to help guide judgments about the desirable level of self-insurance to be obtained through accumulation of official reserves. Section V summarizes and concludes.