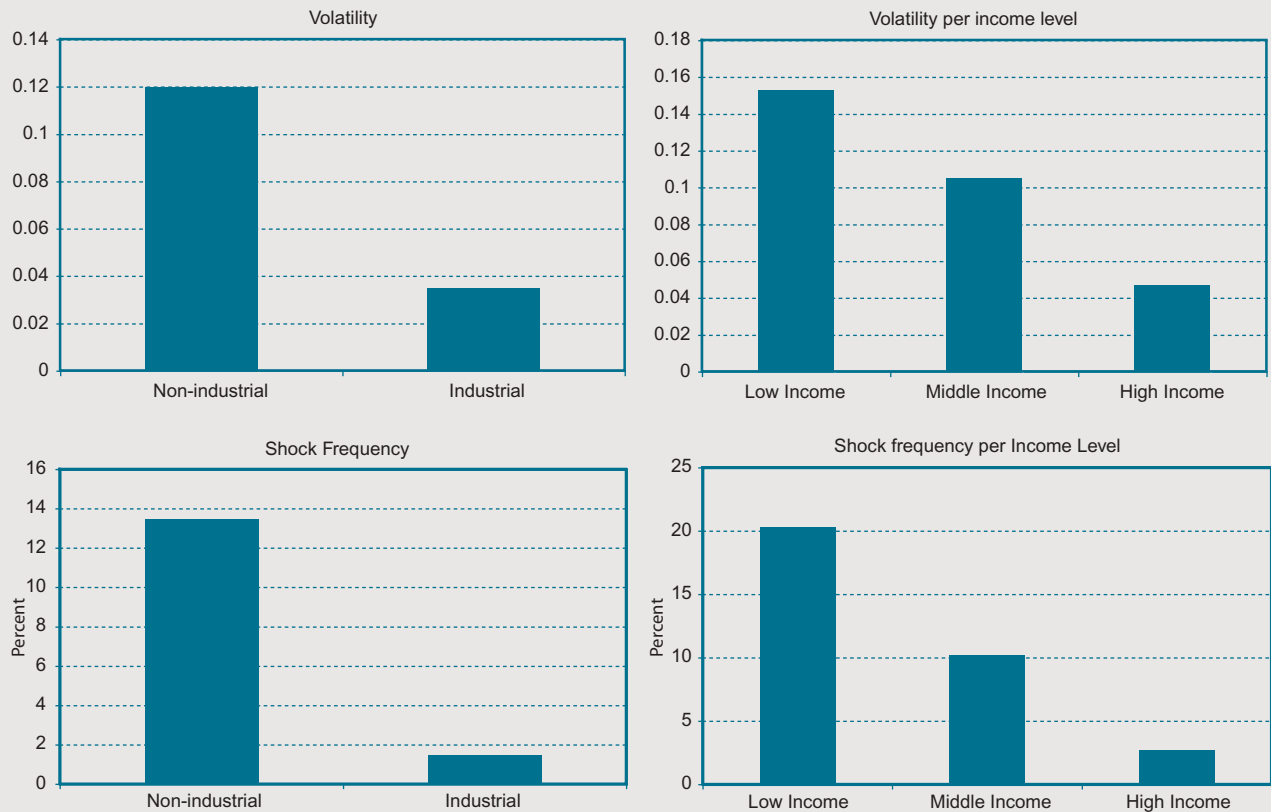




Figure 1. Terms of trade volatility and shock frequency, 1975–2005



Source: Calderón and Yeyati, "Zooming In: From Aggregate Volatility to Income Distribution" (Universidad Torcuato Di Tella, 2007).

### Sources of high volatility are mostly exogenous

Developing countries, including the poorest among them, are more volatile and prone to crises than the developed world first and foremost because they are more exposed to exogenous shocks: terms of trade, external demand, natural disasters, and sudden changes in global risk appetite. In addition, capital flows to developing countries have been highly pro-cyclical and thus have amplified the effects of exogenous shocks. On occasion, exogenous capital flows shocks have been themselves the primary source of volatility.

Of course, not all crises had external sources. Unsustainable fiscal and monetary policies were not infrequently a primary source of macroeconomic volatility and vulnerability to crises in the past, and even today pro-cyclical fiscal policies amplify the effects of exogenous shocks. Underdeveloped

domestic capital markets lead to generalized currency mismatches that also amplify the negative effects of adverse exogenous shocks.

We have seen a marked shift in the sources of instability in recent years as macroeconomic policies have improved across a range of developing countries and as policymakers in some countries focused on building domestic capital markets and reducing foreign currency-denominated debt. But as domestic weaknesses are being addressed, external risks have intensified, especially for low-income countries and small economies. Commodity price volatility has reappeared with a vengeance. The financial crisis in the United States and Europe raises the specter of a prolonged reduction in global growth and in global investors' appetite for risk. And the incidence of natural disasters has increased, likely related to climate change, in parts of the world where some of the poorest countries are located.

Moreover, progress in reducing domestic vulnerabilities has been uneven across countries. For many low-income countries, small size, institutional weaknesses, limited domestic savings, and limited foreign interest have constrained the development of domestic capital markets. Even in those countries where aggregate liquidity and currency risks have been sharply reduced (thanks to the accumulation of international reserves and the development of domestic currency bond markets), many private and public firms, most notably in infrastructure services, remain exposed to such risks.

### The right tools for the job: the role of insurance and hedging

Reducing exposure to exogenous shocks to developed-country levels through preventive action requires transformative changes that take considerable time. This is the case, for example, with export and production diversification, which normally increase slowly over time as the development process takes place. It is the case as well with improvements in zoning and building codes and their enforcement, which can reduce the expected cost of natural disasters. And it is also often the case with the development of long-term, cost-efficient capital markets in domestic currencies, which are

necessary to achieve a significant reduction in currency and maturity mismatches in the balance sheets of most economic agents. In the meantime, many governments, firms, and individuals in developing countries remain highly exposed and vulnerable to these exogenous shocks.

Financial insurance and hedging can significantly help mitigate the effects of these vulnerabilities. Indeed, as Perry describes, theory suggests that even when institutions and policies achieve high quality there will be an optimal mix of risk reduction (prevention) policies, self insurance, and market insurance and hedging to deal with risks arising from exogenous shocks. More specifically, the optimal response to high-cost and low-probability events should be market insurance and hedging rather than self-insurance (which carries a high financial cost to protect against rare but potentially costly events) or prevention policies (which can be a very expensive way to cover the upper tails of the probability distribution of exogenous shocks). In fact, developed-country governments and firms make much more use of market insurance and hedging instruments than their counterparts in developing countries despite the fact that they are usually less exposed to exogenous shocks. There are complementarities, of course, between prevention and insurance actions: properly designed insurance eligibility condi-

Table 1. Dealing with high volatility: an insurance framework

Action/Shock	Coping after the fact	Prevention	Self-Insurance	Market Insurance/ Hedging
Terms of Trade	Current Account and (pro cyclical) fiscal adjustment Aid	Diversify Exports	Stabilization Funds	Commodity Prices Futures, Forwards and Options Indexed Debt (TOT, CP)
Natural Disasters	Aid. Fiscal adjustment	Zoning and Building codes	Emergency Funds	Insurance & Reinsurance CAT's
Capital Flows	Current Account and (pro cyclical) fiscal adjustment Aid	Debt level & composition. Capital Market Development. Dedollarization	International Reserves	Contingent Credit Lines Currency and Interest Forwards, Swaps and Options Indexed Debt (GDP) External debt in domestic currencies

tions and fees promote prevention while sound prevention policies (and good policies and institutions in general) tend to increase access to insurance and hedging instruments.

### What the MDBs can do: a market-making role

In practice, we find low participation of foreign investors in most developing-country domestic currency markets, limited use by developing countries of derivative markets, an almost insignificant penetration of catastrophic insurance and use of catastrophic (CAT) bond markets in developing countries, and a generalized lack of development of markets for indexed debt (in particular, debt indexed to GDP or terms of trade) that could potentially be very attractive for both issuers and investors. In all these cases we can identify institutional and policy problems in developing countries, including political economy issues and lack of technical capabilities, that help explain those limited developments.

But we can also observe significant market failures derived from high first-mover costs and risks and coordination problems. First issuers confront considerable uncertainty that makes it hard to determine how to price new products and have to incur higher costs than later issuers, who reap the benefits of market-development costs borne by others. It is also hard for first issuers to act in concert to boost the depth and liquidity of markets for new financial products. And coordination problems prevent investors from achieving the full potential of risk diversification through global pools.

As broad regional or global public institutions, MDBs are well-placed to play a central role as market developers. They can assume part of first-mover market-development costs and help overcome initial liquidity challenges. They can use their convening and risk-pooling power to help develop regional and global markets for developing countries' domestic currencies and debt indexed to terms of trade or GDP and to spread access to affordable catastrophic insurance coverage. At the same time, they can help governments improve their institutional and policy environments, strengthen their technical capabilities, and overcome inhibiting political economy problems that are at present limiting the use and penetration of existing and new products in developing countries. That is, MDBs can help solve both demand and supply market limitations.

## Seven Recommendations for Action

MDBs deserve credit for taking important steps forward in this sphere. As Perry notes, the World Bank has launched a local currency bond fund (GEMLOC) to help develop domestic capital markets. Initiatives like the International Finance Corporation's MATCH program and the Currency Exchange Fund (TCX), in which the Inter-American Development Bank and several other regional development banks are participating, are helping some developing countries manage currency risk. The World Bank has promoted several initiatives to help governments insure against immediate cash requirements following the occurrence of natural disasters, such as the Catastrophic Reinsurance Facility for the Caribbean. And all the MDBs have encouraged countries to create safety net programs for all households vulnerable to commodity price and other shocks.

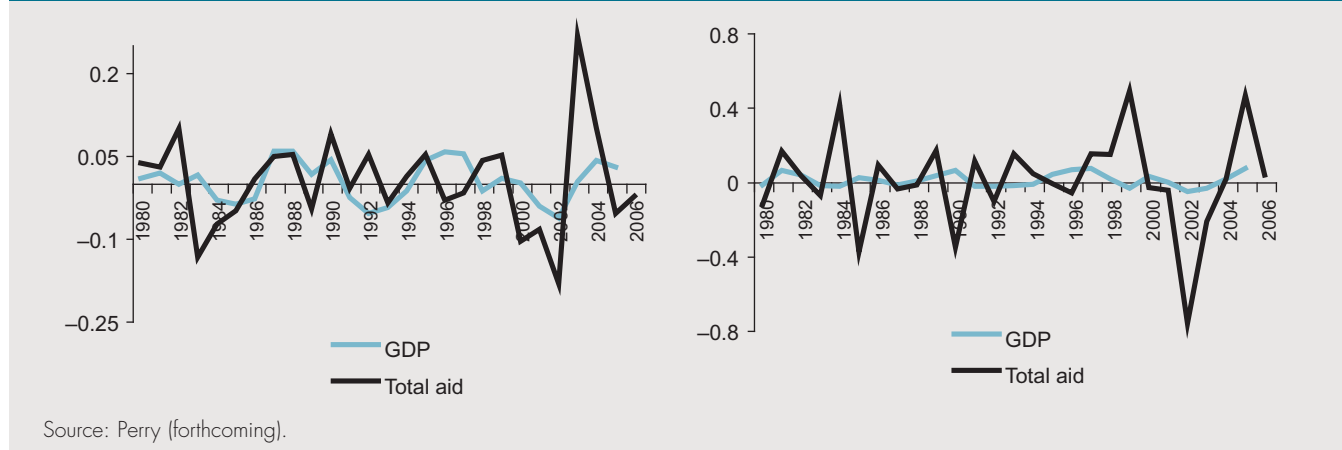
But these efforts are generally too small, too concentrated on the least risky countries and firms, and have reached too few households. Given the clear and present dangers, the MDBs would do well to go much further. Here are seven suggestions for near-term priorities, organized as responses to three major sources of risk: pro-cyclical private capital flows, terms of trade shocks, and natural disasters.

**Pro-cyclical private capital flows and weak local capital markets.** Perry's data revealing that MDB flows share the pro-cyclicality of private flows raise fundamental questions about the purpose of traditional MDB lending and its contribution to risk management, especially in light of robust MDB risk-bearing capacity.

The global appetite for risk is clearly faltering, and some developing countries are experiencing a sudden reversal of private capital flows. Output and commodity price volatility is worsening fiscal situations and debt-service burdens, especially in low-income countries (LICs). And some LICs confront tightly constrained fiscal resources for dealing with increases in food and energy prices.

A reasonable way to increase counter-cyclicality in MDB flows is to develop workable contingent lending facilities for countries that actually need them. Much of the focus in the design of contingent credit lines has been on middle-income countries with strong creditworthiness, access to private

Figure 2. Cyclical component of GDP and total aid



markets, and manageable macroeconomic imbalances. Such countries' interest in borrowing from MDBs for budgetary purposes has understandably diminished. The fiscal situations and poor populations of many LICs, on the other hand, are highly vulnerable to large commodity price changes and output volatility. Well-designed contingent lending facilities could create the right incentives to avoid excessive debt accumulation in good times and to create effective targeted social safety nets for the poor in bad times that the credit lines could help finance.

- *Develop a debt service insurance facility for LICs.* The MDBs and/or the IMF should work together to develop a facility or facilities that provide temporary financing to low-income countries to relieve debt service burdens in the case of shocks beyond their control. Such an insurance approach would help LICs with good growth prospects to borrow reasonable amounts on reasonable terms, while minimizing the risk of a new round of debt relief in the future due not to their own poor risk management but bad luck.<sup>1</sup> (Middle-income countries can make use of the World Bank's improved Deferred Drawdown Option, which provides rapid financing with limited conditionality in the event of catastrophes or other shocks, but this program is not available for LICs.)

The amplitude of capital flow swings has often demanded sharp corrections of real exchange rates in developing countries, which have compounded the effects of exogenous shocks due to wide open-currency mismatches in the balance sheets of governments and firms in the non-tradable sectors. Sound development of long-term domestic currency capital markets would contribute enormously to reducing currency risks and the negative effects of capital flow reversals.

- *Create global or regional funds for investing in the domestic bonds of "frontier" countries and firms.* Through GEMLOC, the World Bank is developing a bond fund aimed at catalyzing demand for local currency bonds. Yet GEMLOC continues the excessively conservative approach that has limited the effectiveness of the MDBs. GEMLOC will focus initially on the same limited set of developing countries already of interest to the private sector. Moreover, it does not target debt issues by the forgotten middle in developing country private sectors—second-tier firms too small for most traditional investors in corporate bonds but too big for microfinance. Instead, the MDBs should use the power of global and broad regional risk diversification, their in-depth country expertise and presence, and the strength of their balance sheets to create financing pools that go beyond GEMLOC by targeting frontier countries and second-tier firms.

1. See Nancy Birdsall, "Building on International Debt Relief Initiatives," Testimony before the Senate Foreign Relations Committee, April 24, 2008, <http://www.cgdev.org/content/opinion/detail/15880/>. See also Nancy Birdsall and Brian Deese, "Delivering on Debt Relief," CGD Brief (Washington, D.C.: Center for Global Development, 2002), <http://www.cgdev.org/content/publications/detail/2862>.

Table 2. MDBs' Risk-Bearing Capacities

	IBRD	IFC	IADB	ADB	EBRD	AfDB	IIC	CAF	EIB
<b>Narrow risk-bearing capacity/DRE</b>									
2001	28	83	31	35	56	53	86	35	13
2002	33	77	32	39	58	62	95	35	13
2003	33	77	33	46	64	67	102	37	13
2004	37	85	37	50	64	78	106	40	13
2005	35	85	38	48	79	82	103	44	12
2006	40	86	42	45	89	85	91	44	12
<b>Broad risk-bearing capacity/DRE</b>									
2001	82	83	108	74	136	116	86	35	45
2002	97	77	112	86	14	143	95	35	44
2003	102	77	110	118	148	153	102	40	58
2004	112	85	119	128	150	172	106	42	63
2005	111	85	123	122	154	178	103	47	58
2006	120	86	130	116	156	186	91	47	56

Note: DRE= Development Related Operations (Loans, Guarantees, Equity, Derivatives); ISDB= Islamic Development Bank; IIC= Inter-American development Corporation; CAF= Andean development corporation; EIB= European Investment Bank; NIB= Nordick Investment Bank  
 Source: Standard & Poor's, "Supranationals Special Edition 2007."

■ *Jumpstart markets for GDP-linked debt instruments.* Perry's analysis demonstrates the power of GDP-linked debt for avoiding debt crises by reducing debt service in bad times—perfectly indexed debt would have gone a long way toward averting the Latin American debt crises of the 1980s and late 1990s. The first-issuer problem is particularly acute here as previous issuers have generally been countries in the process of restructuring defaulted debt. MDBs could coordinate the simultaneous issue of GDP-linked debt by a critical mass of developing countries to afford investors the benefit of a diversified portfolio. And they could help relieve concerns about GDP data manipulation by certifying the statistical practices of participating governments.

**Terms of trade shocks.** Poor countries, particularly those that import food and energy, do not have a lot of options at the moment for helping those at real risk, including the near-poor. The World Bank has estimated that soaring food prices could drive a 100 million people around the globe back into poverty. Many countries in this situation have made real gains in recent years in reducing macroeconomic imbalances, inflation, and external (foreign currency denominated) debt. They need policy and local financing options that do not reverse these gains. They also need alternatives to temptingly simple but bad options like food price controls, food export controls, and untargeted food price subsidies that waste scarce resources.<sup>2</sup>

2. Nora Lustig, "Thought for Food: the Challenges of Coping with Soaring Food Prices," CGD Working Paper 155 (Washington, D.C.: Center for Global Development).

- *Protect the basic food purchasing power of the near-poor.* Means tested income supplements calibrated to key food price rises provide a means to protect basic consumption while avoiding budget-busting subsidies and price distortions that discourage increased supply. Traditionally the MDBs have focused on safety nets for the poor, often defined as those with incomes of \$1–2 per day. New income-support programs like conditional cash transfers provide possible vehicles for delivering supplements to this group. But what about the near-poor—the large populations in developing countries vulnerable to losing their jobs in a downturn and to steeply rising prices on goods and services that account for much of their consumption? The MDBs could provide important assistance to developing countries by helping them design and, if needed, finance income-supplement delivery systems to the millions of low-income households in developing countries that are at risk of falling back into poverty.

Indexing debt instruments to terms of trade would reduce the pro-cyclicality of fiscal policies and enhance developing countries' capacities to serve their debts and improve their creditworthiness.

- *Launch markets for TOT-linked debt instruments.* Bonds linked to terms of trade would reduce debt service when commodity prices turn against countries vulnerable on either the commodity export or commodity import side. Their advantage over GDP-linked bonds is that up-to-date commodity price data are readily available from neutral third-party sources. Their disadvantage is that they are not as widely useful as GDP-linked bonds: for many countries, variations in commodity prices are not necessarily good predictors of growth performance and debt service capacity.

**Natural disasters.** As climate change increases the risks of destructive storms and floods that devastate largely poor tropical regions, developing countries need to add affordable insurance to the risk management toolkit. Here too, global pooling of risk is key for reducing insurance costs. High and volatile catastrophic reinsurance fees stem in part from low risk diversification by reinsurance companies: high-cost,

low-probability events concentrated in their relatively limited regions of operation wipe out their capital.

- *Create Global Catastrophic Reinsurance Funds that serve firms and households in developing countries as well as governments.* In this case, the World Bank already has a successful model for diversifying risk in the Caribbean region, where it has reduced premiums by almost 70 percent for insuring government cash needs after the occurrence of a natural disaster. As a matter of priority and urgency, this model should be globalized or replicated in other regions. So should the initiative of issuing a Global CAT Bond that would serve essentially the same purpose. Moreover, MDB's should at the same time move towards a much more ambitious goal: to establish a Global Reinsurance Facility that would permit a significant increase in catastrophic insurance penetration among firms and households throughout developing countries.

### Finally, a note on technical assistance.

Financial tools are only part of the solution. It is clear that developing-country demand for risk management tools is significantly constrained by a shortage of skills for cost/benefit analysis of such tools and for managing their use. And there are very real constraints on the supply side. The technical investment needed in bond and insurance market infrastructure, including the tax and regulatory environment, is substantial.

- *Dramatically expand technical assistance supporting the availability and use of risk management tools.* MDBs can generate the grant financing needed to make this happen through a partial shift toward the endowment model. They can make their sizable capital bases more productive by taking on reasonable levels of risk and increasing returns. The fundamental challenge in this and in other areas will be to transform lending activities into smaller, more catalytic operations targeted at the right countries and firms, while at the same time dramatically expanding the provision of the two public goods we have emphasized: making markets and providing country-specific technical help reflecting regional and worldwide experience.

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# CGD Brief

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The Case for MDB Help with Risk Management**

Nancy Lee, Guillermo Perry, and Nancy Birdsall

October 2008

