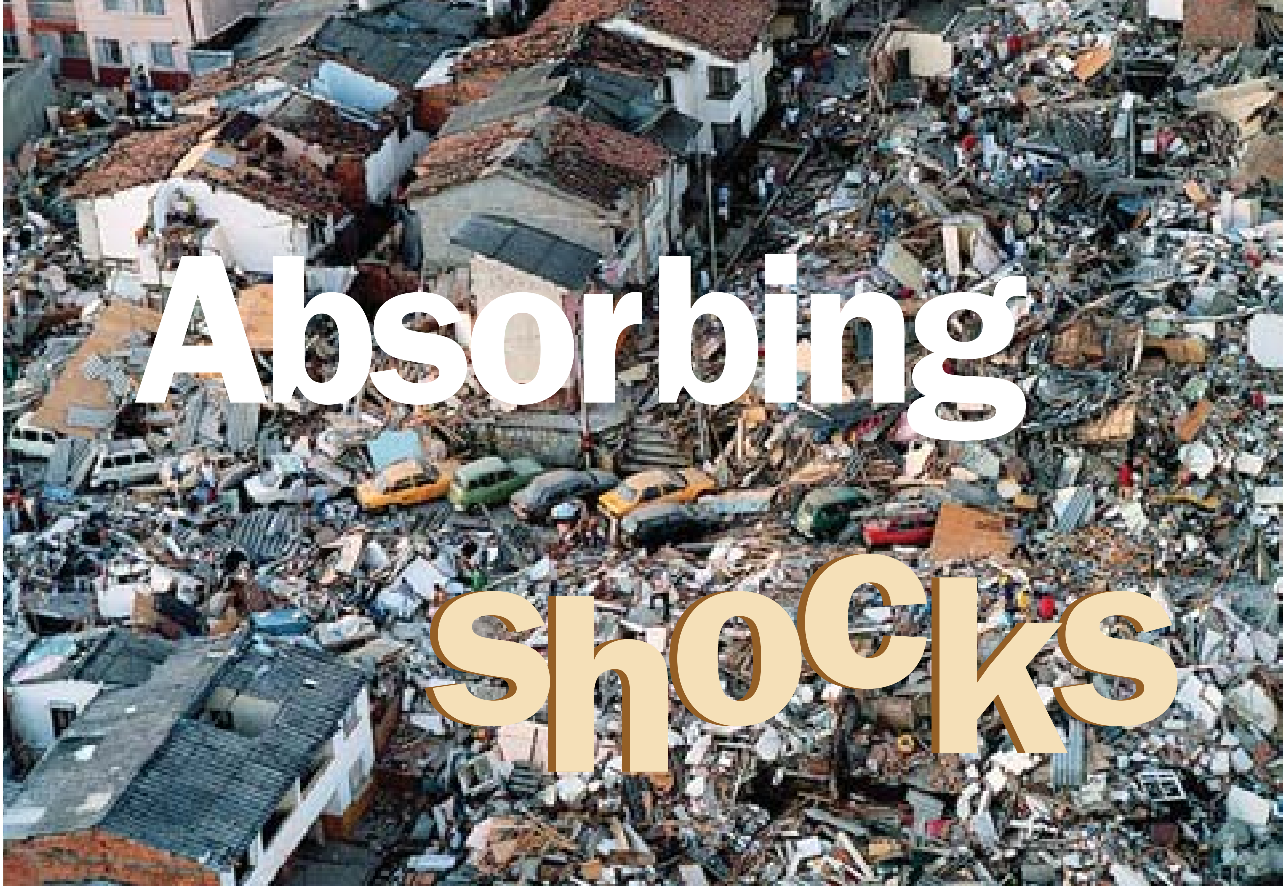


Absorbing Shocks

Nancy Happe, Mumtaz Hussain, and Laure Redifer

HURRICANE Mitch struck Honduras in October 1998, causing catastrophic floods and landslides. The human costs were enormous: over 13,000 people died or disappeared and another 12,500 were injured; about half a million people lost their homes. Overall, about one and a half million people were affected by the hurricane. Direct damages were estimated at $2.2 billion, about 47 percent of the country's 1997 GDP.

In Zimbabwe, the 1991–92 drought reduced the production of maize (the staple food crop) by 83 percent, cotton by 72 percent, and sugarcane by 61 percent: these three crops had accounted for about one-third of agricultural output in the previous year. Over one million cattle, or 23 percent of the national herd, were wiped out. Water shortages affected the processing quality of tobacco (a main export crop), lowering its price on the international market, and drastically reduced hydroelectric generation, leading, in turn, to power rationing.

A fall in world cocoa prices and an increase in oil prices in 1999–2000 reduced Ghana's foreign exchange earnings by about $900 million, or 13 percent of its 1998 GDP. The decline in cocoa prices also cut into rural incomes because most cocoa producers were small farmers (about 1.6 million producers each holding less than 3 hectares). Similarly, when cotton prices fell by 25 percent in 1992 and remained depressed in 1993, Mali lost about $95 million in export earnings, about 4 percent of 1991 GDP.

Natural disasters, large changes in the price for a country's exports or imports, and conflict in neighboring countries are all negative external shocks—sudden events beyond a country's control that can significantly hurt its economy. Although low-income countries have raised growth rates in recent years, this progress is fragile, in part because of their vulnerability to such shocks. Recently, this issue has attracted significant attention in policy circles and explains, in part, why the IMF, along with the rest of the international community, is stepping up efforts to help low-income countries mitigate the impact of shocks. Without such assistance, these countries face an even greater struggle to achieve the Millennium Development Goals (MDGs) by 2015.

How big is the problem?

The shocks that hit low-income countries most frequently are natural disasters and large fluctuations in export or import prices. Natural disasters damage a country's stock of physical and human capital and reduce income and output (see "Being Prepared," *F&D*, September 2003), while fluctuating prices for a country's exports reduce income in the private and public sectors. Other types of external shocks can also be very costly. Conflicts in one country can spill over to neighboring countries and create refugee problems, losses in export markets, higher transportation costs, lower remittances, and even conflict contagion and increased defense expenditures. The economies of Burkina Faso and Mali, for example, were hard hit by the recent turmoil in Côte d'Ivoire.

In addition to physical damage and income losses, shocks also have indirect effects that can reverberate through an economy, hampering output and investment, upsetting macroeconomic balances, and increasing debt and poverty over a number of years (see Chart 1). The type and magnitude of indirect effects will depend on the size and duration of a shock, whether measures were taken in advance to mitigate its impact, the government's policy response, and the amount and form of external assistance a country receives. But estimating these effects can be tricky because it is difficult both to identify the channels through which they are transmitted and to isolate the magnitude of their impact, especially when more than one shock has hit or when an economy is recovering from a prior shock.

Through direct and indirect effects, shocks can significantly impede growth (see Chart 2). Following the drought in Zimbabwe, whose economy is based largely on agriculture, real output contracted by over 8 percent in 1992 instead of growing by 4 percent as projected before the shock. Similarly, Honduras had been expected to grow by 5 percent in 1999, but Hurricane Mitch caused real output to contract by 2 percent (a total loss of 7 percent of real GDP). Moreover, if the physical capital destroyed in a natural disaster is not replaced, a country's long-term growth will be affected. In both Ghana and Mali, the slump in prices for their commodity exports, by lowering real income, reduced investment and consumption. Growth in real GDP was thus significantly lower than had been expected before cotton prices dropped. In fact, real GDP in Mali contracted.

Shocks also have a significant impact on countries' fiscal and balance of payments performance (see Chart 2). While shocks are likely to reduce government revenues, the demand for reconstruction and relief can increase and may dictate higher expenditures. A country's flexibility in responding to a shock will depend, in part, on its initial fiscal position, how it finances its deficit, and the sustainability of its debt. Mali, for example, had a large fiscal deficit going into the shock (12 percent of GDP in 1991), leaving it little room to use expansionary fiscal policy after the shock hit. In all four countries described above, the actual fiscal balance after the shock was far worse than the level targeted in a preshock IMF-supported program. Moreover, in the four countries, additional government borrowing was necessary, which increased the governments' external debt relative to GDP. Their trade balances also deteriorated following the shock because export earnings declined, and imports of food (Zimbabwe) and reconstruction materials (Honduras) increased. In Honduras, however, the impact on the current account was mitigated by higher official grants and remittances.

Poor countries are most vulnerable

Why should the international community pay particular attention to the impact of shocks on low-income countries? These countries are particularly vulnerable and have more to lose (see Chart 3). They have a higher incidence of natural disasters and export price shocks and tend to suffer more damage, such as more deaths and greater economic losses relative to GDP, when disasters occur. Since the late 1970s, the frequency of natural disasters, as well as the damage they cause, has increased significantly for all developing countries, reflecting both climatic changes and an increased concentration of these countries' populations in vulnerable areas. This is particularly true for low-income countries, which now have, on average, a large disaster every 2½ years, while other developing countries have a large disaster every 4½ years. Moreover, the average economic losses relative to GDP are increasing over time. Low-income countries also have a significantly higher occurrence of shocks stemming from fluctuating export prices than other developing countries, although their average earning losses relative to GDP are similar.

The poor suffer disproportionately from shocks because they generally have limited savings and access to credit; they rely heavily on public social services, which deteriorate as spending becomes constrained; and their limited skills mean higher income shortfalls. In the two disaster cases for which information on poverty exists, income and other indicators of poverty worsened despite the authorities' efforts to increase social spending (Honduras) and increase food transfers (Zimbabwe).

What can countries do?

The best way for a country to reduce the vulnerability of its economy to shocks is through policy reform and the careful

Chart 1

Heavy toll

How the immediate losses from natural disasters feed into longer-term damage.

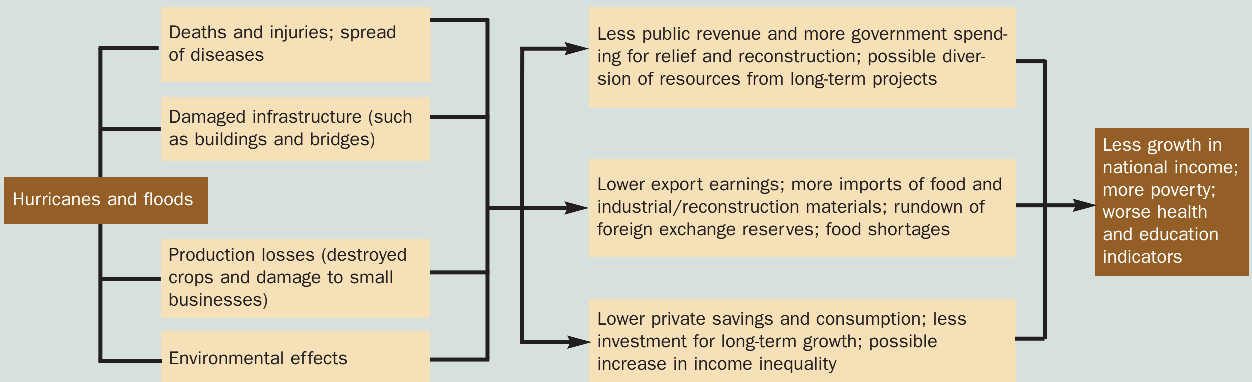
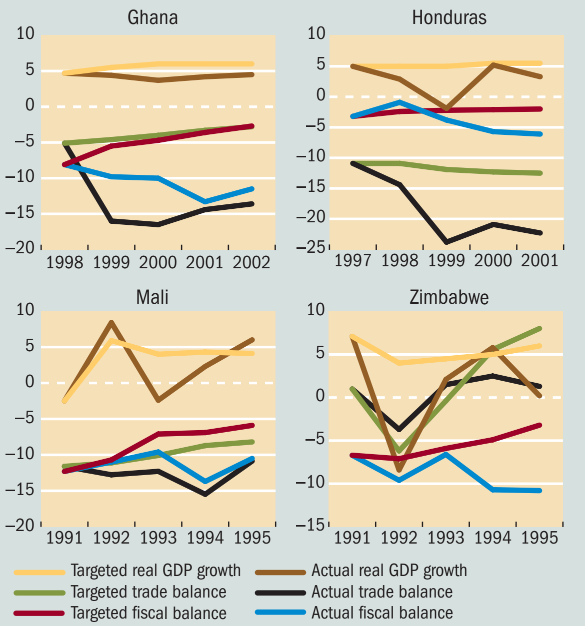


Chart 2

Falling behind

Because of natural disasters and price swings, growth, trade, and fiscal balances failed to meet expectations.

(GDP growth in percent; other indicators in percent of GDP)



Sources: IMF Staff Country Reports on Use of Fund Resources; IMF, African Department.

Note: Hurricane Mitch hit Honduras in late 1998. Ghana experienced price shocks in 1999 and 2000, Mali in 1992 and 1993. Zimbabwe suffered drought in 1991–92.

design of policies to mitigate the impact of shocks when they do occur. Good policies range from encouraging the diversification of production (for example, liberalizing markets and developing the private sector) and adopting and enforcing adequate building codes to protect against disasters—which can limit the immediate impact of a shock—to building up a cushion of financial reserves as a buffer against shocks or purchasing formal insurance (see "Being Prepared"). But these measures are costly, particularly for low-income countries, and some measures, like output diversification, take a long time.

Similarly, low-income countries have not been able to take advantage of insurance and other market-based mechanisms to manage their risk. One reason is that weak financial markets make it difficult for them to access international insurance markets. During 1985–99, for example, less than 1 percent of low-income countries' total losses from natural disasters were covered by insurance. But when precautionary measures are not in place, resources are likely to be diverted from longer-term investments—for example, education, health, and infrastructure—to deal with the impact of a shock. Thus, in deciding whether to implement measures and policies to prepare for shocks, countries need to compare those costs with the cost of dealing with the after-effects of shocks, particularly if they occur frequently.

What can the international community do?

The international community can supplement national efforts to reduce vulnerability to shocks by, for example, providing assistance to low-income countries to implement disaster mitigation measures and use market-based mechanisms for risk management.

A strong case can be made for external assistance on concessional terms to finance relief and reconstruction in low-income countries hit by shocks. It can prevent additional drops in income, consumption, and investment so that the direct impact of a shock does not spread and further harm economic growth and increase poverty. Timely aid to finance shock-related expenditures also makes sense from the international community's perspective because the returns on aid are high immediately after a shock. This implies that, even under the assumption that total foreign assistance available to a country over time is fixed, it can make sense to reallocate some of that assistance to help offset the effects of a shock. Assistance should also be provided quickly to reduce the initial impact on the incomes of the poor so that they do not have to take irreversible steps, such as selling their livestock, to survive.

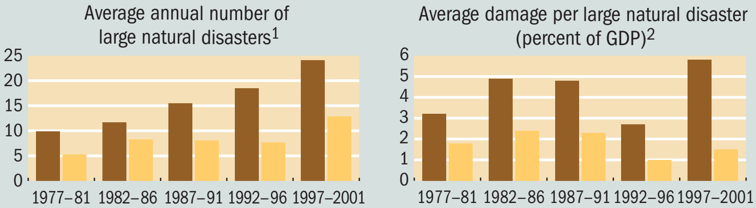
Donors and international financial institutions already provide external assistance to countries affected by exogenous shocks in various forms—grants or loans, financial or in-kind assistance (such as food and medicines, technical assistance)—and through a number of channels—for example, directly, or through contributions to UN agencies or through nongovernmental organizations. Although the diversity of this assistance makes it difficult to quantify, its effectiveness can be strengthened in a number of ways, as discussed below.

- *Allocating aid according to need:* Large, highly visible natural disasters attract more external assistance than smaller disasters and commodity price shocks, which tend to be "silent" crises. More systematic identification of need would be useful in channeling resources to where they could be most effective.
- *Reducing delays in response:* Although the international community has been quicker to respond in recent years because many agencies have developed targeted facilities, the disbursement of funds can still take a long time. Delays can be caused by inadequate information about the impact of disasters and reconstruction needs or by capacity and absorptive constraints in the affected country. For example, at the Consultative Group meeting for Honduras in May 1999, $1.2 billion in grant aid was pledged, but, by September 2000, donors had been able to disburse only about $400 million. The gradual onset of some shocks (such as those affecting a country's terms of trade) and the difficulty of projecting how long they will last can also lead to delays.
- *Considering moral hazard and reducing vulnerability:* If countries know that external assistance will be readily available if they are hit by a shock, they may lose the incentive to take preventive measures. It is therefore important that external assistance be linked to actions by the recipient countries to reduce the vulnerability of their economies to shocks. But any such conditions need to be designed carefully so that they do not further retard the response to a shock.
- *Considering debt sustainability:* External assistance needs to take account of recipient countries' external debt situa-

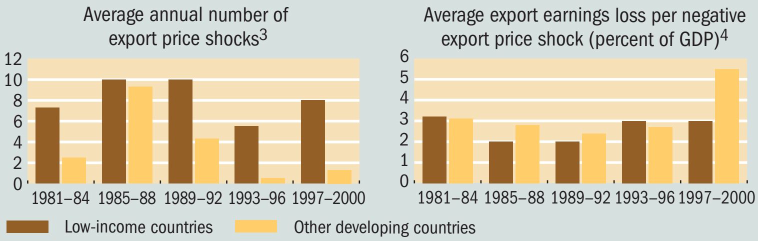
Chart 3

Poverty means vulnerability

Low-income countries are particularly susceptible to natural disasters.



They also experience more disruptions to their terms of trade.



Sources: IMF staff calculations based on data from the Center for Research on the Epidemiology of Disasters (CRED), 2002; and IMF, World Economic Outlook database.

[1]Based on the CRED database, a disaster is classified as large if it affected at least ½ of 1 percent of a country's population or caused damage of at least ½ of 1 percent of national GDP. Sample includes 59 low-income countries and 56 other developing countries.

[2]Average damage per disaster is based on unweighted averages of country ratios of damage to GDP.

[3]A shock is defined as a decline of at least 10 percent in the real export price from the previous year's level. Sample includes 37 low-income countries and 27 other developing countries. Oil-exporting countries and small developing states are excluded.

[4]Average loss per shock is based on unweighted averages of country ratios of earnings loss to GDP.

tion. For some very heavily indebted countries, even highly concessional loans may not make sense, and grants may be the only option.

Where does the IMF fit in?

Against the backdrop of the international community's drive to meet the MDGs, the IMF has recently reviewed its role in helping low-income countries. To achieve the MDGs, these countries must achieve high, sustained growth. But even if they are taking all the right steps to reduce poverty and boost growth, they can be hit by an external shock and suffer an economic setback. Already, the IMF helps countries devise appropriate macroeconomic policies before and after a shock and often provides financial assistance. But its role can be strengthened in three principal ways:

• *Focusing policy advice and technical assistance more systematically on helping countries prepare for, and respond to, shocks.* Steps are being taken to make the IMF's focus on preparation for shocks more systematic. The staff will encourage better accounting, in the context of arrangements under the Poverty Reduction and Growth Facility (PRGF), for the risk of shocks and assist country authorities in developing contingency spending plans as part of their poverty reduction strategies. Guidelines on debt sustainability are also being developed for new borrowing by low-income countries and take into account how the external debt position affects the authorities' flexibility in responding to a shock. With technical assistance from the IMF, which focuses on strengthening the institutional framework, low-income countries can better arm themselves against shocks. The IMF can provide policy advice and technical assistance to countries as part of both its programs and its surveillance.

• *Providing balance of payments assistance more consistently to low-income countries experiencing external shocks.* Because the IMF can provide financing relatively quickly, it can provide temporary financial support, when urgent unaddressed needs exist, until other sources of financing become available. It can use a number of instruments—Emergency Natural Disaster Assistance, the PRGF, the Compensatory Financing Facility, and Stand-By Arrangements. However, only financing under the PRGF is currently available on concessional terms.

• *Identifying countries in need of more donor financing.* A systematic focus on external shocks will also help the IMF identify unaddressed financing needs of which donors should be made aware. Financing from the IMF itself would continue to be a relatively small part of the international effort to help countries hit by shocks, both because it is generally less concessional than financing from other sources and because many of the actions required to reduce vulnerability to shocks generally do not fall within the IMF's purview.

Achievement of the MDGs will be a major challenge for both low-income countries and the international community, which has pledged to support their efforts. It is increasingly recognized that exogenous shocks can derail countries' efforts to achieve these goals. Low-income countries must address their structural weaknesses, which have contributed to their vulnerability. Those that experience frequent natural disasters or negative trade shocks need to build insurance against them into their policies by, for example, accumulating a high level of foreign exchange reserves and maintaining prudent fiscal policies.

The international community also would have to strengthen its assistance to the vulnerable countries along the lines discussed above. The IMF is joining the efforts of others in the international community to focus more attention on this issue by reinforcing, in its areas of expertise, low-income member countries' efforts to reduce their vulnerability and to respond better when shocks do occur so that the damage is contained. ■

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For a more detailed discussion of these issues, see the paper "Fund Assistance for Countries Facing Exogenous Shocks" (Washington: International Monetary Fund, 2003), available at http://www.imf.org/external/np/pdr/sustain/2003/080803.htm