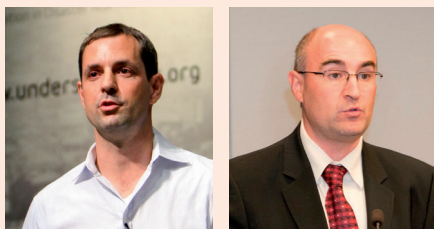


BUILDING FINANCIAL RESILIENCE AGAINST NATURAL DISASTERS AND CLIMATE CHANGE



Francis Ghesquiere and Olivier Mahul at the Global Facility for Disaster Reduction and Recovery discuss the challenges created by natural disasters and climate change to fiscal account management and outline steps that governments should take to overcome them.

A GLOBAL CHALLENGE

The roll call of recent major disasters provides grim illustration of the human and economic toll of natural hazards. Globally, 2011 was the most costly year on record, with losses totalling over US\$380 billion.

Since 2000, 22 of the largest disasters in Commonwealth countries have triggered losses of US\$37.7 billion, according to the World Bank's Damage and Loss

Assessment database. This includes the 2010 floods in Pakistan, which caused over US\$10 billion in losses and affected the lives of over 20 million people. In the Horn of Africa, the extended 2008-2011 drought left 3.7 million people without food and clean water, and caused estimated losses in Kenya alone of US\$12.1 billion. This caused an estimated 2.8 per cent deflection in economic growth. In small island states, the impact can be even more crippling: Hurricane

Tomas devastated St Lucia in 2010 and wiped out 43 per cent of GDP.

Aside from the devastating humanitarian impact, natural disasters are also a growing challenge to fiscal account management, particularly in low and middle-income countries. Here, territorial planning, enforcement of building codes and effective emergency response mechanisms can often be lacking. Rapid urbanisation and climate

change pressures compound this. Fast growing economies experience exponential growth in assets exposed to the threat of damage from natural hazards. Without sufficient risk mitigation programmes, governments experience increasing volatility on fiscal revenue and budget appropriation; this can in turn impact the delivery of public services and investments.

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As part of broader fiscal risk management, greater financial resilience to disasters can be achieved through establishing a budget protection strategy. This paper outlines three key steps Commonwealth nations may consider when thinking about developing a budget protection strategy focused on disaster.

1. To assess contingent liabilities associated with natural disasters;
2. To improve capacity of the state to finance disaster response;
3. To reduce financial exposure of the state.

ASSESSING THE CONTINGENT LIABILITIES

Natural disasters can create major explicit or implicit contingent liabilities for governments.

In many countries, the law defines the responsibility of the government in case of natural disasters. This may include losses incurred on government assets as well as emergency assistance to be provided to private parties (such as low income households). These potential losses are called explicit contingent liabilities because they are clearly defined in the laws of the country. Despite sometime clear regulations defining the limits of government responsibility, political and social pressures often lead government to accept additional liabilities after the occurrence of the disaster. These implicit contingent liabilities are often the most difficult to assess and manage from a budgetary perspective. Not only is the event triggering them uncertain and high volatile, but their nature itself is difficult to predict and quantify.

Quantifying the contingent liabilities associated with adverse natural events can be done based on historical analysis, and will generally be complemented with information from probabilistic risk models. Analysis of post-disaster budget allocation over time can give a good sense of the recurrent needs governments face, but will not capture potential losses from low-frequency, high-impact events. Advanced probabilistic risk modeling techniques can help assess the potential for major losses in a given territory, such as the long-term average annual loss or probable maximum loss.

IMPROVING POST-DISASTER BUDGET RESPONSE

Mobilising budget resources after a disaster

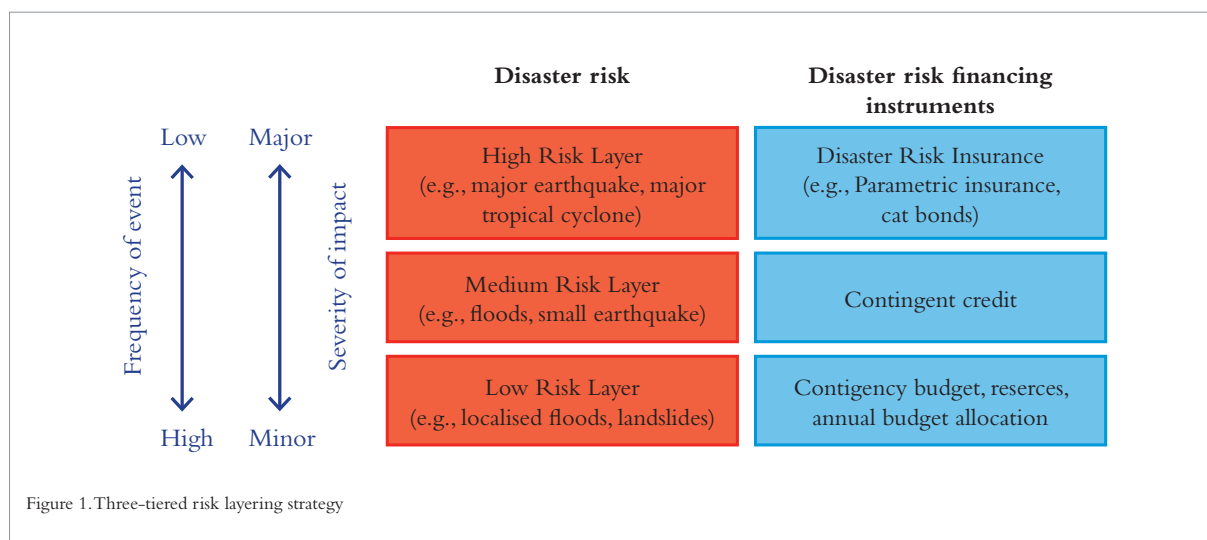
An effective budget management strategy should allow for rapid mobilisation of resources in case of a disaster, while protecting the

Assessing exposure to natural disasters in the Pacific using catastrophe risk models

The Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) is a joint initiative among the Secretariat of the Pacific Community (SOPAC), the World Bank and the Asian Development Bank, with financial support from the government of Japan and the Global Facility for Disaster Reduction and Recovery (GFDRR). Detailed risk assessments were conducted for 15 nations in the Pacific region quantifying potential disaster losses. This includes the most comprehensive analysis of buildings, infrastructure and cash crop exposure ever conducted for the region. 11 countries were visited to survey more than 80,000 buildings, digitising the footprints of 450,000 buildings from satellite imagery, as well as inferring from satellite imagery 2,900,000 buildings and other assets. Maps will be shared through an open risk information platform as powerful visual tools for informing decisions.

fiscal accounts. When confronted by a natural disaster, governments will have to mobilise resources quickly without jeopardising their fiscal balance. This is generally done by building a financial protection strategy that combines a number of instruments to match potential financial needs and manage volatility on the fiscal accounts.

Understanding the timing of funding needs is essential. Immediate resources will be needed to support relief and early recovery operations, but the majority of the spending needs will only emerge several months later when the reconstruction programme starts.



Various financial instruments are available to build a budget management strategy. For example, reserve funds provide resources that can be mobilised quickly, but can be in high competition with other needs. Borrowing can be an effective way to finance reconstruction programmes because it distributes losses over time, but funds can be slow to arrive and costly to finance. Market-based risk transfer instruments, such as parametric insurance, can provide resources quickly, but remain comparatively expensive. With this range in mind, governments can take a three-tiered approach to ensuring immediate liquidity after a disaster, exploiting the full range of instruments available (figure 1).

Market-based risk transfer is usually an effective but expensive proposition for governments that otherwise have access to sovereign financing. The swiftness at which risk transfer instruments can provide liquidity – without requiring access to credit – can be attractive. This is particularly the case for small states that do not generally have sufficient capacity to build reserves and are restricted in their access to credit due to high debt ratios. The Caribbean Catastrophe Risk Insurance Facility

(CCRIF) is an example where small island states acted together to create a regional reserve mechanism to secure access to immediate liquidity in case of a major disaster.

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Ensuring timely and effective recovery

Delays in recovery operations are usually due to difficulties in appropriating and executing resources that are readily available. Systems must be put in place to ensure effective response at every step of the chain, from resource mobilisation to execution.

The administrative and legal dimension is as important as the financing strategy itself. This includes: (i) the legal framework for emergencies (who declares

an emergency? under what circumstances?); (ii) the budget appropriation and execution (who appropriates the budget? how are the funds transferred to the line ministries?); (iii) the fiduciary control (what controls and safeguards exist to ensure that funds are used efficiently and effectively? how are waivers, if any, processed? How will the use of funds be tracked? When are audits conducted?); and (iv) proactive procurement (can specific emergencies be predicted and contracts be tendered in advance? can the government ask suppliers to hold minimum amounts of supplies that will be purchased at a set price?).

In an emergency, control over the use of resources is often waived, leading to significant leakage when public finance is already scarce. Emergency budget appropriation systems should include specific controls and mechanisms to ensure accountability and transparency. These controls should be adapted to the emergency context. For example, many ex-ante controls can be delegated to decision makers on the ground and replaced with ex-post controls (additional audits, added transparency in the use of resources, etc.).

REDUCING FINANCIAL EXPOSURE

The most effective way to reduce risk over time is to adopt strict territorial planning systems, and promote the use of safe building standards. Investment in drainage, flood protection, retrofitting of infrastructure can also help reduce existing risks. Promoting the use of insurance in both the public and private sector can also help reduce the contingent liabilities of governments by transferring the risk to third parties, such as insurance companies.

Insuring public assets

Public buildings and infrastructure, such as schools, hospitals, roads and bridges, can be severely affected by adverse natural events and represent a major contingent liability for governments.

Insuring public assets can be an effective way to reduce the explicit contingent liability of government and limit the volatility on government budget accounts. Some middle-income countries require that public assets have property insurance coverage against natural disasters, such as Mexico and Colombia. In practice, this is rarely done efficiently, because of the difficulty in setting up coherent national programmes and because public managers often lack basic information to select a cost-effective insurance coverage. A key lesson emerging from the 2010/11 floods in Queensland, Australia was that the insurance of public assets is critical, and that risk-pooling at the local council level could offer significant cost benefits in this regard.

Property catastrophe risk insurance

Promoting private insurance can help reduce the implicit contingent liability of government and help increase the resilience of society as a whole. By promoting

competitive property insurance markets, governments can help shift the burden of post-disaster recovery to specialised risk carriers like insurance companies and contribute to increasing the resilience of its economy. A property legal and regulatory system is essential to support the development of a sustainable property catastrophe insurance market, where premiums reflect the underlying risks. Basic risk market infrastructure should be in place to support the development of catastrophe risk insurance. This includes product development, risk assessment and pricing methodology, underwriting and loss adjustment procedures and distribution channels.

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CONCLUSION

With the three steps set out in this paper, policy makers in Commonwealth nations have a framework that can assist the development of a sustainable and cost-effective fiscal management programme against natural disasters. Each step should be further detailed into an action plan based on the characteristics and challenges of each country. The action plan should lay out short, medium and longer term objectives. This operational framework is relevant not only

for national governments but also for local governments aiming at increasing their fiscal resilience against natural disasters. In the context of climate variability and increasing exposure to disaster risks, building financial resilience at all levels of the state is critical to ensure to protect all our futures.

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The Global Facility for Disaster Reduction and Recovery (GFDRR) is a global partnership programme in The World Bank's Sustainable Development Network, launched by the World Bank, the UN and donors in 2006. As the World Bank's knowledge hub and 'anchor' on DRM, GFDRR has several years experience supporting innovation in the fields of probabilistic risk assessment, mainstreaming of risk information in policy and operations, and risk financing.

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