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Fiscal Impact of Natural Disasters in Vietnam

Understanding Options for Sovereign Disaster Risk Financing

DISASTER RISK FINANCING & INSURANCE CASE STUDY

Background

Vietnam is highly exposed to multiple natural disasters, including tropical cyclones, tornadoes, landslides, and droughts. An estimated 59% of its total land area and 71% of its population are vulnerable to cyclones and floods. Over the past 20 years, natural disasters have resulted in the loss of over 13,000 lives. Moreover, there are rising concerns about the impact of climate change on the frequency and intensity of climatic hazards in Vietnam.

Strengthening disaster risk management is a priority for the Government of Vietnam (GoV). In November 2007, the GoV approved the National Strategy for Natural Disaster Prevention, Response, and Mitigation. This strategy recommends the development of disaster risk financing solutions (including insurance) to complement disaster risk management strategies. The GoV requested the World Bank to conduct a study on the fiscal impact of natural disasters to facilitate the development of this financial strategy.

Objectives

The objective of the study was to build institutional capacity on the financial protection of the state against natural disasters and to provide disaster risk financing options in Vietnam, including both sovereign risk financing and private insurance instruments.

Outcome

The study consisted of the following components:

- Assessment of the frequency and severity of natural hazards and analysis of the cost of disaster-related damage to private and public assets;
- Review of the GoV's budgetary process for financing natural disasters, including sources of funding and changes in funding levels over the past decade;
- A dynamic analysis of the impact of natural disasters on the government's fiscal balance to identify potential post-disaster funding gaps;
- Options for the use of disaster risk financing instruments to protect government budget against the impact of natural disasters, drawing on international experience.

Highlights

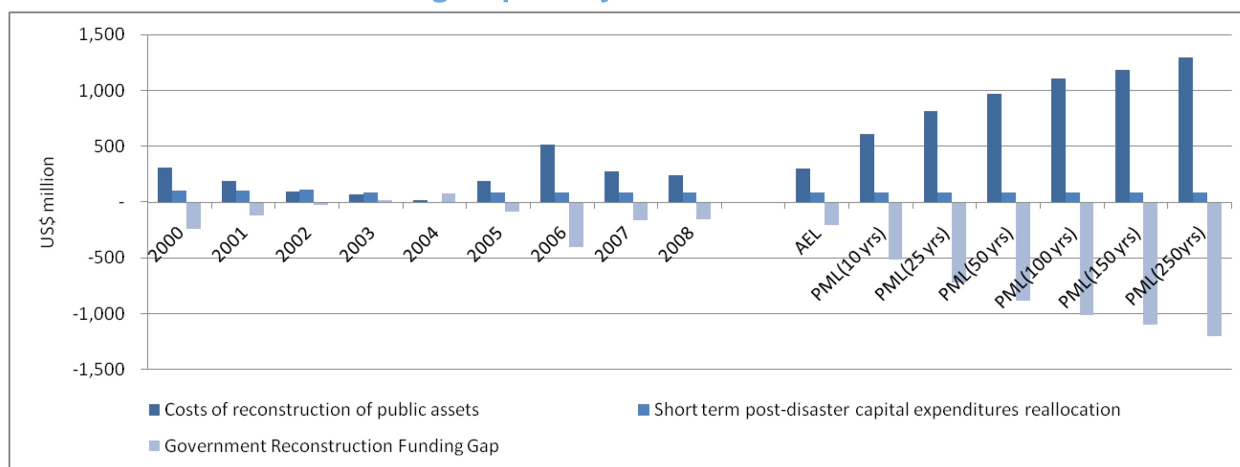
- Strengthening disaster risk management is a priority for the Government of Vietnam, given that the country is highly exposed to multiple natural disasters.
- At the request of the government, the World Bank conducted a comprehensive study on the fiscal impact of natural disasters in Vietnam.
- The study proposes a framework for the analysis of the fiscal impact of natural disasters and options for sovereign financial strategies to protect public resources against natural disasters.

The study found that from 1989 to 2008, Vietnam lost at least 1% of GDP per annum due to natural disasters. The report stated that the post-disaster damage assessment and reporting system tended to under-report the economic value of damages. It suggested that Vietnam could experience even higher losses in the future due to an increase in the concentration of assets at risk, and possibly an increase in the frequency and/or intensity of major events linked to climate change.

The dynamic funding gap analysis identified potential funding gaps during the post-disaster phases. It suggested that the government had been able to finance post-disaster recovery activities out of its short-term fiscal resources, mainly from central and local contingency budgets. A preliminary catastrophe risk analysis, however, indicated that for recovery costs of US$500 million and above, the contingency budget allocated to natural disasters may not be sufficient. Moreover, the study identified reconstruction funding gaps between 2006 and 2008. The *as-if* analysis indicated that the government could face reconstruction costs of around US$210 million in an average year (see Figure 1).

Finally, the study suggested that the GoV develop a disaster risk financing strategy that would layer risks and finance major disaster losses using a combination of financial instruments, including contingency budgets and national disaster (multi-year) reserves for the low risk layer, contingent credit for the medium risk layer, and risk transfer instruments (including insurance) for the high risk layer.

Figure 1: Reconstruction Funding Gap Analysis at 2008 GDP Values



Note: AEL = Average Expected Loss; PML = Probable Maximum Loss

Lessons Learned

1. Fiscal impact studies and budget stress tests can provide governments with insights about their current disaster risk financing strategies' strengths and weaknesses. Governments may not be aware of the short-term and long-term fiscal impacts of natural disasters on their budgets and their economies. Fiscal impact studies can reveal the scale of this impact, both historical and predicted through simulations.

2. **Fiscal impact studies can help identify the optimal, cost-effective disaster risk financing strategy for a country.** Once a country understands its fiscal exposure to natural disasters, it can identify the best combination of risk-retention, contingent financing, and risk transfer to meet its needs at the lowest possible cost.

3. The accuracy of fiscal impact studies may be limited by the availability and quality of data. The impact assessment will only be as accurate as the records from post-disaster needs assessments (PDNA) that are used in calculations. In Vietnam, for example, although the GoV had conducted post-disaster needs assessments that measured physical and financial losses to human life, property, infrastructure, production, and industry for over 25 years, there were data quality issues. It is believed that the calculated losses significantly underestimate the true cost of natural disasters in Vietnam.

Glossary

Risk layering: The process of separating risk into tiers that allow for more efficient financing and management of risks.

Funding gap: Post-disaster financing needs exceed the available financial resources.

Dynamic government funding gap analysis: Analysis of the funding gaps faced by the government during the main post-disaster phases: short-term recovery and longer term reconstruction.

Budget stress test: Simulations of the impact of hypothetical disasters (as-if scenarios) on the government budget to analyze whether and how the budget can sustain such shocks.

Further Reading

World Bank (2010). *Weathering the Storm: Options for Disaster Risk Financing in Vietnam*. Washington, D.C.

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