Pacific Islands Workshop

Building Resilience to Natural Disasters and Climate Change

April 4-6, 2017 | Suva, Fiji

Introduction to exercise on *Financing and Debt Sustainability*

Iris Claus and Jan Gottschalk

Workshop on

Building Resilience to Natural Disasters and Climate Change

April 6, 2016

Suva, Fiji

PFTAC

Financing and debt sustainability

- On day 1 we discussed the merits of building resiliency against the economic and political costs.
- Resilient infrastructure was financed with recurrent revenues (including grants), by cutting expenditure, and accumulated cash (reserve fund).
- Today we will consider financing resilient infrastructure investment by borrowing.
- We will make the simplifying assumption that Pacifica starts out with no debt.

Sharing the costs of building assets

- Borrowing shifts some of the costs of public spending to future generations.
- Prudent borrowing by government makes sense when future generations benefit from the expenditure, like with roads, airports, hospitals.
- Future generations will use the resilient roads built today and may reasonably be expected to contribute to the costs of building them.

“Consumption smoothing”

- Prudent borrowing also makes sense from a welfare point of view.
- Generally people prefer stable levels of consumption to large variations.
- People like to have similar levels of consumption today, tomorrow, and the day after.
- This is why people save during their working years for retirement and take out mortgages to buy a house.

How much to borrow?
And at what terms?

How much to borrow?

- The more debt a country (a person or business) has, the higher is the risk premium.
- The risk premium is the additional yield investors demand for the possibility of non-repayment of debt.
- If the debt gets too high lenders may become unwilling to lend at all.
- For these reasons, many countries have imposed a limit on how much they can borrow.

How much to borrow? (cont.)

- Debt limits are typically defined as a percent of gross domestic product (GDP).
- GDP measures the income generated from economic activity in a country.
- The ability to make debt and interest payments depends on income earned.

How much to borrow?

- Having the option to borrow provides “insurance”.
- When hit by an unexpected shock (e.g. natural disaster, falling ill, losing a job) borrowing allows to “smooth consumption”.
- Lenders will not lend more if borrowers already have borrowed the maximum amount they can repay.
- Borrowing below the debt limit provides a buffer during bad times.

At what terms to borrow?

- The maturity of a loan to acquire an asset should not exceed the useful life of the asset.
- The costs of acquiring the asset should not exceed the benefits derived from the asset.
- When determining whether or not to acquire an asset, consideration needs to be given to what else the money / loan could have been spent on.
- Will there be sufficient cash (i.e. recurrent revenues or reserves) to make interest and loan payments and maintain the asset?

Exercises

Exercise I

Switch from standard to resilient road building through external borrowing

- How much does Pacifica borrow?
  - Step 1: Let's assume Pacifica just borrows the extra cost of building resilient roads, which are 50% more costly than standard roads → Is this enough? What happens to the reserve fund?
  - Step 2: Let's assume that Pacifica also borrows to cover external debt service costs.
- Do you consider the borrowing as sustainable?
- Why does the overall balance go into deficit?
- What are the risks?

Exercise II

Sustainable external borrowing

- Switch from standard to resilient road building using a mix of external financing and creation of domestic fiscal space.
  - How much external debt do you consider prudent?
  - How much domestic fiscal space can Pacifica create?
  - Adjust the resilient road building program and iterate.
- How does this scenario compare to the one without debt?
- What are the advantages of having access to external borrowing? What are the disadvantages?

Exercise III

External grants from donors

- Grants are a random percent of disaster damage and intended to help with emergency relief and rebuilding post-disaster.
  - Step 1: Let's start with the resilient road building program from Exercise II.
  - Step 2: Let's simulate Pacifica being hit by natural disasters → Did the building program make Pacifica resilient? Did Pacifica build up enough reserves for emergency relief?
  - Step 3: Let's assume Pacifica receives disaster grants.
- How do grants change the outcome?
- How do they affect the resilient road building and buildup of reserve fund?

Discussion

What are the tradeoffs and constraints with respect to resilient investment?

- You may want to consider constraints related to:
  - External borrowing
  - Creation of domestic fiscal space
- What are the tradeoffs of external borrowing, grants and domestic fiscal space?

Discussion (cont.)

- What shocks does your country faces?
- How much fiscal buffer do you think your country has?
- What is your experience with disaster grants?
- What is your experience with external borrowing?
- How could more fiscal buffer be created?
- What other disaster-related financing instruments are you aware of?

Key messages

- Natural disasters lower output / income.
- Resilient investment at least partly mitigates costs.
- But it is costly requiring medium-term planning.
- Debt sustainability
  - Sufficient cash for interest and debt payments, and maintenance of assets
  - Sufficient income over time to repay debt
  - Buffers to manage unforeseen shocks
- Investments generate returns that are higher than the costs which include opportunity costs.