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Efficient risk transfer and the modeling of fiscal risks

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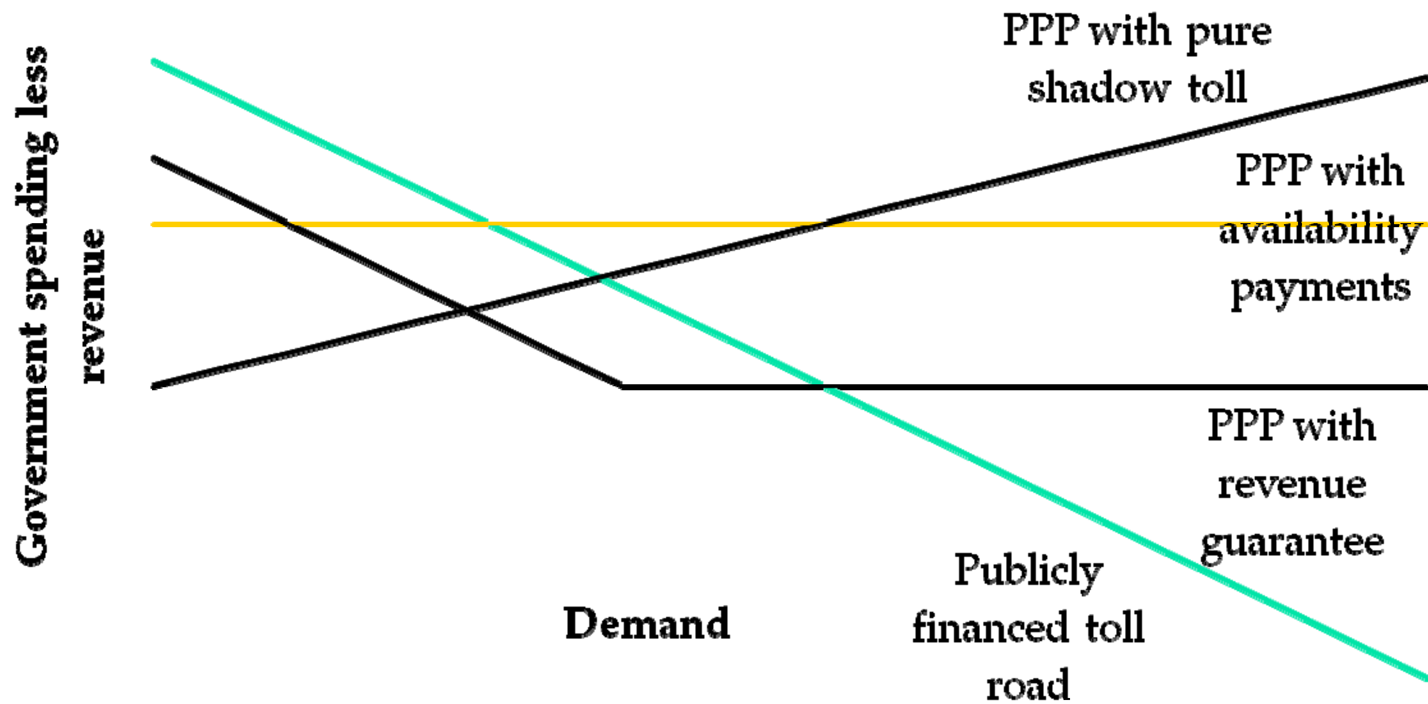
Overview

- PPPs typically expose the government to less risk than publicly financed investment
- But they expose the government to risks that may be less evident or less easy to manage than the risks of public finance
- Good decisions about PPPs and good fiscal management therefore require governments to understand the risks, quantify some of them, and have good rules for controlling and reporting exposure to risk

There are many ways to be exposed to a risk: Demand risk for a road



Guarantees are common

- 19th century PPPs (e.g. Bridge of Bordeaux 1817, Pennsylvania canal 1819, Warsaw-Vienna railway in 1838)
- Modern debt guarantees (e.g. A2 Motorway in Poland)
- Revenue guarantees (e.g., Hungary, Chile, Korea, South Africa)
- Guarantees of state-owned utilities' purchase obligations (water, power, etc)
- Agreements to compensate on early termination of a contract

Governments should bear risks they can best manage—but what does "manage" mean?

- Governments should be wary of bearing a risk as a way of disguising a subsidy
- They should instead try to bear just those risks they can best manage
- Managing can involve three things:
  - Influencing or controlling the underlying risk factor
  - Anticipating or respond to changes in the risk factor
  - Simply absorbing the risk
- Risks and rights must be matched.

Some decisions are helped by quantification

- Governments shouldn’t try to measure every risk they’re exposed to
- But measurement is helpful when risks are big and beyond the government’s control
- Many aspects of exposure can be measured:
  - The *most* the government could have to spend
  - The amount it can *expect* to spend
  - The *value* of its commitment (taking account the timing and risk characteristics of the possible payments)
- Estimates may be rough, but better than nothing

How to measure exposure to risk?

- Identify the risks factors
- Specify a model of each risk factor
  - Probability distribution (e.g. normal distribution)
  - Stochastic process (e.g. geometric random walk, mean-reverting process)
- Estimate, or guess, the parameters of the model
  - Mean and standard deviation
  - Drift rate and volatility
- Derive results, either analytically or using numerical techniques, often Monte Carlo simulation.

Good fiscal-management rules also help

- Financial reporting according to the best accounting standards (e.g. IPSAS/IFRS)
- Additional disclosures to fill gaps left by accounting standards (e.g. Chile)
- Control by ministry of finance or cabinet of decisions to take on major risks, and rules requiring analysis before decisions (e.g., public sector comparators)
- Inclusion, where possible, of decisions to bear risks in budgets (guarantee funds or budgeting according to sophisticated accounting, as in the USA)

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