

# **The economic incidence of infrastructure spending**

## Toward better practice

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# Context

Longstanding questions:

- *Who benefits from public spending on infrastructure & how much do they benefit?*
- *What is the net distribution of benefits?*

To help address these questions, we keep resurrecting and repeating standard benefit incidence analysis (BIA)--a straightjacket methodology known to be full of problems.

This has led to little improvement in answering the questions, particularly with respect to infrastructure. Yet there are now opportunities for improving what we know.

# What have we learnt in 20 years?

- Achieving welfare ‘impacts’ is not straightforward
- Not just a matter of spending money
- The cost of provision/or value of transfer does not necessarily reflect the benefit to user
- Behavioral responses by beneficiaries, those they interact with, and administrative or political agents can be large & matter to outcomes
- Methodological/measurement issues confound inferences
- Particularly true for infrastructure: general equilibrium & indirect effects on poor

# **Benefit incidence analysis and impact evaluation (IE) are two sides of the same coin**

- Logically, can't separate the question of what the incidence of a program is from the question of what its impacts are
  - Incidence is the impact conditional on the pre-intervention welfare indicator or the **conditional impact**
  - There exists some unknown initial distribution of welfare in the absence of a spending program and the aim is to understand the assignment of the benefits in that distribution (i.e. by definition that observed minus the impact)

# We can't know incidence without knowing impact

We should revisit BIA in the context of what we have learnt from IEs.

At the same time the IE boom suffers from some important inadequacies:

- What gets evaluated:* typically a lot less work on infrastructure interventions and economy-wide programs

- How it gets evaluated:* the RCT fashion has fostered an emphasis on average treatment effects on the treated for neatly assigned programs with minimal spillovers.

# Two key areas we need to focus on:

1. Evaluating infrastructure interventions. Two types:
  - a. Assigned in some sense (to people or places) and spillover effects are not a big issue
    - Piped water, rural roads, village electrification or sanitation
  - b. Not clearly assigned & spillover effects are huge
    - Trunk roads/highways, public goods

# Two key areas we need to focus on:

2. Dealing with heterogeneity and distributional effects; both:

- narrow sense of marginal distribution (average impact at a given pre-intervention welfare level)
- joint distribution of impacts; how the gains are distributed at a given level of pre-intervention welfare.

*How does impact vary with pre-intervention welfare & at any specific level?*

# Progress on how to deal with these issues

- Looking at how impacts vary with observables.  
Standard methods (interaction effects)
- New local IV estimators (Heckman et al.): trace out the marginal impacts and joint distribution of benefits
- New tools for broader sectoral/economy-wide interventions, such as using structural econometric models to simulate counterfactual in the absence of reform (e.g., Ravallion and van de Walle on agrarian reforms in Vietnam)
- Challenges in coming up with feasible creative tools appropriate to each problem/setting.