

Investing in public infrastructure: an effective inclusive growth strategy?



Australian Government

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Governments encourage growth through various policies: infrastructure, education, training, health, agricultural extension, trade, etc. Each strategy has wide-ranging impacts on the entire economy - sectoral production, wages and other factor returns, consumer prices, public finances, etc. - with very different distributive consequences and welfare impacts for the concerned populations.

In 2010, PEP was commissioned by the **Australian Agency for International Development (AusAID)** to lead small teams of local researchers in a special research initiative that aimed to analyze such interactions and consequences in different countries – **China, Pakistan** and the **Philippines**. By building these "motors of growth" into country-specific economy-wide models linked to household survey-based microsimulation models, the researchers simulate the distributive impacts of infrastructure investments and alternative financing mechanisms, and provide insights on accompanying policies to allow greater participation by the poor.

The project has been carried out in collaboration with an international coordinating team of experienced researchers in macro and micro-modeling techniques, whose contributions in terms of methodological developments are also expected to serve internationally as a new resource for both researchers and decision-makers to assist in related policymaking.

The different studies' findings have since been communicated to inform both national and international policy debates, particularly on the role of public infrastructure in economic growth and poverty reduction. [Find out more...](#)



Simulating an increase in the ratio of public infrastructure investment to GDP

For the initiative to yield the most useful outcomes possible, all three country studies simulate the same type of growth strategy – i.e. an increase in the ratio of public infrastructure investment to GDP – to allow for comparison of results and conclusions between countries.

In each case, simulations were performed under two **different financing scenarios**; in the first scenario, the increase in public expenditure is financed by an **increase in production taxes** collected by the national government, while in the second scenario, it is financed by an **increase in foreign aid assistance**.

The use of mixed macro-micro simulation techniques enabled the teams to produce detailed assessments of the respective strategies' impact on both:

- 1) the economy as a whole (growth impact)
GDP, prices, wage rates, income, consumption, trade, etc.
- 2) household welfare and disparities (distributive impact)
Who will gain and how?

in order to assess whether devoting increased resources to the development of public infrastructure would be an **"effective inclusive growth strategy"**.





The three boxes below describe the main findings produced by each of the country research teams...

China

Preliminary findings show that, in both scenarios (i.e. regardless of the financing mechanism), such an increase would prove to be an effective inclusive growth strategy. The investments result in considerable productivity improvements and significant positive impact on the economy as a whole, in terms of both economic growth AND reducing poverty and inequality - where all sectors and households benefit in the long run.

It seems, however, that under the « **production tax financing scenario** », some negative impacts occur, although mostly in the short term. This includes a slight increase in inequality rates in the long run, as the negative effects seem greater for “constrained” households (with less access to credit and savings instruments) than “non-constrained” households (better integrated in economic processes with access to capital). In the case of the « **foreign aid financing scenario** », positive effects are generated immediately, especially in terms of poverty reduction and inequality, although the impact on the latter is somewhat less significant.

Find more information on this project's outcomes through this link: [PEP policy brief 96](#)

Pakistan

Preliminary results show that, while both simulations (tax financing and aid financing) have positive effects on the national economy, the channels through which these effects occur are very different. Moreover, contrary to the other two case studies, the impact in terms of welfare or poverty reduction in Pakistan are greater under the tax financing scenario, whereas foreign aid yields more important gains in terms of economic growth.

The key reason is that, while taxes would hit the manufacturing and services sectors, the agriculture sector would be exempt, and thus its output would increase sharply as a result of improved infrastructure. The impact in poverty reduction would be greater as this sector employs 45% of Pakistan's labor force, who would directly benefit from its expansion. Finally, while both scenarios project a slight deterioration in terms of inequality, this is less important under the tax scenario given the same redistributive effects.

Find more information on this project's outcomes through this link: [PEP policy brief 114](#)

Philippines

Preliminary results reveal that increased public investment in infrastructure manifest itself in terms of greater capital accumulation and improved productivity. Indeed, the simulation results suggest that, regardless of the financing mechanism, an increase in public infrastructure investment would not only bring about positive real GDP effects (growth), but also a reduction in poverty and inequality, both in the short- and long-run.

Although the pattern of results is similar in both financing scenarios, it seems that the magnitude of the effects would be greater under foreign aid, due to the absence of higher production taxes that hinder the competitiveness of producers in the economy.

Find more information on this project's outcomes through this link: [PEP policy brief 112](#)

Find all of the initiative's outputs (research reports, presentations, etc.) here: [PEP-AusAID Growth](#)