„What Have We Learned From Three Decades of Research on the Productivity of Public Capital"
by Pedro R.D. Bom & Jenny E. Ligthart

Discussion

Rafał Raciborski, DG ECFIN, European Commission
Pedro’s presentation

• Results of meta-analysis of estimates of the output elasticity of public capital

• A formal econometric tool used: *meta regression*

• Main results:
  - *short-term elasticity* $\sim 0.08$
  - *Long-run elasticity* $\sim 0.12$ (*relevant for modellers*)

• (Some) additional results:
  - Core capital (but not roads) more productive $\sim 0.17$
  - Regionally-supplied capital more productive $\sim 0.19$
  - More recent studies & samples: lower elasticities
Overall assessment

• Paper already published; necessarily well-rounded
• Painstaking job...
• ...and very needed...
• ...but the answer not necessarily definitive
  → Especially when it comes to the exact value of the elasticity
  → Qualitatively the collected evidence is very strong
This discussion

• What do we potentially need to obtain more assurance about the quantitative results?

• A few additional clarification questions

• A few words about another Pedro’s paper, which is also very interesting and policy-relevant
  - „Fiscal Rules and the Intergenerational Welfare Effects of Public Investment“
Limitations

• Only studies which apply the production function approach
  - Important alternative approaches excluded (e.g. VAR, cost functions)

• Other important classes of studies omitted
  - Physical vs. monetary measures of public capital
  - To the extent that public capital investment is made with varying efficiency across countries, this could partly explain country-specific differences...

• The issue of the quality of public capital
Couple of questions (1)

• Core capital has higher elasticity; but not transportation infrastructure
  - A little surprising, but in line with anecdotal evidence (unused airports and empty roads in some countries)
  - When thinking what is left, interpretation of the results becomes less clear-cut (how many sewage treatment plants do you need in a region?)

• Maintenance spending is not in public investment (Romp & de Haan, 2005, 2007)
  - The discrete form of large public investment projects (Fernald, 1999)
Couple of questions (2)

- Do some countries over- or inefficiently invest?
  - Discussion, e.g., in the EU context (regional founds)

- Your Table 3 in the paper presenting country dummies supports the view of country-specific elasticities
  - (BTW, why is the dummy positive for most countries?)
  - Do your country-specific results square with common beliefs?

- Evidence of the public investment/quality of institutions interaction? (Rodriguez-Pose & Garcilazo, 2015; Crescenzi et al., 2015)
Couple of questions (3)

- Your important conclusion: Public capital is likely undersupplied
- Does this conclusion hold unconditionally for all countries (given the country-specific estimates)?
- Interesting exercise: calculate the degree of undersupply of the public capital for various countries
Couple of questions (4)

- Is there a threshold beyond which some types of public capital stop being productive (Fernald, 1999; Kamps, 2005; Becker et al., 2012)?
  - Are we in some countries and for some type of public capital close to a saturation point?
  - Could this fact explain the observed decrease of the elasticity across time?
"Fiscal Rules and the Intergenerational Welfare Effects of Public Investment"

by Pedro R.D. Bom
The Paper

• Durable public investment in the environment of balanced-budget requirements

• Balanced-budget rules impose a cost of public investment on current generations
  – Violated principle of intergenerational equity
  – Political economy considerations
  – Additional efficiency losses if taxes distortionary (via the *wealth effect* )

• Wealth effect: distortionary taxes decrease the value of firms; hence consumption of the old falls
Policy-maker's perspective:

- Very topical (intergenerational inequalities central to the paper)
- Lends strong support to the *golden rule* (Blanchard & Giavazzi, 2004): net public investment should be exempted from the balanced-budget requirements
- Very educational paper!
- Gives a convenient tool to a policy maker
Theoretical contribution

1. Selective tax incidence (only the old taxed) but benefits accrue to everyone (in this OLG framework) or even mostly to the young
   - Useful investment may be not supported by the population

2. When taxes are distortionary (here income taxes), things get worse (wealth effect central)
   - BTW what about other taxes (e.g. consumption tax)?

*Question*: Is the main result more than a sum of effects 1. and 2....? Not well-exposed
Back to the policy-maker's perspective

- A relevant but counterfactual assumption: \textit{constant population}

- In many EU countries populations are shrinking
  - There is a theoretical threshold on the (negative) growth rate of the population such that if population shrinks faster, your results do not hold
  - Reason: when public investment is financed by debt, debt per head of population increases in time...
  - \textbf{Question}: is this effect quantitatively relevant?

- Interesting topic for future exploration
Political economy perspective

• The framework (Bassetto&Sargent's, 2006; Bom, 2016) has strong political economy implications
  - We should observe older voters voting against public investment in countries with balanced-budget requirements

• Do we observe such effects in reality?

• These effects should be stronger in the post-baby boom world (again, the assumptions on the population growth turn out crucial)

• Looks like an interesting paper on its own...
Thank you!