

31 May 2012

Memo

To: GTAP board

From: Joe Francois

Subject: The Public Sector in GTAP

The public sector makes up a substantial share of final demand across countries in the GTAP sector – 17.2 percent on average. This actually understates the public sector, as public sector investment is placed into capital goods production. For example, in the EU, government demand is 20.6 percent of GDP (based on final demand classification). According to Eurostat, public sector investment was another 2.6 percent of GDP. The total therefore is roughly 23.2 percent. This is not an unusual practice. WIOD and EU-KLEMS also lump these investment categories together, while many national statistical agencies do the same thing.

The composition of the two aspects of public spending is quite different. For public investment, most of the expenditure is for construction and heavy machinery. For public sector consumption, most expenditure is on the “public services” sector, with about 95% of public sector final demand mapped to public services. Public services, however, includes not only the public sector, but entities that may or may not be part of the public sector – universities, hospitals, social services, and such. Globally, 2/3 of public services go into public (government) demand. The other 1/3 is sold mostly to households, but also to firms as inputs. The cost structure of the public services sector is also somewhat unusual, as civil service costs are also included in the sector – as such while globally value added is roughly 25% of gross output costs, in the public services sector this is roughly 68%.

The logic for including public investment is as follows (From Statistics Canada):

*Government gross fixed capital formation consists mainly of construction-type expenditures, series F19: for schools, hospitals, waterworks, sewerage systems, roads, harbours, airports and various other capital installations. It also includes outlays for machinery and equipment, series F20, and a small amount of housing, series F18. Federal, provincial and local levels of government are included but the investment spending of government business enterprises is not covered here. The decision to capitalize government investment spending in this revised set of accounts was made on the basis that such assets add to the country's stock of capital and yield a flow of economic services over a period of years into the future. The gradual 'using up' of government fixed capital is reflected in the imputation which is made for depreciation on government assets in the accounts.*

In summary, public spending is split into capital goods (where it is lost in total investment) and into spending on public services (which is mixed with private spending on health, education, and related services).

The current form of the public sector in the database is problematic for analysis of public procurement policy and public investments. We have hidden public investment, and pooled public services with private demand for education and health services. While I recognize it is not practical to investment in changing the basic structure, there might be some ways to work around the limitations and use the data at hand. I suggest some discussion on the following:

- Satellite accounts on public investment expenditures
- Satellite accounts on the public/private split in terms of public services
- A split-comm type application where public services are split into “government” and “private” consumption sectors (two sectors: government public services and private public services) taking advantage of the satellite accounts when available, and otherwise assuming shares from the base data
- A GEMPACK module that utilizes the split public sector, per the previous point, to allow for modeling procurement policy. (Also, maybe some thought on using recent GE/PE modules, combined with a basic GE split per the previous point above, to allow focused modeling for specific products?)
- Some exploration of splitting public and private capital stocks analytically. Essentially we have 10% to 15% of investment expenditures going to public investment – roads, hospitals, etc. We assume all of this goes into private capital formation, and analytically we treat this like capital equipment.

Given the weight placed on procurement in market access negotiations, even a quick fix (split come with weights from the data, and a rudimentary GEMPACK module) would be useful to a number of board members, and the broader community. I realize dealing with this issue also implies costs. I suppose this could be packaged as an extra (like the satellite account licenses) or just distributed as an add-on module.