



What determines public budgets for agricultural growth in the developing world?

26 September 2017

Presenter: Tewodaj Mogues, Senior Research Fellow, IFPRI

Q&A session

Q: Are the public expenditure stats [in the presentation] in real (versus) nominal terms?

A: They are in real terms. Specifically, SPEED data are in constant 2005 purchasing power parity (PPP) dollars. ASTI data are in 2011 PPP dollars.

Q: To what extent is the decrease in Ag R&D just a function of the diminishing returns to investment in R&D? E.g., perhaps we've just gotten to a point, after so many rapid advancements in the past few decades, where the return on an additional dollar of R&D is just lower, so there's fewer incentives to invest in it?

A: The decline in normalized R&D spending (measured using different ratios in the presentation) started decades ago, preceding the time periods of the presented results on marginal returns to R&D spending.

Q: But if you look at absolute levels of agricultural spending there has been a high increase since 2000. We found using the SPEED data that spending more than doubled, which is very impressive. So, it is just that non-agricultural spending even increased more. Same for AgGDP, this has grown also just faster. This is also the case for agricultural R&D intensity: agricultural R&D spending increased over 2000-2014 period, but the AgGDP increased only stronger.

A: Yes, that's correct that absolute levels of expenditures on agriculture and ag. R&D increased. I presented normalized levels in order to reflect the relative support to agriculture versus other sector spending, and measures of spending support to agriculture while taking into account how large or small the agricultural sector is.

Q: I do not understand the graph with shares of countries with agricultural R&D intensity ratios > 1%. If ASTI data is used, there is an issue with country coverages (only 16 in 1984, mostly those with higher intensities / 40 countries in 2011/2014).

A: This is correct, the number of countries included in ASTI data were smaller in older years than in more recent years. I had initially planned to show the intensity of all countries lined up

on a bar chart, with a separate slide for each year, but I instead chose to show the share of countries falling into the >1% intensity group for the time reasons. (*This caveat is now added in the slides posted online.*)

Q: Might the finding of higher returns to Ag R&D than to Ag public expenditures be affected by a lot of bias--given that R&D is more targeted (more selection involved) whereas Ag public expenditures fulfill lots of other purposes and raise welfare in other ways, too?

A: With regard to internal validity, the studies both of total agricultural returns and ag R&D returns try to address these in various ways. In terms of the broader point underlying your remark: It is an interesting observation that spending decisions on a subfunction (e.g. R&D) may be able to be more selective than spending on the function (agriculture). However, if we consider the fact that ag. spending is comprised of several subfunctions—e.g. R&D, extension, subsidies, irrigation, etc.—then returns on total ag spending simply captures the average effects of the different subfunctions. Thinking of it this way, even if we accept the above argument about selectivity of subfunctions, this alone is unlikely to lead to such differences in performance.

As to raising welfare in other ways besides agricultural productivity, the presentation shows the more compelling impacts R&D spending has on measures such as rural income and poverty reduction, compared to total ag. spending's impact on such outcomes. Of course always with the caveat that the set of studies presented (including those not presented here) never include as many scenarios, countries, etc. as one may wish to have.

Q: So, why did AgGDP in SSA increase much more during 2000's despite the fall in Ag R&D spend?

A: While not presented here, other evidence and narratives have pointed to the role of institutional reforms and better governance in many African countries that have contributed to greater economic productivity, including agricultural productivity. This is, for example, elucidated in [“Political Institutions and Economic Growth in Africa’s ‘Renaissance’,”](#) by Robert Bates and Steven Block.

Q: Academically it can be good to separate Agriculture from other sectors, but the reality on the ground that is Agriculture is linked to many sectors (Road infrastructures, education, etc....). What can be a good balance of public investment on Agriculture and other sectors (Road infrastructures, education, etc....) in the context of Africa?

A: This is a good question. It is however much more ambitious to analytically identify an optimal spending *composition*, than to identify relatively high and low marginal returns of different elements in a budget portfolio. The implications of the types of findings presented are that more funds should go to the high return expenditure items, though this does not directly dictate exactly how much should be reallocated from one sector to another. In other words, it points to a general but consistent picture of underinvestment in agricultural technology.

Q: The returns on agricultural spending are affected by the level of physical infrastructure, quality of agricultural labor, etc. - that is by the amount of spending on other complementary sectors. How did the computation of returns to agricultural R&D spending account for these synergetic effects?

A: The expenditures on these other vital activities are controlled for in the analyses. In fact, the returns to these investments are also estimated (and presented). However, most of these studies do not separately capture the “cross-effects”, i.e. for example the impact of road infrastructure spending on the returns to R&D spending.

Q: You are focusing on public spending. How did your econometric analysis address possible crowding out/complementarity between public spending on the one hand and spending by the private sector/donors on the other?

A: In most of the econometric studies presented, any crowding in or out of private sector investments are implicit and not explicitly brought out as findings. Other work has looked at this in the case of public expenditures on fertilizer subsidies crowding out private sector activity. See articles in [this journal special issue](#) of *Agricultural Economics* edited by Thom Jayne and Shahid Rashid. Also, there are studies on Asia that have directly looked at crowding-in and -out of public expenditures in agriculture. Other studies in developing country contexts have analyzed the effect of donor spending on domestic spending in agriculture—thereby identifying to what extent there is aid fungibility (the answer to the latter: there is, to a fair degree). Both types of studies (ag spending crowd in/out; aid fungibility in agriculture) are discussed in the literature review, Mogues, Fan and Benin (2015) “[Public investments in and for agriculture](#)”, *European Journal of Development Research*.

Q: Can the low public investment be complemented by private investment? If yes, where should public expenditure be directed to be more efficient? And where did the private investment be oriented to be more useful?

A: Certain types of public funds allocation are unlikely to be replaced by private investment when public funds fall short. These would be activities with a strong ‘public goods’ character—where many can benefit from the good/ service simultaneously and it is not easy to exclude people from benefitting. The private sector will not have an incentive to make such investments, given it cannot internalize the full gains from such investments. Development of agricultural technology for widely grown staple crops is an example. In turn, activities that have no or limited public goods and externalities characters are areas where the private sector can more usefully step in. All else equal, this is more likely to happen however, where institutional enabling environments prevail (including property rights and rule of law).

Q: I'm wondering if and how you think governments could increase the 'visibility' of (and possibly also address the timing issue?) investments in agriculture, so that public spending is not biased away from them? Obviously, a town hall is more visible, but are there little things that policymakers might do and do not currently do to increase public awareness of the types of ag services they provide and how useful they are? E.g., labeling items, civic education campaigns about what services are available or how much the government has spent, etc? This would let them get political credit for investments in ag.

A: I gave a few quick examples in the presentation, but - especially in the context of ag public services, on which there is much less research than on social sector services - I feel that this is an important area for future research. It would be interesting to analyze what types of visibility creation are more effective, and what institutional environments are more likely to ensure that governments change their actions as a consequence of greater visibility?

Q: Could the external support be more effective if it requires governments to be more responsive to local conditions and marginalized farmers? And to strengthen association and cooperatives that seem to be effective?

A: In my presentation, I shared some questions—by way of “food for thought”—on how external assistance could seek to incentivize better domestic investments and account for the collective action potential of farmers’ associations in their “bargaining” with the public sector, not only with the private sector. Of course, many further conceptual and practical considerations would need to inform design of external assistance in this direction, but it would likely be worth giving this further reflection.

Q: Political decision-maker short-termism argument: Do governments in SSA change so often? Don't we see instead governments in power for a long time?

A: The challenge that emerges is not, per se, the fact that political leaders’ hold on office is time-bound, but rather that this combined with the poor level of information citizens have about what government is doing (e.g. how it is spending public funds) leads leaders to bias resources toward those that result in quickly materializing goods, services and benefits. In other words, short-termism in decisions is not determined by length of term of office per se. Cases of very long duration in power may be the result of two things: leaders winning repeated elections that are contested fairly—in which case, a short-term outlook in the face of citizens’ poor information base is not ruled out—or leaders who can stay in power irrespective of citizens’ political preferences, in which case these leaders may lack the basic incentives to deliver for citizens in the first place. Improving citizens’ information base will help to overcome the misallocations in both of the scenarios—although its potential impact in the latter case is more likely to emerge when where there are “pockets of accountability” (see for example “Solidary Groups, Informal Accountability, and Local Public Goods Provision in Rural China” by Lily Tsai, 2007, in the *American Political Science Review*, and “Making Politics Work for Development: Harnessing Transparency and Citizen Engagement” by Stuti Khemani et al., 2016, World Bank Policy Research Report). It is also the case that parliamentarians, including ministers that have a seat in parliament, may have greater incentives to show visible short-term results to hold onto their positions and thus favor those interventions in budgetary proposals—although their degree of influence over budget allocation (vis-à-vis the influence of executives) is muted in some African countries.

Q: What about tribal/ethnic associations as drivers for what public spending to spend where?

A: There is in fact a large and interesting literature on redistributive politics that examines whom (i.e. which social, ethnic, and religious groups of citizens; political supporters vs. swing voters; etc.) public leaders prioritize in public funds allocations. For example Burgess et al. (2015) (*American Economic Review*), using large panel data from post-independence Kenya, find that ethnic favouritism results in districts that share the president’s ethnicity receive more public goods expenditures, but also that ethnic favouritism dramatically declines during periods of democracy.