Should developing countries constrain resource-income spending?
A quantitative analysis of oil income in Uganda.

Executive summary

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Should a developing country, that finds oil or some other natural resource, constrain the spending of the revenues or should it use the revenues to boost the domestic economy in the short to medium term? This is one of the key questions facing resource-rich developing countries and the answer is debated among policy makers and in the research community. Addressing this question is the purpose of this paper.

A standard recommendation is that a capital-scarce developing country, which does not have full access to borrowing, should use a large share of its resource revenue to boost current spending. This is of course intuitive given that current consumption is low and the return from domestic investments is high. Thus, a "spend-as-you-go" scheme – where all of the oil revenue is spent as it arrives – may seem appropriate to increase spending both on current consumption and domestic capital formation.

On the other hand, a large inflow of income from natural resources often leads to corruption and various negative political effects as politicians, officials and elites try to get part of the resource rents. A closely related problem in resource-rich countries is that large revenues may make spending decisions worse from a social point of view. Earlier research has documented that spending of resource revenues quite often goes toward projects with low returns, motivated by pleasing various political groups or electorates. Furthermore, the capacity to absorb large funds for investment is often insufficient in developing countries, which calls for postponing the domestic usage.

Given these potential negative effects of high spending, it may be important to constrain the usage of the resource revenues. One classic way of doing so is to set up a sovereign wealth fund, where the revenues are invested, and in conjunction implement a simple rule for how much of the fund can be used each year. Such a simple and rigid framework partly ties the hands of politicians by making the breaking of the rule easy to detect for media, international bodies and non-incumbent politicians. In particular, the simplicity of this setup is its main benefit as more elaborate rules rely on forecasting the notoriously unpredictable oil price. The uncertainties in such predictions may undermine transparency in spending decisions, which is likely to create a bias towards spending and unsustainable borrowing by incumbent politicians.

However, a sovereign wealth fund with a spending rule is of course inconsistent with alleviating capital scarcity and low consumption in the short to medium run. It remains an open question whether the loss, of not boosting the domestic economy in the short to medium run, is large or small.

To answer this question, we build a macroeconomic model, which is well suited for a quantitative analysis, and apply it to Uganda that has recently discovered oil and is in the midst of starting production. Our model contains the main macroeconomic features of a developing economy: the decision of whether to invest in private capital or infrastructure; and the decision of whether to consume today or invest for tomorrow. It also features population growth, investment frictions, capital scarcity, borrowing constraints and technical change – features that are central for developing countries.

Perhaps surprisingly, abstracting from any political side effects, we find that using an oil fund along with a fairly strict spending rule appears to entail only a marginal, if any, loss compared to boosting the economy right away. We furthermore find that the loss appears small compared to losses of fairly mild political side effects that may arise as a result of increased oil spending. For instance, if spending the revenues right away creates a lag of structural transformation by even one year, or if it retards annual productivity growth by as little as 0.006 percentage points, then the fund is preferable. This implies that, considering the potential negative political and economic side effects of a drastic increase in oil spending, the case for constructing a sovereign wealth fund along with a spending rule is rather strong.

Our results challenge the common view that the early boost is important and as such contributes to the ongoing and highly active policy debate of how developing countries should use their resource revenues. Our finding of course has a direct policy implication for Uganda: setting up a sovereign wealth fund with a spending constraint is well advised. More generally, for developing countries the conclusion is that getting the political checks and balances right is more important than boosting the economy in the short to medium term.