How Much Does GDP Increase When Public Spending Increases?

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How much does GDP increase when government spending increases? This is a perennial question confronting macroeconomic policy makers—and one that has received more attention as governments have sought appropriate responses to the recent great recession.

Providing empirical evidence on this question is difficult, however, because it requires isolating a source of variation in government spending that is unrelated to contemporaneous macroeconomic shocks. After all, simply observing that government spending increases during economic downturns may lead analysts to mistakenly *underestimate* any positive effect of government spending on output. Conversely, if government spending collapses during recessions, the observed correlation between government spending and output would *overstate* any causal effect of government spending on output. To make progress, it is necessary to find a reason for changes in government spending in a given year that is unrelated to macroeconomic shocks occurring in the same period.

A new paper by Kraay uses a novel loan-level data set covering lending by official creditors to developing country governments to provide new empirical evidence on the short-run effects of government spending on output. Loans from official creditors (primarily multilateral development banks and bilateral aid agencies) are a major source of financing for government spending in developing countries. These loans typically finance public spending projects that take several years to implement, with multiple disbursements linked to the stages of project implementation.

The long disbursement periods for these loans imply that the bulk of government spending financed by official creditors in a given year reflects loan approval decisions made in many previous years, before current-year macroeconomic shocks are known. This provides a source of variation in government spending that is unrelated to current-year economic shocks and can therefore be used to statistically identify the effects of government spending on output.

The data set reports loan-level commitment and disbursement transactions from the World Bank's Debtor Reporting System, covering nearly 60,000 loans over the past 40 years. Because it provides information on the timing of loan approvals and subsequent disbursements, the data set makes it possible to isolate a predetermined component of government spending associated with past loan approvals. This can be used as an instrument to econometrically estimate spending multipliers for a sample of 102 developing countries, where previous evidence on the effects of government spending on output is scarce.

The paper estimates, reasonably precisely, that the one-year government spending multiplier is around 0.4. This implies that an additional dollar of government spending can be expected to increase GDP by about 40 cents on average in the same year. Since government spending itself is a component of GDP, a multiplier less than 1 implies that increases in government spending lead to significant reductions in the other expenditure components of GDP, such as private consumption and investment.

These basic results are subjected to a battery of robustness checks designed to address potential concerns with data quality as well as possible objections to the identifying assumption. While the estimates of the one-year multiplier vary somewhat across these checks, they typically remain in a range from around 0.3 to 0.5. In addition, the large country coverage of the data set makes it feasible to investigate the empirical relevance of a number of potential sources of heterogeneity in multipliers. There is some suggestive evidence that multipliers are larger in recessions, in countries that are relatively less exposed to international trade, and in countries with flexible exchange rate regimes.

The small multipliers estimated in the paper suggest a rather limited output effect of countercyclical responses of government spending in response to economic downturns in developing countries. This finding should be interpreted in light of several qualifications, however.

First, the empirical evidence can support estimates only of the average short-run effects of government spending over the large set of countries and years included in the data set; the actual effects in particular situations might very well be different. Second, the empirical estimates of aggregate spending multipliers should not be thought of as "deep" structural parameters, knowledge of which would be crucial for understanding likely future effects of any given fiscal policy response to an economic downturn.

Finally, the absence of evidence in support of a large spending multiplier does not imply that there is no role for a fiscal response to economic downturns. For example, in many developing countries there is a strong rationale for expanding social protections to the most vulnerable during economic crises, independent of any macroeconomic stimulative effects of such policies.

Aart Kraay. 2012. "*Government Spending Multipliers in Developing Countries: Evidence from Lending by Official Creditors.*" *Policy Research Working Paper* 6099, World Bank, Washington, DC.