

Government Size and Growth: A Rejoinder*

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Abstract: In our 2011 survey of the literature in the *Journal of Economic Surveys* on the effect of government size on economic growth in wealthy countries we find a relatively consistent pattern: An increase in government size by 10 percentage points is associated with a 0.5 to 1 percentage point lower annual growth rate. This conclusion is questioned by Colombier (2014). In this rejoinder we present a rebuttal of Colombier's argument based on a detailed scrutiny of his own statistical evidence and regression results. Furthermore, we note that several new papers that have appeared since our original article was published give support to our main conclusion.

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Colombier (2014) is critical of our survey (Bergh and Henrekson, 2011) of the literature on the effects of government size on economic growth. He also argues that the rebuttal of his paper (Colombier, 2009) by Bergh and Öhrn (2011) is based on a flawed dataset, and that our claim that the literature is close to a consensus is wrong.

We would first like to point out that during the literature search for our survey paper, the Colombier paper was the only one that fit our criteria and did not find a negative relationship between government size and growth. The Colombier paper differed in many ways from other papers in this field, but the author did not help the reader understand which of these differences that were driving the result.

Colombier presents the paper as if it is clearly his use of the robust modified generalized maximum likelihood estimator (what Yohai et al. [1991] call the MM-Estimator) that is responsible for the unusual/non-standard result. But if this were the case, why did Colombier not keep all other choices as close to the standard approach as possible? Instead, we had to evaluate a paper that used a very different estimator, omitted time fixed effects, relied on moving averages rather than five-year periods, had “purified” the investment variable in a way not explained in the paper, controlled for labor force growth rather than the size of the labor force, and lacked several standard control variables completely (such as economic openness).

For the purpose of our survey, merely noting these problematic aspects of the Colombier paper would have been a defensible choice, but we decided to initiate a closer scrutiny of Colombier’s paper. It quickly became clear that the documentation in Colombier’s paper was nowhere near detailed enough to allow for a replication of his results, even after Colombier had been contacted several times. Only at this point did it become clear that the investment variable had been “purified” by Colombier in a way not described in his paper. Furthermore, it was not explained how Colombier had computed the moving averages, which is the point where he is now most critical. For this reason, when Colombier now levels critique against the dataset used by Bergh and Öhrn, the critique falls back on Colombier himself.

We readily admit that it is a bit odd to use the *Journal of Economic Surveys* to discuss a paper published in *Applied Economics*. Bergh and Öhrn (2011) was sent to *Applied Economics* as a

comment, but was rejected without inviting a resubmission.¹ So, for the sake of argument, let us assume that Colombier is right in that his result is driven by the use of the MM-estimator, rather than the omission of time fixed effects or any of the other unusual/non-standard aspects of his paper. Importantly, this would still not change the conclusion of our survey.

Robust estimators work by including the atypical observations in the regression framework and assigning them less weight in the estimation. In some cases, this would be desirable – but not always. If atypical observations are a main reason why several studies have found a negative relationship between government size and growth, the obtained estimate is not obviously better when less weight is put on these observations?

The ultimate test of our conclusion in the survey—that the literature is close to a consensus—is arguably to check how the literature on the topic has developed since our paper was published. It should be noted that Colombier’s reading of the literature is, to put it mildly, disingenuous. Colombier (2009) claimed that “the majority of recent studies suggest no growth effects of government size” (p. 910), and mentioned three studies not included in our survey to support this claim (Kneller et al., 1999, Bleaney et al., 2001, and Bassanini et al., 2001). However, as shown by Bergh and Öhrn (2011), the first two studied disaggregated taxes and expenditure, not aggregate government size, while the third one did study the issue at stake – but found the opposite of what Colombier claimed.²

Colombier (2014) refers instead to Wu et al. (2010) and Wahab (2011). Importantly, these do not try to get at the long run effect of government size on growth, but rather deal with the short-run growth effects of different types of government spending (and thus do not examine taxes). Even so, Colombier is clearly wrong about the Wahab study, where most results concern a sample of 97 developed and developing countries and where the main result is that spending in recessions can boost growth. For the relevant specification (symmetric panel regression results, with time and country fixed effects) the authors conclude (p. 584):

In conclusion, evidence from symmetric panel regressions suggests that government spending has negative output growth effects in OECD countries but positive output growth effects in non-OECD countries.

¹ The rejection was perhaps not entirely surprising, given the downward trend in publication of critical commentary in economics journals since—at least—the 1980s, noted and discussed by (among others) Coelho et al. (2005) and Laband et al. (2002).

² “The hypothesis that the size of government has an impact on growth receives some qualified support. [...] The overall tax burden is estimated to have a negative impact on output per capita” (Bassanini et al., 2001, p. 28–29). While the study does support our conclusion, it was omitted from our survey because it not published in a peer-reviewed journal.

When it comes to the issue at stake, research has progressed beyond arguing over the sign of the partial correlation between aggregate government size and growth. Some papers have examined heterogeneity in the relationship; others have looked in more detail at different types of taxes and expenditure—which is exactly the direction we were hoping for when we wrote the survey. To illustrate our point, we note that several new papers and working papers have found some interesting results:

Oto-Peralías and Romero-Ávila (2013) confirm a negative growth effect of government size and finds that the effect is stronger in countries with lower institutional quality.

Berggren et al. (2014) finds that government legitimacy exacerbates the negative growth effect of government size in the long run.

Afonso and Jalles (2013) find that the adverse impact on growth from government size can be mitigated using fiscal rules such as the Stability and Growth Pact in the EU.

Afonso and Jalles (2014) confirm that government revenue has a negative impact on growth in the OECD, a result they find to be driven by taxes on income. On the expenditure side, they find adverse growth effects from public sector wages, interest payments, subsidies and government consumption, while spending on education and health boosts growth. Notably, the survey by Gemmell and Au (2013) manages to miss our survey published two years before, as well as some of the key papers in the field, but still arrives at the consensus view, that there are negative output effects from higher tax rates (but positive growth effects from some categories of public expenditures).

Many of these findings are very similar to slightly older studies that we mentioned in our survey, such as Widmalm (2001) and Romero-Avila and Strauch (2008). In the concluding section of our survey we wrote (p. 891):

Studies that disaggregate taxes and expenditure typically seem to find that if the policy objective is economic growth there are two consequences: (1) direct taxes on income are worse than indirect taxes, and (2) social transfers are worse than public expenditure on investment including human capital, which, if anything, increases growth.

In short, the conclusion in our 2011 survey of the literature on the effect of government size and on economic growth in wealthy countries remains: There is a relatively consistent pattern, not only regarding the sign of the effect but also its approximate magnitude. The most recent

studies, using the best available methods and the most comprehensive datasets, conclude that an increase in government size by 10 percentage points is associated with a 0.5 to 1 percentage point lower annual growth rate.

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