Discussion of "Austerity in the Aftermath of the Great Recession" by C. House, C. Proebsting, and L. Tesar

Bartosz Maćkowiak
ECB and CEPR

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Summary of the paper

- The authors forecast GDP and government purchases conditional on the actual path of GDP, in the period 2010-2014.
  - In a sample of 29 countries including the U.S., countries in the E.U., Norway, and Switzerland.

- In the cross-section of countries, the forecast errors about Y are positively related to the forecast errors about G, and the multiplier is about 2.
  - There is also a systematic relationship between the surprises about G and the surprises about other variables.

- A calibrated DSGE model replicates the relationships in the data.
  - The model is rich and impressive.
  - According to the model, the relationships in the data are driven, essentially, by negative shocks to government purchases.
  - The history of Europe would have been very different in the absence of the austerity: per capita GDP would be *much* higher, and the debt-to-GDP ratios in the GIIPS countries would be *lower*.

"We borrow (...) from Blanchard and Leigh (2013)"

- Blanchard and Leigh (2013) consider a cross-country regression of the forecast errors about Y on the forecasts of fiscal adjustment:

  forecast error about $\Delta Y_{i,t+1|t}$ = α + β(forecast of $\Delta F_{i,t+1|t}$) + $\varepsilon_{i,t+1}$

  - The variable *F* is the structural government budget balance. The forecasts are for the period 2009-2012.
  - The regressor is based on information known at time *t*, and hence independent of information that arrived at time *t+1*.
  - Blanchard and Leigh report that the forecasts of fiscal adjustment are uncorrelated with the forecast errors about fiscal adjustment.
  - Assume the forecasters thought the multiplier was 0.5. The finding that β ≈ -1.1 implies that the multiplier was 1.6.

- This paper proceeds differently: the forecast errors about Y are regressed on the *forecast errors* about G.

  - To recover the cross-sectional multiplier, the authors do not need to make an assumption concerning what the forecasters thought.

Interpreting the econometric findings

- It is plausible that Y responds to G, but it is also plausible that G reacts to Y and that Y and G respond to other variables.
  - To identify the causal effect of G on Y, we look for variation in G orthogonal to the state of the economy ("shocks to government purchases").

- Of course, the authors are aware of the identification problem.
  - Their forecasts of G condition on the actual path of Y.
  - They make modest claims, e.g., by describing the econometric evidence as coming from "reduced-form forecasting regressions."

- Nevertheless, one wonders about the interpretation of the econometric findings.
  - Could it be that both G and Y respond to a third variable, e.g., to government bond yields or to the level of public debt relative to the fiscal limit?
  - The authors use the level of public debt as a control variable in the cross-country regressions, but theory suggests it is the level of public debt relative to a country-specific fiscal limit that matters.

An example with bond yields

- While the authors' approach is more ambitious, I find it useful of think of what they do in terms of the following VAR for each country *i*:

$$\begin{bmatrix} a_{11} & 0 \\ a_{21} & a_{22} \end{bmatrix} \begin{bmatrix} Y_{it} \\ G_{it} \end{bmatrix} = B(L) \begin{bmatrix} Y_{i,t-1} \\ G_{i,t-1} \end{bmatrix} + u_{it}$$

  - The Choleski identification allows for contemporaneous feedback from Y to G.

- But suppose the correct model is

$$\begin{bmatrix} a_{11} & a_{12} & 0 \\ a_{21} & a_{22} & 0 \\ a_{31} & a_{32} & a_{33} \end{bmatrix} \begin{bmatrix} Y_{it} \\ X_{it} \\ G_{it} \end{bmatrix} = B(L) \begin{bmatrix} Y_{i,t-1} \\ X_{i,t-1} \\ G_{i,t-1} \end{bmatrix} + u_{it}$$

where X is the government bond yield.

  - Shocks to X affect contemporaneously Y and G.
  - This model will, in general, attribute a smaller fraction of the variation in Y to shocks to G than the bivariate model.

Relationships in the data vs. DSGE models

- Let's put the identification problem aside. It is legitimate to ask if a DSGE model can replicate a reduced-form relationship in the data.

- Abstracting from the identification problem, we can think of the authors as asking if their DSGE model can mimic the positive correlation between G and Y in the data.

- The model can replicate this relationship, and it interprets the relationship as being caused by exogenous variation in G.

- It would be interesting to give an alternative causal story a chance.
  - In the DSGE, government purchases follow an exogenous process.
  - What if G was set according to a reaction function featuring a response of G to Y, and to other variables like bond yields?
  - Could that alternative model, driven by shocks other than shocks to government purchases, match the positive correlation between G and Y in the data?
  - If successful in mimicking the data, that model could imply that changing the reaction function (a different response of G to the state of the economy) would have strong effects on Y.