Discussion of Corsetti, Meyer and Muller, "What Determines Government Spending Multipliers?"

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Motivation

- Proposal: determine the degree to which "multiplier effect" of government purchases depends on other conditions

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- Issue of particular current relevance: want to know likely effects of "stimulus spending" during crisis, but available estimates mainly for quite different circumstances

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- Few exceptions:
  - Ilzetzki *et al.* (2009): panel regressions for groups of countries with different characteristics (e.g. exch rate regime)
  - Barro and Redlick (2009): regress on $\Delta militarypurch \cdot unemployment$ as well as $\Delta militarypurch$
  - Almunia *et al.* (2009), Gordon and Krenn (2010): estimate only for Depression period

The Method Used Here

- **Step 1:** construct a time series of fiscal shocks $\{\epsilon_{i,t}\}$ for each of a panel of countries
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- **Step 2:** panel regressions of macro variables on own lags, country fixed effects (and country-specific trends), and
  - fiscal shocks $\epsilon_{i,t}$ (and lags)
  - conditioning variables $d_{i,t}$ (and lags)
  - interaction terms $g_{i,t} \cdot \epsilon_{i,t}$ (and lags)

  — similar to Barro and Redlick (2009), but different approach to identifying fiscal shocks

Identification of Fiscal Shocks

- For each country, regress government consumption $g_{i,t}$ on
  - lags $g_{i,t-j}$
  - lags of output $y_{i,t-j}$
  - lagged index of leading indicators cli_{t-1}

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- Familiar approach in SVAR literature (Blanchard-Perotti, . . .), but subject to familiar critique

Identification of Fiscal Shocks

- Potential problems with "shocks" identified this way:
  - may be effects of economic developments on gov't spending, within the period

    — unforecastable part of $g_{i,t}$ may include endogenous components

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    — a bigger worry, given annual data here, unlike Blanchard-Perotti
  - people may have advance news of (likely) changes in gov't spending, before the spending actually occurs

    — so fiscal shock need not be orthogonal to lagged variables

Advance News of Fiscal Changes

- May be a problem, even with annual data
- Example: estimates of Cogan *et al.* (2009) of government purchases under stimulus package enacted February 2009

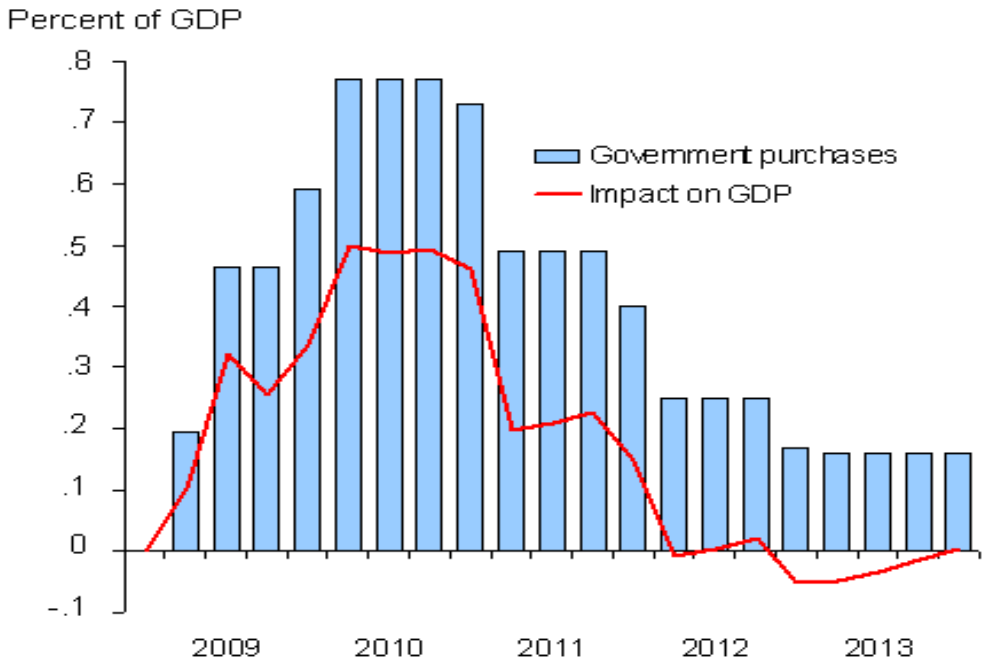

Figure 2. Estimated Output Effects of Government Purchases in the February 2009 Stimulus Legislation. (Government purchases equal federal purchases plus 60 percent of transfers to state and local governments for purchases of goods and services)

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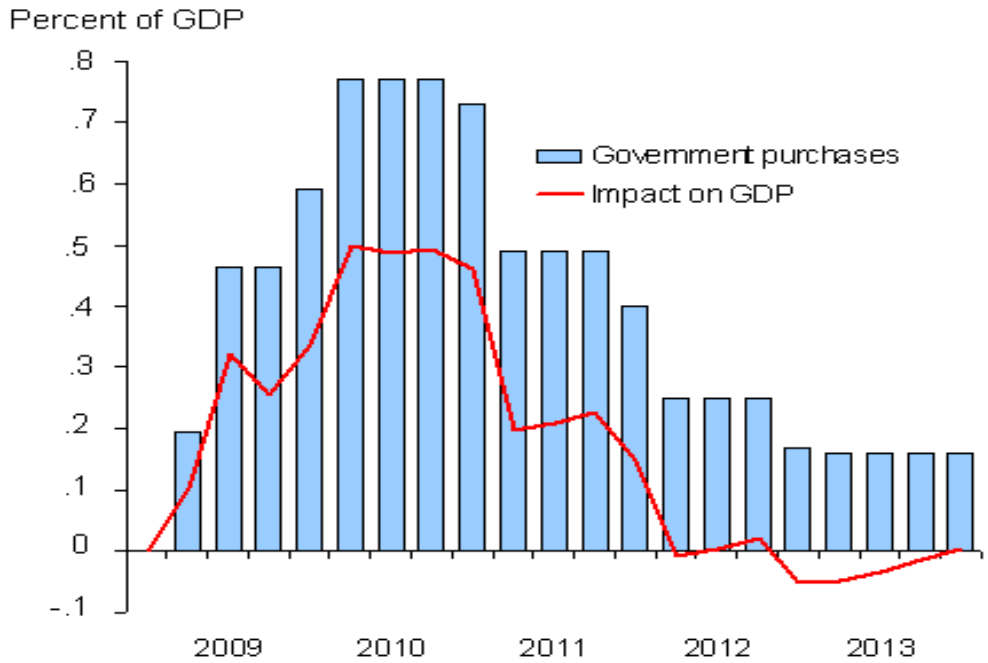

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- Can also be advance news for many reasons other than legislation already passed (e.g., change in party in power)

Advance News of Fiscal Changes

- Why is this a problem?
  - not just because there may be fiscal shocks that aren't included in the unforecastable component of $g_{i,t}$
  - also a reason why equation residual $\epsilon_{i,t}$ may be correlated with shocks other than true fiscal policy shocks

Advance News of Fiscal Changes

- Example: suppose $\{y_t, g_t\}$ evolve according to

$$y_t = \rho_y y_{t-1} + v_t + \nu_t$$

$$g_t = \rho_g g_{t-1} + u_t$$

where

  - u_t, v_t, ν_t are each i.i.d. normally distributed r.v. with mean zero
  - all distributed independently of (y_{t-1}, g_{t-1})
  - u_t, v_t are known at $t-1$, ν_t only at t

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- Suppose "leading indicator" forecasts

$$\begin{aligned} cli_t &= E_t[y_{t+1} - \lambda g_{t+1}] \\ &= (\rho_y y_t + v_{t+1}) - \lambda(\rho_g g_t + u_{t+1}) \end{aligned}$$

Advance News of Fiscal Changes

- In this example, the regression residual (asymptotically) identifies

$$\begin{aligned}
\epsilon_t &= g_t - E\left[g_t \middle| g_{t-1}, y_{t-1}, cli_{t-1}\right] \\
&= u_t - E\left[u_t \middle| v_t - \lambda u_t\right] \\
&= \left(\frac{\sigma_v^2}{\sigma_v^2 + \lambda^2 \sigma_u^2}\right) u_t + \left(\frac{\lambda \sigma_u^2}{\sigma_v^2 + \lambda^2 \sigma_u^2}\right) v_t
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\end{aligned}$$

- Because positively correlated with v_t, authors' method would find positive effect of g shock on output

  — even though in example, true fiscal shock (u_t) has no effect on output

Identification of Fiscal Shocks

- What solution?
- Need to use a $g_{i,t}$ equation that represents structural equation for gov't cons

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- In above example: would get correct result if instead omitted cli_{t-1} from the list of regressors

  — more generally: inclusion of leading indicators is problematic, because not plausibly structural, yet likely to incorporate news about determinants of future g (mixed with other things)

Results

- Consequences of exchange rate regime:
  - stronger output increase, less crowding out of I if exch rate peg
    — consistent with standard models: expect more monetary accommodation under peg
    — why: under floating, interest rates raised to stem inflationary impact, but this appreciates exch rate

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- Another possible interpretation: these are not pure fiscal shocks?

  — in fact, the mixture of shocks captured by the residual need not be the same in the case of the peg and the floating rate

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- Would be desirable to discriminate more finely:
  - is it really whether interest rates reach lower bound that matters?
  - is there sharp difference in interest-rate response between crisis/non-crisis cases?
  - is it perhaps instead the degree of economic slack that matters?
  - or the degree of impairment of financial sector or of household/firm balance sheets?

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- Important methodological questions remain to be addressed

  — especially with regard to identification of fiscal shocks