

Preliminary: The effects of fiscal policy in the short run

(Fiscal policy: government spending).

Fiscal policy **unlike monetary policy**: no consensus even on basic signs of macroeconomic effects.

Two views:

- Neoclassical: when $G \uparrow$, $Y \uparrow$ but $C \downarrow$ and $W \downarrow$ (wealth effect)
- Neokeynesian: when $G \uparrow$, $Y \uparrow$, $C \uparrow$ and $W \uparrow$ (demand effect: nominal rigidities + credit constraints)

Empirics: large differences in size and structures of budgets of industrialized and EM economies, but conceptually key **problem** is the same in both: how to **identify exogenous** changes to fiscal policy...

... and no reason why **methods** should be different.

Time series methods: Structural **Vector Autoregressions** or **event-like** approach exploiting major episodes of military buildups.

First method: consistent with **neoclassical** approach

Second method: consistent with **neoclassical** approach

EMEs: same econometric problems (basically **reverse causation**). **Cannot avoid them**, but often not well understood. Often do not address problem of reverse causation from GDP to government spending => do not identify fiscal shocks properly (technically, simple Choleski orthogonalization).

=> Several studies on EMEs showing **positive “effect” of taxes on GDP**.

Big problem: lack of reliable quarterly data on government budget

Negative message, but **should not be ignored**.

Long run effects of fiscal policy.

Governments want to know if their “**stance**” is **appropriate for the long run**. Big part of the answer is the **long run effects** of fiscal policy. Ex: effects of public capital (in an economic sense)

Two approaches

1) Cross-sectional or panel regressions on country level data

Usual problems (basically, here too it is **difficult to find instruments**, and estimates of rates of return are not robust)

2) Time series

For EMEs, often based on **cointegration analysis** (again, no attempt at identification): tells us nothing about causality

SVAR: typically find **much lower rates of return**

Other caveats to enthusiasm for public infrastructure: **political economy of public infrastructure** (Tanzi and Davoodi, Knack and Keefer, Easterly)

The cyclical behavior of fiscal policy in EMEs

Stylized fact: in industrialized countries fiscal policy is **stabilizing** (budget balance is procyclical, spending is countercyclical); in EMEs it is the opposite

- particularly pronounced during downturns
- mostly from spending

However, stylized fact not really well understood: might depend on differences in shocks hitting industrialized countries and EMEs (Gopinath, Rigobon)

Positive explanations:

- politico-economic explanations
- “hidden deficit”
- credit constraints

Optimal cyclical behavior of fiscal policy.

Depends on (among other things)

- the types of shocks agents face, and their persistence
- the types of assets different agents have access to,
- the demand effects (or absence thereof) of government spending
- the commitment technology available to the government
- the tax instruments available to the government
- the characteristics of the labor market
- the role of nominal and real rigidities

Consider first three issues. Depending on whether **neokeynesian** or **neoclassical** effects of fiscal policy, can have optimal countercyclical or procyclical fiscal policy.

Individuals are credit constraints: if shock is **temporary**, government should do consumption smoothing on behalf of individuals => optimal countercyclical fiscal policy (e.g., increase transfers in a recession and borrow). If shock is **permanent**, optimal procyclical fiscal policy (Aguiar and Gopinath).

Now suppose firms are credit constrained. In recession, cannot borrow => recessions have persistent effects on capital accumulation => if government spending has **neokeynesian demand effects**, can be optimal to increase it to shift out demand for goods and increase profits => **optimal countercyclical fiscal policy** (Aghion et al).

But if **neoclassical effects** of government spending, might be optimal to reduce it, to allow for expansion of tradables sector (Blanchard) => **optimal fiscal policy can be procyclical.**

In a **sudden stop**, **value of collateral** by domestic firms falls => less incentives to accumulate foreign liquidity by investors => government should reduce deficit financed by domestic agents, even better should reduce spending (crowding out argument, Caballero and Krishnamurty) => **optimal procyclical fiscal policy**

Evidence: crowding out of private investment most severe during crises.

Insurance and self-insurance

If optimal for government to have countercyclical fiscal policy, what can a government do?

Ideally, would like to **insure** its stream of revenues, to insulate them from shocks to economy. But difficult, not enough supply of necessary instruments.

Can **borrow** in recessions. But during sudden stops external credit dries up even to governments

But governments can always **self-insure**: accumulate assets in good times, and draw them down in bad times.

One view: self-insurance is irrelevant: most people would not self-insure against chance of car collision.

Key question: are **some institutional setups more conducive** to viable self-insurance?

No panacea, but can try to give an answer.

Cash balance rules

Limit of the cash deficit (SGP).

Three problems:

- 1) imply an (often arbitrary) ratio of debt/GDP (0 if limit to cash deficit is 0)
- 2) can **worsen net worth** of government (Easterly et al.): charge all cost of investment to first year, and public investment politically easier to cut in a recession
- 3) can **induce procyclical** behavior of fiscal policy

2) but can go either way: **can help enhance creditworthiness** of country,

3) => hence, although **conditionally on a crisis occurring** it induces procyclical behavior of fiscal policy, **ex ante** it can reduce it.

Also, **can be as countercyclical as desired**: if based on **cyclically adjusted** deficit, and enough automatic stabilizers in place.

Caveat: cyclical adjustment is controversial and difficult to do (output gap measured (?) with a **lag**; commodity prices observed in real time, but their **stochastic process is difficult to characterize**.

Empirical evidence on rules: difficult.

But in Europe, **decline in public investment predates SGP**.

Golden Rule (Blanchard – Giavazzi):

To mitigate problem 2), limit on operating deficit => can finance net investment with debt.

Asymptotically, **debt = capital stock, regardless of social rate of return** on government investment

But **does not ensure solvency**, i.e. does not ensure that NPV of surpluses = debt: only if rate of return that can be appropriated by government (via fees or taxes) = real interest rate.

Unlikely for most types of investment

Does not mean that an investment should not be undertaken.

Permanent balance rule (Buiter and Grafe)

Average tax rate at level that ensures solvency. Solves problem of solvency, and some countercyclicality built in.

Compromise rule (Mints and Smart)

Only some of truly self-liquidating assets can be financed with debt

Pros and cons

Cash rules: incentives to transfers investment off-budget => reduce transparency

Golden Rule: incentive to **redefine current spending as investment** in an economic sense => reduce transparency

Also, need some form of **accrual accounting**: in principle, superior, in practice, open to manipulation.

Permanent balance rule and compromise rule: even more open to manipulation, because **need to estimate effects on future GDP and tax revenues**.

Underlying dilemma: in principle, all agree that should look at **true net worth of government** => include **all** assets and liabilities, including NPV of future tax revenues, pensions and wages. But bound to be enormously **controversial and uncertain, and open to political manipulation.**

What do **markets look at**? Debt ratios and deficits, or net worth?

Example: what would have happened if Indonesia had had a Golden Rule, and in the midst of the **crisis it had continued spending cheerfully on public infrastructure?**

The Chilean fiscal rule

1 percent cyclically adjusted deficit, based on price of copper. Reference price of copper determined by a panel of experts.

Held up very well so far, and withstood early criticism:

- 1) Can be manipulated? But estimates of copper prices have been very conservative (2003/04). And change in 2006 well motivated.
- 2) Not transparent and not easy to communicate? But the opposite is true: well understood by politicians, and now virtually uncontroversial.

Stabilization funds

A stabilization fund is just **part of the optimal design of fiscal policy**: if the rest of fiscal policy undoes what the stabilization fund has achieved, there is no benefit from the latter.

⇒ Stabilization funds are effective only if **accompanied by fiscal rules**

...

⇒ ...and clear divestiture rules: **markets must be told clearly** if observed increase in spending is outcome of the fund's rules or a departure from it.

Example: Norwegian stabilization fund. Cyclically adjusted, non-oil operating deficit set equal to the returns from the oil fund, using a long run rate of return of 4 percent fund.

Four purposes, typical of all stabilization funds of commodity producing countries.

- **stabilize revenues**
- **fiscal discipline.**
- **preserves total oil wealth of the country** (underground and above the ground), thus achieving intergenerational fairness.
- if the fund wealth is invested in foreign assets, it helps mitigate the **Dutch disease problem.**

In developing countries, that lack public infrastructure, the third role could be downgraded, by **spending more than the average rate of return.** But the basic principle applies.

Focuses on the cyclically adjusted budget

Nigerian stabilization fund: effectively, it **lacked a fiscal rule** because no agreement from states.

But **political economy of rules and self insurance** is hard. Standard view: governments do not like them because impose procyclical behavior in recessions.

But **real political problem is in good times**: politically difficult to justify not spending windfall revenues on health, spending and education.

Conclusions?

Estimating effects of fiscal policy in EMEs

No estimate is better than patently wrong estimates.

Effects of public capital

Cross-section regressions have probably said what they had to say

- **Project appraisal.**
- **Maintenance** (politically less visible).

Composition of fiscal policy?

In principle, important. In practice, we **don't know enough from macro** point of view => mostly **distributional issue**

Optimal cyclical behavior of fiscal policy

The one area where **theoretical clarification** would be useful: role of credit and financial markets imperfection, for which type of agents.

Does observed procyclicality matter **mostly in times of crisis**? We do not know

Differences between **oil and commodity producing countries** and countries that try to become “**debt-tolerant**”?

Rules

Think twice **before dismissing cash rules** in favor of Golden Rule or other more sophisticated rules.

While intellectually more satisfactory, much more open to political manipulation and less transparent.

And Golden Rule is **dangerous in a sudden stop**.

But rules must be on **cyclically adjusted budget**.

Stabilization funds **must be part of the answer**, but must be **accompanied by a rule** otherwise easy to undo them.

Cyclically adjusted rule with stabilization fund can be major improvement. But no illusion: can be undone by any government.