Discussion of

Fiscal Policy in Debt Constrained Economies

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This paper

- Frequent fiscal crises of SOE
  - Increase in debt that hits constraint: Argentina, Greece, Ireland, Portugal, Spain?
  - Rational response to low world interest rates?

- Characterize fiscal policy in small open economy with
  - impatience: party today, pay later!
    - * eventually, drive consumption to zero
  - sovereign and private default risk: not credible!

- Main result
  - in LR, labor taxes → 0 (front-loading)
  - in LR, positive capital tax
  - contrast with canonical Ramsey framework (full commitment)
    - * zero capital taxes and “smooth” labor taxes
Setup

- Small Open Economy
- Households: maximize

\[ U = \sum_{t=0}^{\infty} \beta^t u(c_t, n_t) \]

with \( \beta R < 1 \) s.t.
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- “residency” based tax rate \( \phi_k^t \) on capital income (financial assets and capital)
- budget constraint (BC)

\[ \sum_{t=0}^{\infty} p_t(c_t - \omega_t \cdot n_t - T_t) \leq a_0 \]

- potential participation constraint (PC)

\[ V_t(\{u(c_s, n_s)\}_{s=t}^{\infty} \mid \{u(\bar{c}_s, \bar{n}_s)\}_{s=t}^{\infty}) \geq 0 \]
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- Firms: profit-maximizers, factor taxes \( \tau_t^n, \tau_t^k \)
- Government: funds expenses \( g_t \), s.t.

- BC:

\[ \sum_{t=0}^{\infty} q_t (g_t + T_t - \tau_t^n \omega_t n_t - \tau_t^k r_t^k k_t - \phi_t^k r_t \frac{a_t}{1 + (1 - \phi_t^k) r_t}) \leq -b_0 \]

- potential PC:

\[ W_t(\{u_s\}_{s=t}^{\infty}, \{k_s\}_{s=t}^{\infty}) \geq 0 \]
Equilibrium (only HH participation constraint)

- Equilibrium: prices, taxes, transfers, quantities \( \{c_t, n_t, k_t\} \) s.t.
  
  - \( \{c_t, n_t\} \) solves household problem, \( \{n_t, k_t\} \) solves firm problem
  
  - government BC holds

  - economy resource constraint holds: \( \sum_{t=0}^{\infty} q_t \left( c_t + g_t + (r^* + \delta)k_t - F(k_t, n_t) \right) \leq A_0 \)

- Household optimization:

  \[ B^t \Gamma_t u_c(c_t, n_t) = \theta p_t \quad \text{and} \quad B^t \Gamma_t u_n(c_t, n_t) = \theta p_t \omega_t \]

  where \( \theta \) is multiplier on BC and \( \Gamma_t = 1 + \sum_{s=0}^{t} \beta^{s-t} \gamma_s \frac{\partial V_s}{\partial u_t} \)
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- Key: consider household PC binds
  - government can set \( \phi_t^k \) to make them at least indifferent (can always rebate this lump-sum)
  - hence, \( \phi_t^k \neq 0 \)

- In any case, irrelevant:
  - with commitment, government can discipline private sector
Equilibrium (only government participation constraint)

- Efficient allocation: CE + maximize time 0 household utility
- Changes in $c_t, n_t, k_t$: relax/tighten sequence of PC constraints ($W_t$)
- Labor wedge:
  \[ 1 + \tau_t^n = \frac{F_n(k_t, n_t) \cdot u_c(c_t, n_t)}{-u_n(c_t, n_t)} \]
- Replacing FOCs:
  \[ 1 + \tau_t^n = \frac{1 + \eta \left(1 + \frac{u_{cc}c_t + u_{cn}n_t}{u_c}\right) + \sum_{t=0}^{t} \beta^{s-t} \lambda_s \frac{\partial W_s}{\partial u_t}}{1 + \eta \left(1 + \frac{u_{cn}c_t + u_{nn}n_t}{u_c}\right) + \sum_{t=0}^{t} \beta^{s-t} \lambda_s \frac{\partial W_s}{\partial u_t}} \]
  - If \( \sum_{t=0}^{t} \beta^{s-t} \lambda_s \frac{\partial W_s}{\partial u_t} \) grows without bounds \( \Rightarrow \) \( \tau_t^n = 0 \)
Main result (II)

- If allocation satisfies (i) $\liminf_{t \to \infty} c_t > 0$, (ii) $\limsup_{t \to \infty} n_t < \bar{n}$ and (iii) $\beta \cdot R^* < 1$, then $\lim_{t \to \infty} \tau^n_t = 0$

- Formally: FOC for consumption

$$\beta^t \cdot \prod_{s=1}^{t} R^* \cdot \left[ 1 + \eta \left( 1 + \frac{u_{cc}c_t + u_{cn}n_t}{u_c} \right) + \sum_{i=0}^{t} \beta^{s-t} \lambda_s \frac{\partial W_s}{\partial u_t} \right] = \frac{\mu}{u_c(c_t, n_t)}$$

- Intuition:
  - tax distortions front-loaded
    * borrow to finance consumption and leisure today
    * need to maximize debt-servicing capacity in LR: no distortions
    * fiscal surplus in transition: save today to borrow today
  - in fact: efficient allocation maximizes aggregate debt in s.s.
    * but let private agents hold debt

- In example: also tax on borrowing $\phi^k_t$
  - prevent household borrowing from leading to non-enforcement
Comments

- Very interesting paper: ongoing work
  - household PC: $\phi^k_i \neq 0$
    * very nice, but how relevant?
  - government PC
    * $\tau^n_t = 0$
    * $\phi^k_i \neq 0$: standard overborrowing (Broner-Ventura, Wright)

- Why drop interaction of PCs? I would explore it a bit more
  - Government commitment sustains private borrowing
  - Is the opposite true to some extent?
    * Does overall borrowing depend on slack constraint?
      - $V$ could capture some low-frequency features (court system, institutional framework, etc...)
      - $W$ could capture standard strategic enforcement
    * Gennaioli, Martin, Rossi (2010), Sandleris (2010)
Comments (II)

- Can we use the model to evaluate real-world fiscal policy?
  - government should run surpluses and accumulate assets...
  - argentina, greece, portugal, spain?

- In model: no uncertainty
  - Don’t think general message would change
  - But no need for taxes to be monotonically decreasing ex-post
    - Maybe expect high growth....wrongly!
    - Maybe expect EU bailout...wrongly?
    - Maybe banking system bailout....

- Connection with reserve accumulation literature
  - Role of precautionary savings in uncertain environment
    - Jeanne-Ranciere, Durdu et al., Alfaro-Kanczuk
  - This paper might have something to say about it
• Is this (still) a good model to think about the fiscal policy of small, open economies?

**International Reserves as a Share of GDP, 1980-2006**

Source: Authors’ computations based on International Financial Statistics and World Development Indicators. Note: For each country group, the data refer to unweighted cross-country averages.