Optimal Cooperative Taxation in the Global Economy

V. V. Chari, Juan Pablo Nicolini & Pedro Teles

Discussion by Franck Portier
University College London

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Introduction

Very rich paper
I. A 2-country economy

A. Exchange with C, Lbs be, and trade terms

B. Cooperative Economy

Lemma 2: Exchange rate adjustment

- Take a competitive eq.
- \( P_t > 0 \) and take same demand and supply terms.
- Then, \( t, s \) are such that \( t = t, s = s \)

(With appropriate idea of internal transfers)

II. Alternate Implementations

A. Taxes, no corporate income and avoid returns

- \( \text{LIT}, \text{LIT}, \text{LIT} \), no taxes

B. Assume that VAT and LI tax

- \( \text{LIT}, \text{LIT}, \text{LIT} \), no taxes

C. VAT with no BA

- \( \text{LIT}, \text{LIT}, \text{LIT} \), no taxes

D. Liberal symmetry

- \( \text{LIT}, \text{LIT}, \text{LIT} \), no taxes

Lemma 1: If \( t, s \) are such that \( t = t, s = s \), then \( 
\frac{1}{t} - t = \frac{1}{s} - s \) for all \( s \).

(Also: \( s > t \) implies \( t' > t \).)

III. Remarks on the generality of results

- Step 2 applies to many models of IT (with or without BA).

- Non linear, no taxation

- Flexible model, P8: No linear returns satisfy perfect efficiency

- For trade and investment capital mobility are efficient

Conclusion remarks
Roadmap

1. Summarizing the results
2. Comment
Roadmap

1. **Summarizing the results**
2. **Comment**
Summarizing the results

Environment

- Two-country economy (country 1 and country 2)
- Dynamic economy
- $z_{ij} : i = \text{location of production, } j = \text{location of use.}$
- $u(c, n) + h(g)$
- Production of intermediate goods in country $i$: $y_{i1} + y_{i2} = F(k_i, n_i)$
- Final good: $c_i + g_i + x_i \leq G(y_{1i}, y_{2i})$
- Representative agent in each economy (Ramsey) or heterogeneity in labor endowment
- (I will not talk about the Mirrleesian extension)
Summarizing the results

Environment

- Various taxes:
  - CT: Consumption Tax
  - LIT: Labor Income Tax
  - TT: Trade Tax (export and import taxes)
  - IWT: Initial Wealth Tax
  - CIT: Corporate Income Tax
  - ART: Asset Return Tax (residence based, all assets taxed the same way)
  - BA VAT: Border-Adjusted Value-Added Tax (firms do not pay VAT on exports, and do not deduct VAT on imports)
  - NoBA VAT: Value-Added Tax with No Border-Adjustment
Summarizing the results

- Four more specific features
  1. *Cooperative* Ramsey equilibrium
  2. Policies are restricted to leave the agents a value of initial wealth *in utility terms* of $W_i$
  3. Transfers are allowed between Governments.
  4. Full access to financial markets, perfect competition.
Summarizing the results
A set of non-trivial but intuitive main results

Result 1: With LIT, CT and TT, \textit{Ramsey} equilibria satisfy production efficiency \(\Rightarrow\) do not use TT (and transfers between countries are needed).
\(\Rightarrow\) Separation between Public Finance and International Trade

Result 2: No asymptotical intertemporal distortion (i.e. no ART) if \textit{Ramsey} equilibrium converges

Result 3: There is a weight \(\omega\) such that transfers are zero at the \textit{Ramsey} equilibrium \(\Rightarrow\) Utility possibility frontiers with or without transfers are tangent
\(\Rightarrow\) A cooperative \textit{Ramsey} allocation in an environment in which governments cannot make transfers to each other cannot be \textit{Pareto} improved
Assume two agents $a$ and $b$, $y_i = F(k, n^a, n^b)$

Result 4: With agent specific LIT, back to the previous case.  
Separation between Public Finance and International Trade again

Result 5: With common LIT, no more separation.
Some more results

Result 6: With LIT, CIT & ART, \textit{Ramsey} outcome can be implemented with LIT and ART only, but not with LIT and CIT only.

Result 7: BA VAT and LIT, one can replicate the allocations obtained with CT and LIT only, and \textit{Ramsey} outcome can be implemented.

Result 8: With NoBA VAT and LIT, one cannot replicate the allocations obtained with CT and LIT only, and \textit{Ramsey} outcome cannot be implemented.
Summarizing the results

Extensions and limits

Result 1: With LIT, CT and TT, Ramsey equilibria satisfy production efficiency $\Rightarrow$ do not use TT (and transfers between countries are needed).

$\Rightarrow$ Separation between Public Finance and International Trade

- Result 1 can be extended to many models of International Trade
  - Trade in final good (Obstfeld & Rogoff)
  - Traded and non-traded goods (Stockman & Tesar)
  - Rich structure of intermediate and final goods (Eaton & Kortum)

- But Result 1 does not hold if monopoly power (Metlitz) or externalities.
Roadmap

1. Summarizing the results
2. Comment
Comment

Keen & Wildasin [2004]

- Keen & Wildasin [2004] also study Pareto-efficient international tax regimes.
- They assume away international transfers: every country faces its own national budget constraint.
- In that framework, Diamond & Mirrlees production efficiency theorem does not hold.
- They then lose desirability:
  - of destination basis for commodity taxation,
  - of the residence principle for capital income taxation,
  - of free trade.
- The possibility of having international transfers is a key assumption for Chari, Juan Pa & Pedro.
**Comment**

International Transfers

- **Chari, Juan Pa & Pedro**: Focus on point A: Pareto optimality with no transfers and no production distortion
Do a different thought experiment:
- Start from arbitrary taxes (say LIT, CIT and TT) competitive equilibrium: $E_0$
- Then choose Ramsey equilibrium without international transfers $E_1$: there will be production distortions
- Then allow for international transfers to go to $E_2$: no production distortions
Comment

International Transfers

\( m^2 \)

\( m^1 \)

WITH TRANSFERS

NO TRANSFERS
Comment
International Transfers

WITH TRANSFERS

NO TRANSFERS
Comment

International Transfers

$M^2$ vs $M^1$

WITH TRANSFERS

NO TRANSFERS

$E_0$, $E_1$, $A$
Comment

International Transfers
Comment
International Transfers

- Do we observe them? What is the observed counterpart?
- If not, would it be politically easy to implement?
- How large transfers need to be from $E_1$ to $E_2$?
- I guess hard to have a general answer to that.
- In some calibrated models of the EU?
- How reasonable is the assumption of international transfers is in my opinion a quantitative question...
- ... and it has critical implications for the results.