OPTIMAL FISCAL FEDERALISM IN THE PRESENCE OF TAX COMPETITION

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**Question**: How to allocate spending responsibilities and taxing powers between the central and lower-level governments

**Previous Approaches**

Oates: Tradeoff between uniformity at the central level and cross-border spillovers at the local level.

Besley-Coate: Centrally-provided public good supplies differ across regions in inefficient ways, because their provision is controlled by the minimum winning coalition (MWC) of a legislature.

Lockwood: The voting process within the central legislature allocated “projects” in a way that is not sufficiently sensitive to the “within-region” benefits of projects. Spillovers are a determining factor.

Janeba-Wilson: Countries use a federal structure to gain a strategic advantage over foreign rivals in their competition for internationally mobile capital.
Our Approach

• Use a minimum winning coalition at the central level.
• Replace spillovers with tax competition at the local level.
• Assume a continuum of public goods, so we can look for cases where both centralized provision and decentralized provision exist at the same time.

Results

• Some decentralization is always desirable.
• Under some conditions, both centralization and decentralization are desirable.
Assumptions

- 2 identical regions, each with a representative resident possessing endowments of immobile labor and mobile capital
- Factors produce output, which is used as private consumption and to produce public goods (Zodrow-Mieszkowski).
- Quasi-linear utility, with a continuum of public goods:
  \[ U = x + G; \quad G = \int_0^1 u(g(n))dn \]
- Efficiency rule:
  \[ u'(g(n)) = 1. \]
- Two levels of government: Central and Regional.
• The central government provides public goods in the set $C$, which we are seeking to determine, financed with a uniform tax on capital.

• Regions provide goods in $R$ (where $R$ and $C$ cover the unit interval), financed with a tax on capital, but may also provide goods in $C$.

• The central government moves first, and then regions play a Nash game in tax rates (tax competition).

• Regional government care only about their own residents.

• Central government decisions are controlled by one of the two regions (“minimum winning coalition”).
The Central Government’s Problem

- Budget constraint:

\[ \int_{n \in C} g(n) dn = 2TNK^* \]

- Public good rule:

\[ u'(g(n)) = \frac{1}{2}. \]

- Conclusion: Overprovision of public goods in insider region, no provision in outsider region.
A Region’s Problem

- Budget constraint for an insider (use R and C for outsider):

\[ \int_{n \in R} g(n)dn = tK(r + T + t), \]

- Public good rule:

\[
u'(g(n)) = \frac{1 + \left(1 - \frac{K^*}{K}\right) \frac{dr}{dt}}{1 + \frac{t}{K} K' \left(1 + \frac{dr}{dt}\right)},\]

  Numerator--terms of trade effects; Denominator—tax-induced capital outflows.

- Conclusion: Underprovision for regions, unless a region is a capital importer with large “terms-of-trade effects”
Proposition 1. Assuming a quadratic production function, there exists an $n' > 0$ such that decentralizing the provision of public goods between 0 and $n'$ raises expected utility.

Discussion

- Basic argument: When regional governments provide only a small number of public goods, the tax rates needed to finance them are small, and fiscal externalities from tax competition are small (denominator approximately equals one).

- As number of public goods rises, the fiscal externalities grow until they offset terms-of-trade effects (numerator), implying efficient provision. As a result, some amount of decentralization dominates complete centralization.

- Decentralization causes insider regions to raise their tax rates, which causes an efficiency-improving flow of capital to the high-tax outsider regions.
• Under the quadratic-production-function assumption, the outsider region responds to the inflow of capital by raising public good levels—a further efficiency gain (which should hold under more general production functions).

• Note: Decentralization must help the outsider region, but it can be expected to hurt the insider region.
Proposition 2: Assuming a CES production function, a sufficiently low substitution elasticity ensures that no central provision is optimal. If centralized provision of some public goods is preferable to no provision of these goods, then a sufficiently high substitution elasticity ensures that some centralized provision is optimal.

Discussion

- Basic argument: High elasticities make tax competition worse.
Many Regions

- One region is an agenda setter, which proposes the central tax and public good levels so that a majority of regions vote for the proposal over a default proposal, which is no centralization.

- Once again, we find that some decentralization is always beneficial.
Concluding Remarks

- Our main results suggest that some decentralization is always desirable, but some or no centralization may be optimal.

- Extensions:
  - Other political processes at the central level.
  - Political processes at the local level.
  - Different tiers of lower-level governments (lower tiers operate more efficiently?)
  - Income distribution issues: Centralization leads to capricious interregional differences in public good expenditures.