On Fiscal Policy and Unions

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Introduction

Should a union control the fiscal policy of its members?

- For some: yes (e.g., bailouts, inflationary pressures).
- For others: not necessary, especially in low interest-rate world.

Main insights:

- Overspending externality.
- Crowding-out effect of public spending exported to the union.
- Financial frictions (crowding-out not internalized) role for spending limits.

Extension 1: externality depends on whether debt markets are global.

- Role for within-union intermediation.

Extension 2: at ZLB, externality switches sign.

- Overspending or underspending depending on severity of financial frictions.
- Importance of flexible spending limits.
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Related literature

- Financial frictions, interest rates, and capital flows:

- Fiscal policy and interest rates:

- Foreign holdings of public debt, fiscal policy, and economic activity:

- Interest rates and return to capital:
The model

- \( I (\# = \infty), \) two periods \( (t = 0, 1). \)
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- Preferences: in each country \( i \in I \), continuum of agents that maximize

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U_i = c_i + \gamma_i \cdot v(g_i),
\]

where \( \gamma_i \cdot v(g_i) \) is utility from public good, \( v'(\cdot) > 0, v''(\cdot) < 0 \)
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  where \( \gamma_i \cdot v(g_i) \) is utility from public good, \( v'(\cdot) > 0, v''(\cdot) < 0 \)
- Country \( i \in I \) populated by government, entrepreneurs and savers.
  - At \( t = 0 \), savers with endowment \( \omega_i \):
    - Government taxes / issues debt to finance \( g_i \).
    - Entrepreneurs borrow to produce capital: can pledge \( \lambda \) of capital income.
  - At \( t = 1 \), production takes place: \( f(k_i) \).
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- In a “union”, given $\{g_i\}_{i \in I}$, equilibrium satisfies:
  $$R = \lambda \cdot f'(k_i) \text{ for all } i \in I,$$
  $$\sum_{i \in I} (k_i + g_i) = \sum_{i \in I} \omega_i,$$
  $$W_i = f(k_i) + \gamma_i \cdot v(g_i) + R \cdot (\omega_i - k_i - g_i) \text{ for all } i \in I.$$
Constrained optimal allocation
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\[ f'(\omega - g_U^*) \]

\[ f'(\omega_U - g_U^*) \]
Decentralized equilibrium
Correcting the externality

- In principle, pigouvian taxes or spending limits could correct externality.

- Consider (non-discriminatory) spending limit. Set by median country:
  - Benefit: reduce crowding out in union, raise capital stock.
  - Cost: if unconstrained, none (envelope condition).

- Median country does not internalize effects on other countries.

- Main insight:
  - If median country is high spender: limit will tend to be too loose.
  - If median country is low spender: limit will tend to be too tight.
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- But how are they set?
  - In a union with a identical country, no problem.
  - Think of union with high ($\gamma_H$) and low ($\gamma_L$) spenders.
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Union with heterogeneous countries
Union with heterogeneous countries
Spending limit too loose
Spending limit too loose

\[ R \]

- \( f'(\omega_U - g_U) \)
- \( \{f'(\omega_U - g_U^*), g_U^*\} \)
- \( \gamma^H_{U'}(g_U) \)
- \( \gamma^U_{U'}(g_U) \)
- \( \gamma^L_{U'}(g_U) \)

\[ RL \]

- \( g_L \)
- \( g_U \)
- \( \bar{g} = g_H \)
- \( g \)
Spending limit too tight
Spending limit too tight
In principle, tax on spending could correct externality.

But similar arguments apply...

- Median country would not necessarily choose optimal tax.
- In fact, median country may prefer spending limit over taxes.
Extension 1: global debt

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- Now assume fraction $\delta$ of debt can be placed outside of the union.
  - Purchased by international financial market (IFM): interest rate $R_W$.
  - Can think of $\delta$ as reflecting credibility.

Crowding-out effect of $g$ decreasing in share of debt held by IFM.

Consistent with evidence on multiplier and debt holdings (Broner et al. 2019).
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- Crowding-out effect of $g$ decreasing in share of debt held by IFM.
  - Consistent with evidence on multiplier and debt holdings (Broner et al. 2019).
Global debt: externality may disappear

\begin{align*}
R &= f'(\omega_U - g_U) \\
R_W &= f'(\omega_U - g_U)
\end{align*}
Global debt: externality may disappear
If $\delta$ is high enough, $R_U = R_W$ and externality disappears altogether!

If $\delta$ is heterogeneous within the union, role for intra-union intermediation.

- Think of crisis as fall in $\delta$ of periphery (or fall in $\lambda$ throughout union).
- Role for high-$\delta$ countries to intermediate between IFM and low-$\delta$ countries.
- Interpretation of eurozone policy responses:
  - European Financial Stability Facility (EFSF), European Stability Mechanism (ESM), ECB’s programs (SMP, LTRO, OMT).
Extension 2: ZLB

- Extend model to monetary union

At \( t = 0 \), endowment is endogenous \( \omega_i \in [0, \bar{\omega}_i] \).

E.g., savers in country \( i \) can produce up to \( \bar{\omega}_i \) with negligible effort.

Lower bound \( r \) on union interest rate, i.e., \( R_U \).

E.g., ZLB on nominal interest rate plus nominal rigidities.

What changes? Critical level of spending \( \hat{g}_U \) such that:

If \( g_U \geq \hat{g}_U \):
- \( \omega_U = \bar{\omega}_U \) (output supply determined): overspending.

If \( g_U < \hat{g}_U \):
- \( \omega_U < \bar{\omega}_U \) (output demand determined): underspending.
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- Slight modification of framework:
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- What changes? Critical level of spending $\hat{g}_U$ such that:
  - If $g_U \geq \hat{g}_U$: $\omega_U = \bar{\omega}_U$ (output supply determined): *overspending*.
  - If $g_U < \hat{g}_U$: $\omega_U < \bar{\omega}_U$ (output demand determined): *underspending*.
Extension 2: before crisis (ZLB slack)

- $\lambda$ high and overspending: role for spending limit.
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- $\lambda$ high and overspending: role for spending limit.
Extension 2: effect of crisis (ZLB binds)

- $\lambda$ falls, underspending: some countries cannot spend, others don’t want to!

![Graph showing the effect of crisis (ZLB binds) with various curves and points representing different economic indicators and thresholds.](image-url)
Conclusions

- We live in a world of low interest rates.
  - Opportunity to increase public spending at low cost?

- This paper emphasizes role of financial frictions.
  - Frictions: wedge between interest rate and marginal product of capital.
  - Interest rates may not properly reflect cost of public spending.
  - In fact, some evidence that return to capital has not fallen alongside interest rate.

- Main insights:
  - Overspending externality.
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