

Nash Equilibria in Models of Fiscal Competition with Unemployment

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Research question:

What policy variable should be implemented by the government under fiscal competition environment where unemployment exists?

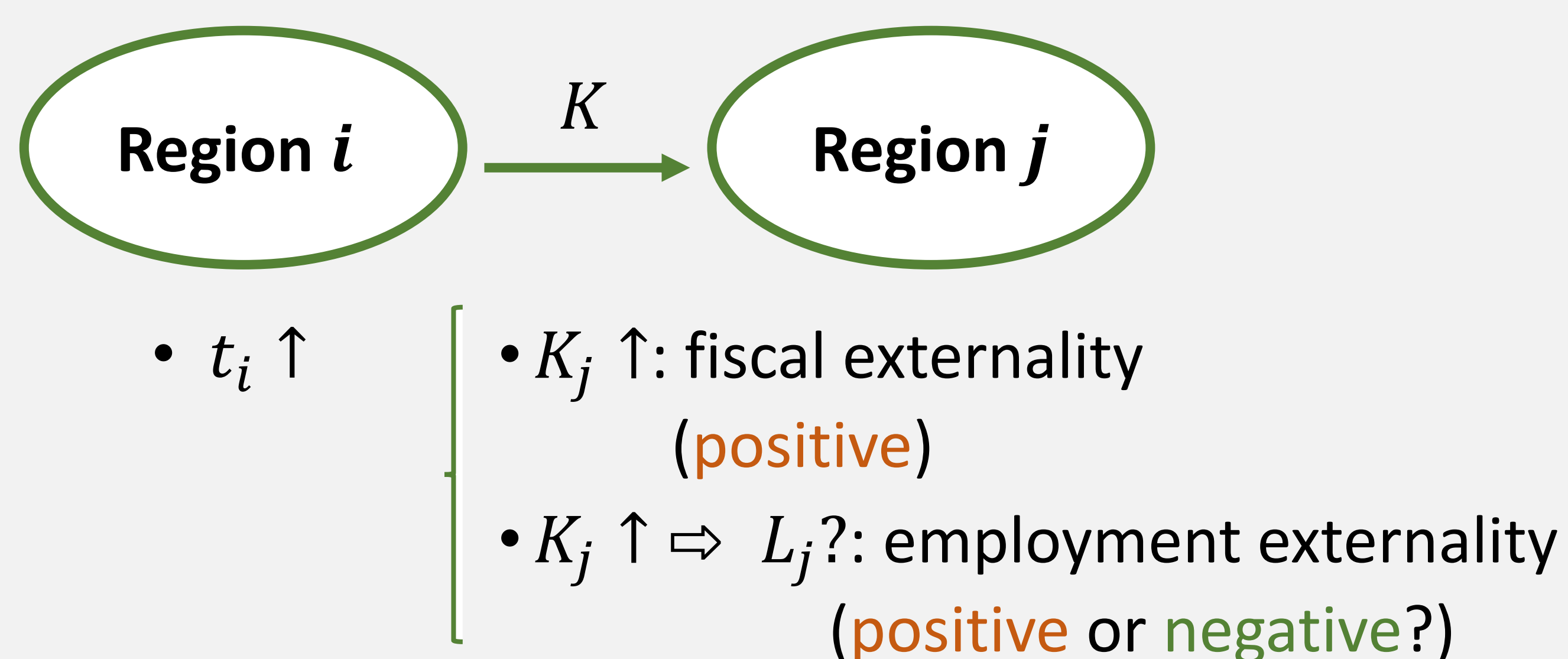
Tax rate vs Public expenditure

Introduction

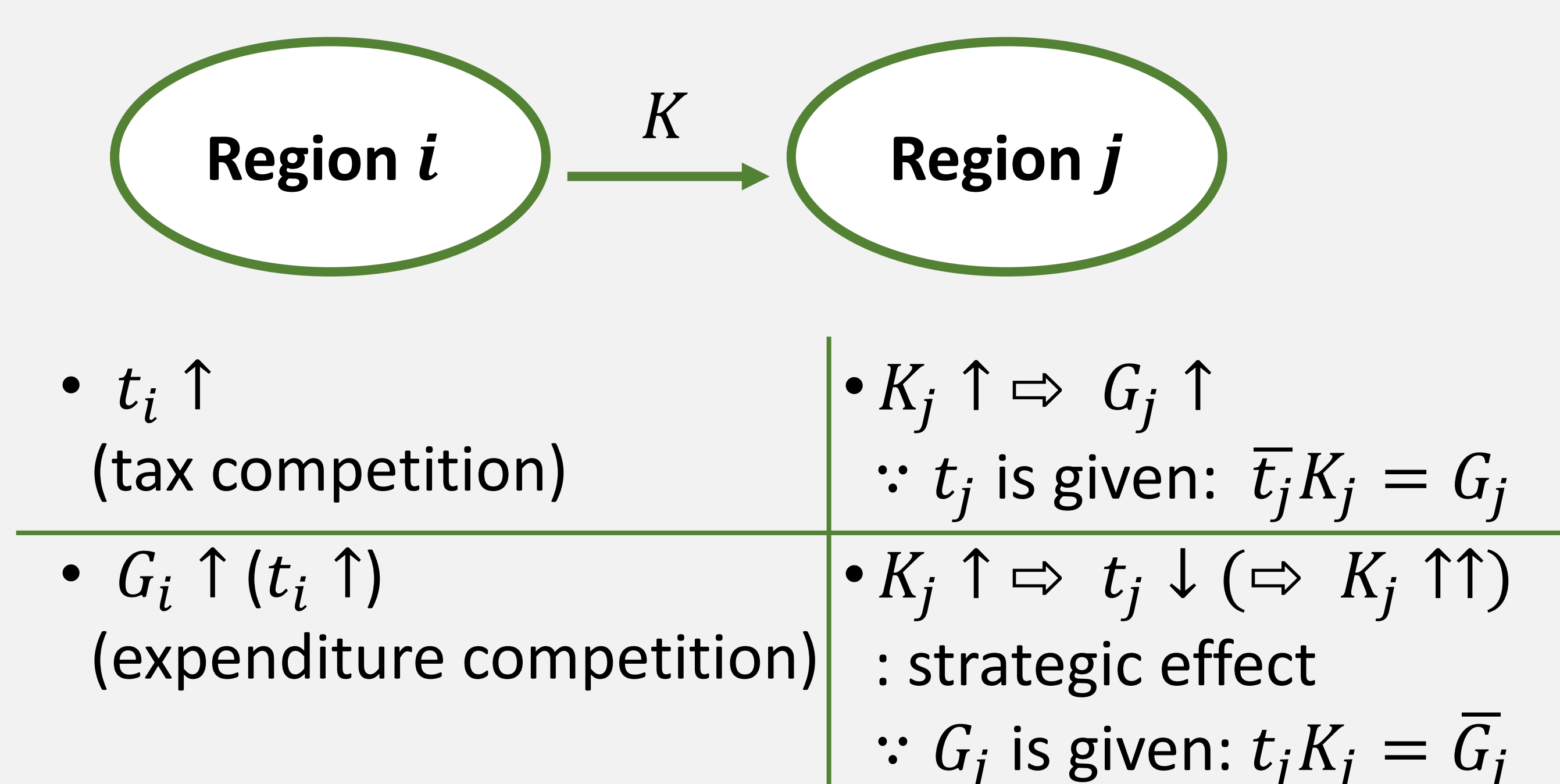
- Fiscal competition widely recognized as representing “race to bottom”
- The government is competing not only to encourage investment but also to create employment
- Many theoretical studies investigated the relationship between tax competition and unemployment
- However taxes aren't the only policy instrument the government can compete in the realistic world
- Countries/regions are facing intergovernmental competition for using other policy variable

Model

Existence of unemployment



Choice of policy variable



- N regions: $N \geq 2$
- The population in each region is unity
- Economy-wide capital stock is fixed: \bar{K}

- Capital input : K_i (mobile), Labor input: L_i (immobile)
- Capital market: $\sum_{i=1}^N K_i = \bar{K}$

- Two goods: X_i (private goods) and G_i (public goods)
- Private goods: perfect competitive markets
- Public goods: $t_i K_i = G_i$ (t_i : tax rate)

- Social welfare function: $U_i(X_i, G_i) = X_i + v(G_i)$
- The regional government chooses **tax rate** or **expenditure level** to maximize social welfare function

Tax vs expenditure competition

Proposition 1:

- There exists a unique symmetrical tax competition equilibrium and a unique symmetrical expenditure competition equilibrium
- These equilibria are characterized as $t^* \geq t^* \Leftrightarrow G^* \geq G^*$

Proposition 2:

- ① $t^o > t^* > t^*, U^o > U^* > U^*$
- ② $t^o < t^* < t^*, U^o > U^* > U^*$

The interpretation of Proposition 2:

- Three effect in this economy
 - Fiscal external effect (positive)
 - Employment external effect (positive or negative)
 - Strategic effect in expenditure competition case (positive)
- Employment externality is **positive** or **not too negative**
 - “All effects is **positive**” or “fiscal external effect and strategic effect dominate employment external effect”
⇒ Public goods is under-provided (Proposition 2① $t^o > t^* > t^*$)
- Employment externality is **negative**
 - Employment external effect dominates fiscal external effect and strategic effect
⇒ Public goods is over-provided (Proposition 2② $t^o < t^* < t^*$)

o : optimal provision of public goods
* : tax competition case
* : expenditure competition case

Summary of results:

- Tax rates under tax competition are likely to be more competitive than under expenditure
- Governments prefer to choose government expenditure as their strategic variable rather than tax rates