



MAX-PLANCK-GESELLSCHAFT

Max Planck Institute  
for Tax Law and Public Finance

# International Tax Competition

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# The product space of tax competition surveys

Wilson (1999, NTJ)

Gresik (2001, JEL)

Gordon and Hines (2002, HbPE)

Zodrow (2003, ITAX)

Wilson and Wildasin (2004, JPubEc)

Fuest, Huber and Mintz (2005, FTM)

Zodrow (2010, NTJ)

Genschel and Schwarz (2011, SER)

Boadway and Tremblay (2012, JPubEc)

## Introduction

### The standard tax competition framework

- Non-cooperative equilibrium analysis
- Partial coordination
- Dynamic aspects

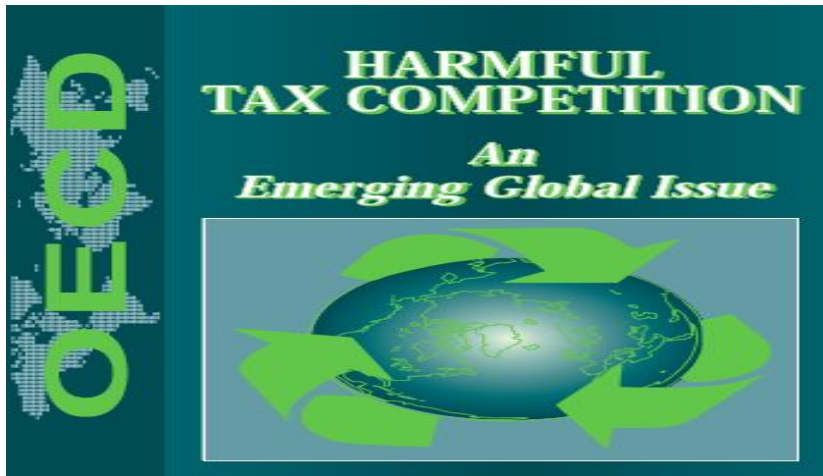
### Departures from the benchmark model

- Public goods and infrastructure expenditure
- Bidding for firms
- VAT and tax competition (TBC)
- Tax havens (TBC)

### Agency issues

- Public finance versus public choice (TBC)
- Tax competition and Leviathan
- Accountability and benchmarking (TBC)
- Representative democracy (delegation) (TBC)
- Lobbying by interest groups (TBC)

## Conclusions



## About the introduction:

Why study tax competition?

### The product space of tax competition surveys

Wilson (1999, NTJ)

Gresik (2001, JEL)

Gordon and Hines (2002, HbPE)

Zodrow (2003, ITAX)

Wilson and Wildasin (2004, JPubEc)

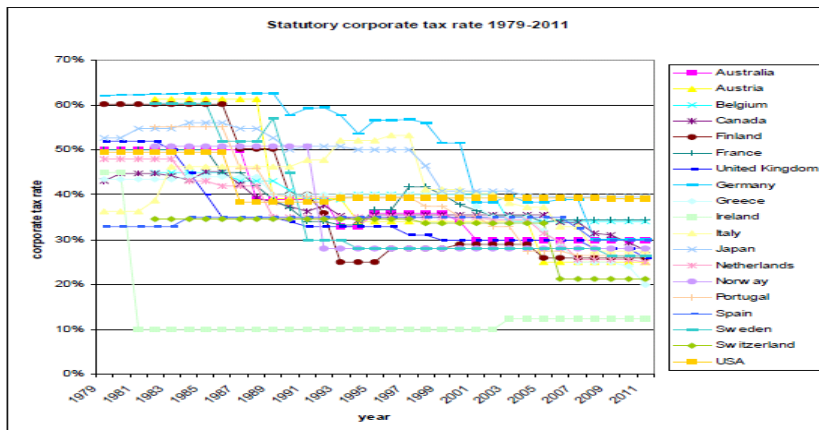
Fuest, Huber and Mintz (2005, FTM)

Zodrow (2010, NTJ)

Genschel and Schwarz (2011, SER)

Boadway and Tremblay (2011, JPubEc)

Why another survey on tax competition?



What are the relevant dimensions?

# About the standard tax competition framework

## Non-cooperative equilibrium analysis

The “workhorse model”

A graphical tool

Sequential decision making

The role of internal governmental structure

Pure profits and portfolio diversification

## Coordination, cooperation, harmonization

Limits to coordination

Regional coordination in tax alliances

Preferential tax regimes versus uniform taxes

Partial coordination on some taxes

## Dynamic aspects

Infinitely repeated interaction – interplay with coordination

Endogenous savings and time consistent taxation

Stocks, flows and agglomeration

## Departures from the benchmark model

Public goods and infrastructure goods competition

Bidding for firms

VAT competition

## Agency issues

The debate between Public Finance and Public Choice

Tax competition and Leviathan

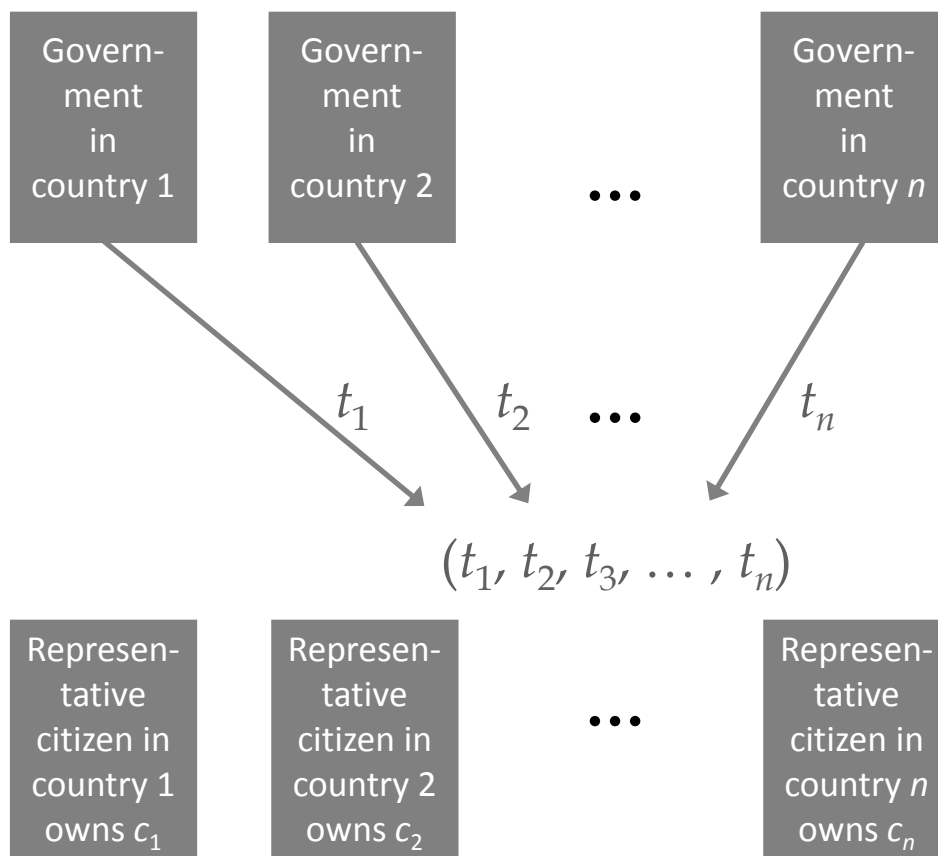
Accountability and benchmarking

Median voter theory

Delegation of tax rate choices

Interest groups and influence activities

# Non-cooperative equilibrium analysis – the workhorse model

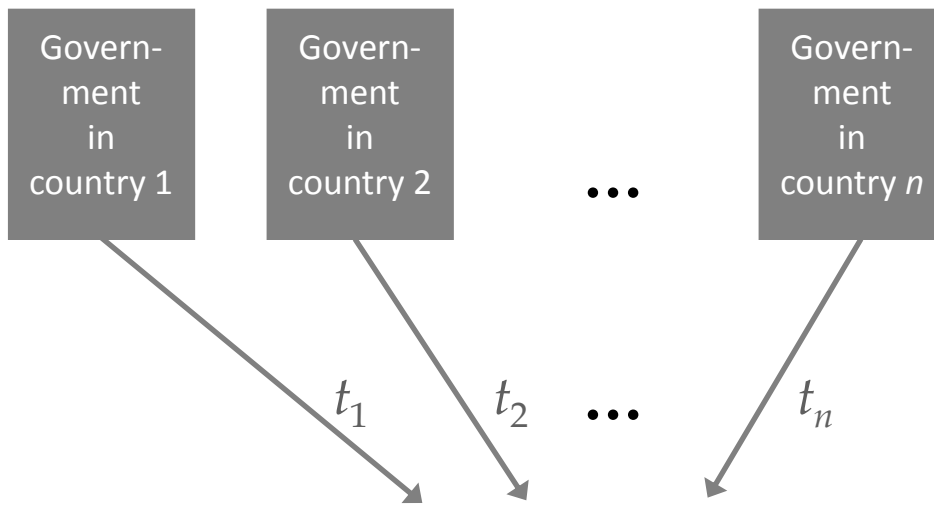


$$W_i = f_i(k_i) - f'_i(k_i)k_i + \rho c_i + G_i(t_i k_i)$$

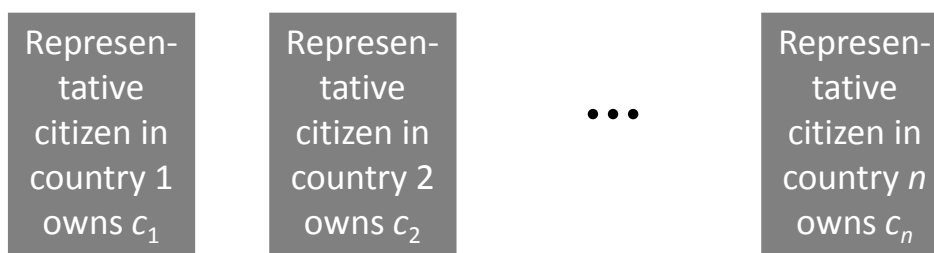
$$f'_1(k_1) - t_1 = f'_2(k_2) - t_2 = \dots = f'_n(k_n) - t_n = \rho$$

$$\sum_{i=1}^n c_i = \sum_{i=1}^n k_i = K$$

# Non-cooperative equilibrium analysis – the workhorse model



$(t_1, t_2, t_3, \dots, t_n)$



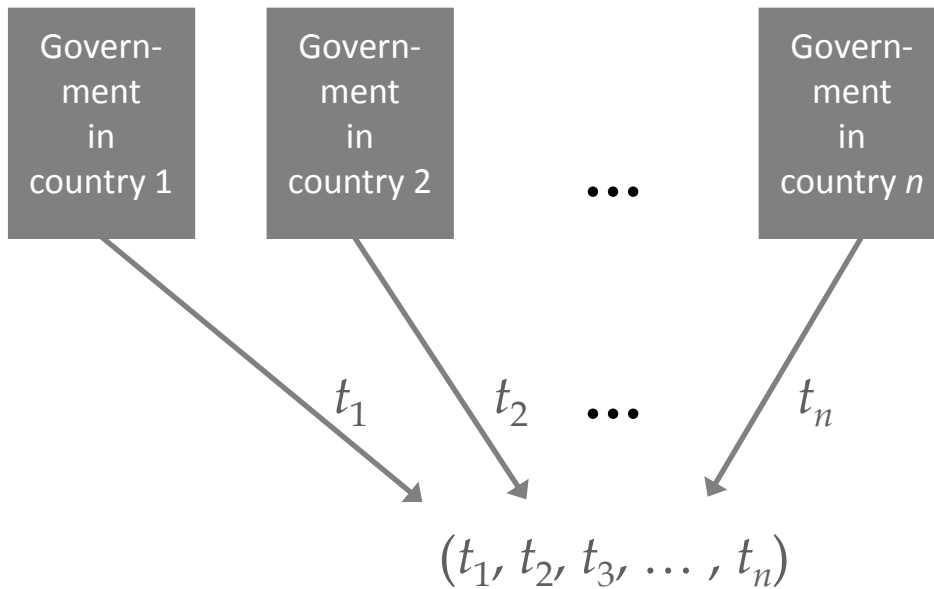
$$f'_1(k_1) - t_1 = f'_2(k_2) - t_2 = \dots = f'_n(k_n) - t_n = \rho$$

$$\sum_{i=1}^n c_i = \sum_{i=1}^n k_i = K$$

**Perfect competition - Walrasian equilibrium**



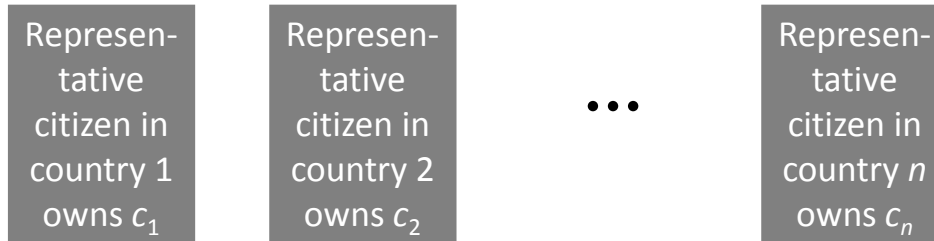
# Non-cooperative equilibrium analysis – the workhorse model



## Strategic interaction

$$W_i = f_i(k_i) - f'_i(k_i)k_i + \rho c_i + G_i(t_i k_i)$$

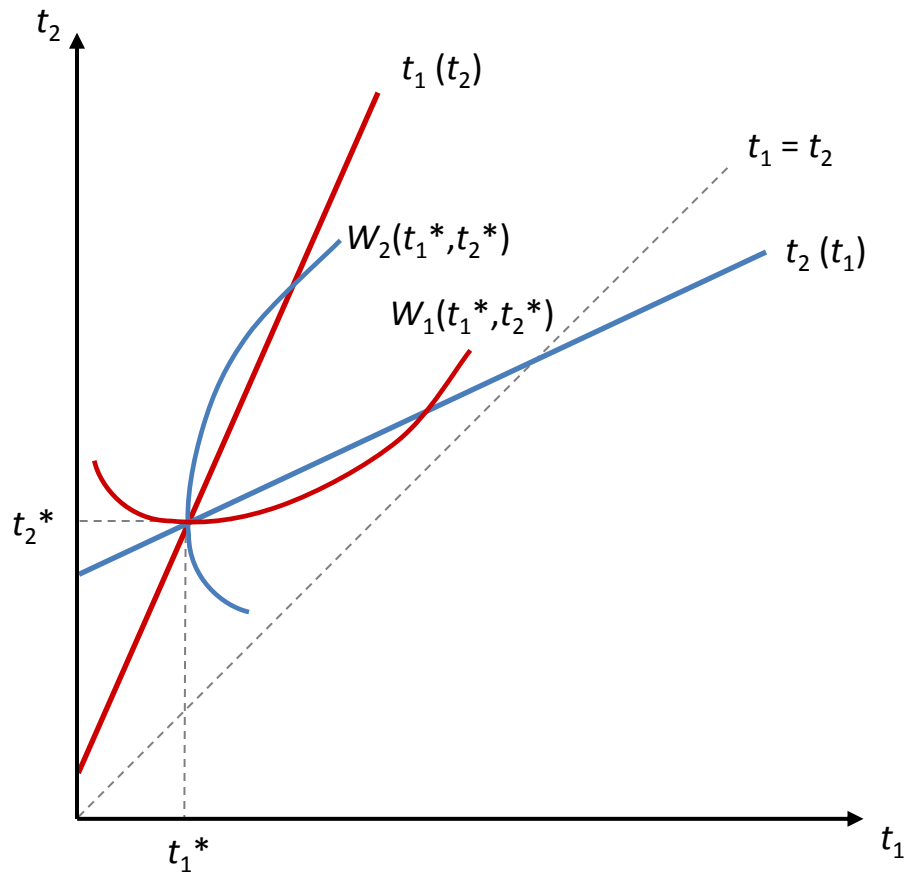
$$G'(t^* k^*) = \frac{1}{1 + \frac{t^*}{k^*} \frac{n-1}{n} \frac{1}{f''(k^*)}}$$



$$f'_1(k_1) - t_1 = f'_2(k_2) - t_2 = \dots = f'_n(k_n) - t_n = \rho$$

$$\sum_{i=1}^n c_i = \sum_{i=1}^n k_i = K$$

# A graphical tool for non-cooperative tax competition analysis



Tax rates are typically strategic complements.

$$c_i > c_j \text{ implies } t_i^* < t_j^*.$$

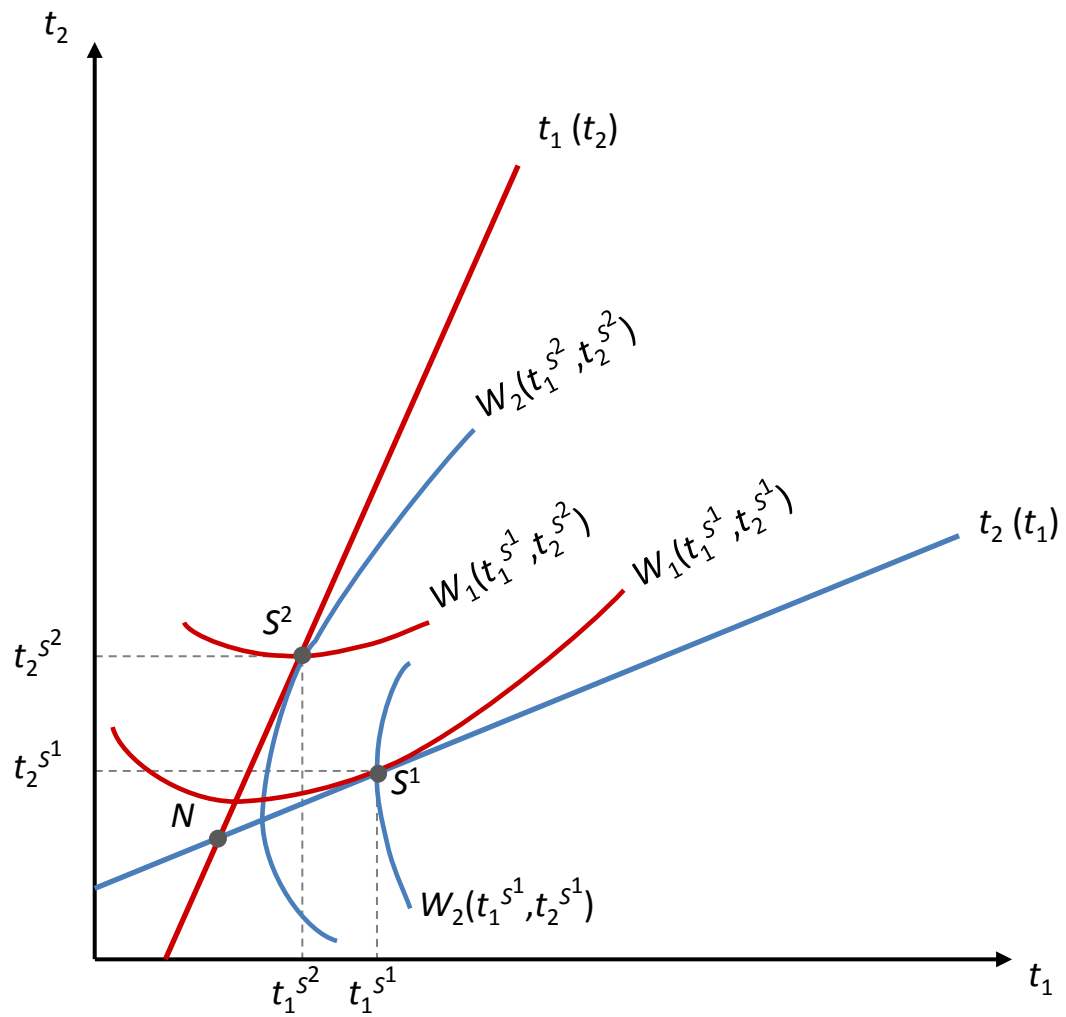
$$G'_i(\cdot) < G'_j(\cdot) \text{ implies } t_i^* < t_j^*.$$

Larger countries tend to have higher tax rates.

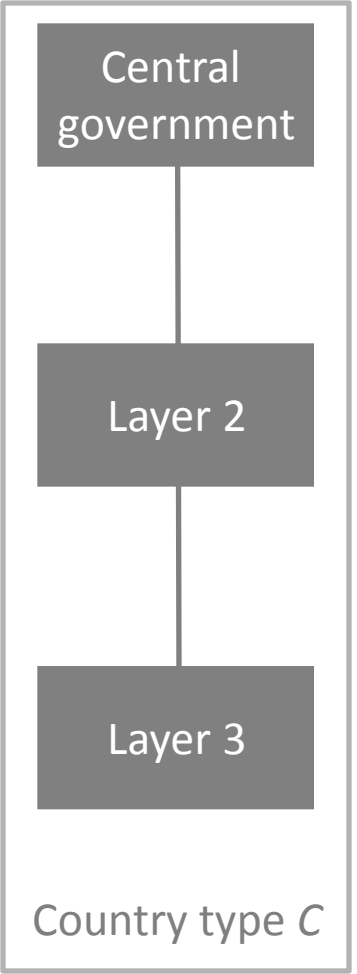
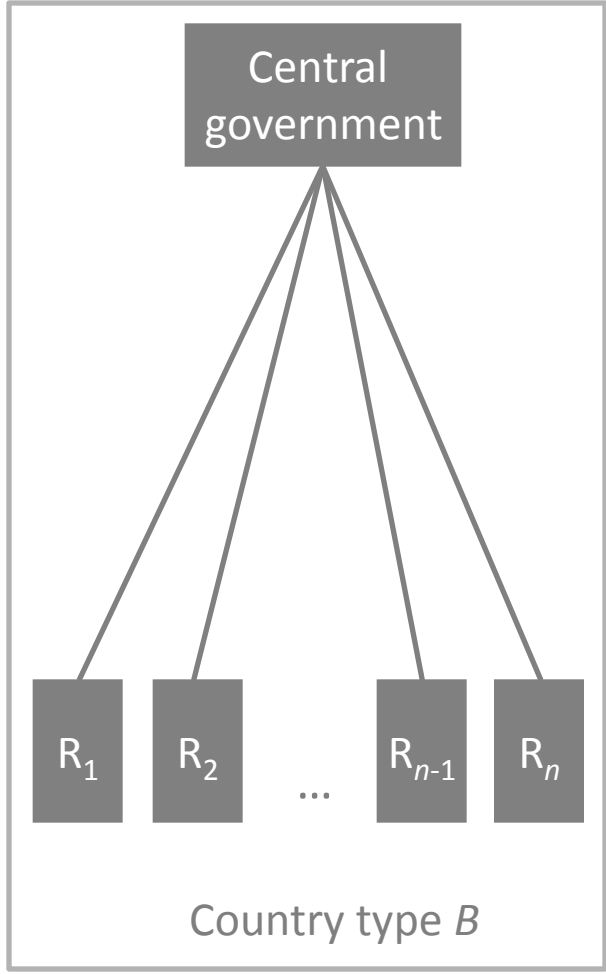
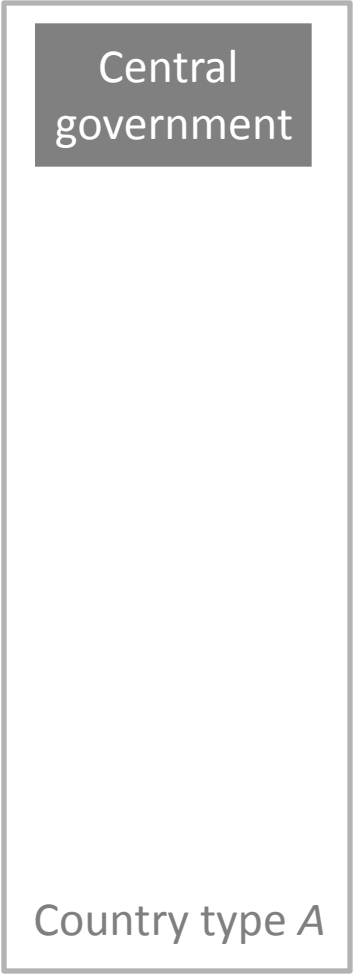
Competition may lead to more tax rate dispersion.

Pure profits and international portfolio diversification imply less tax competition

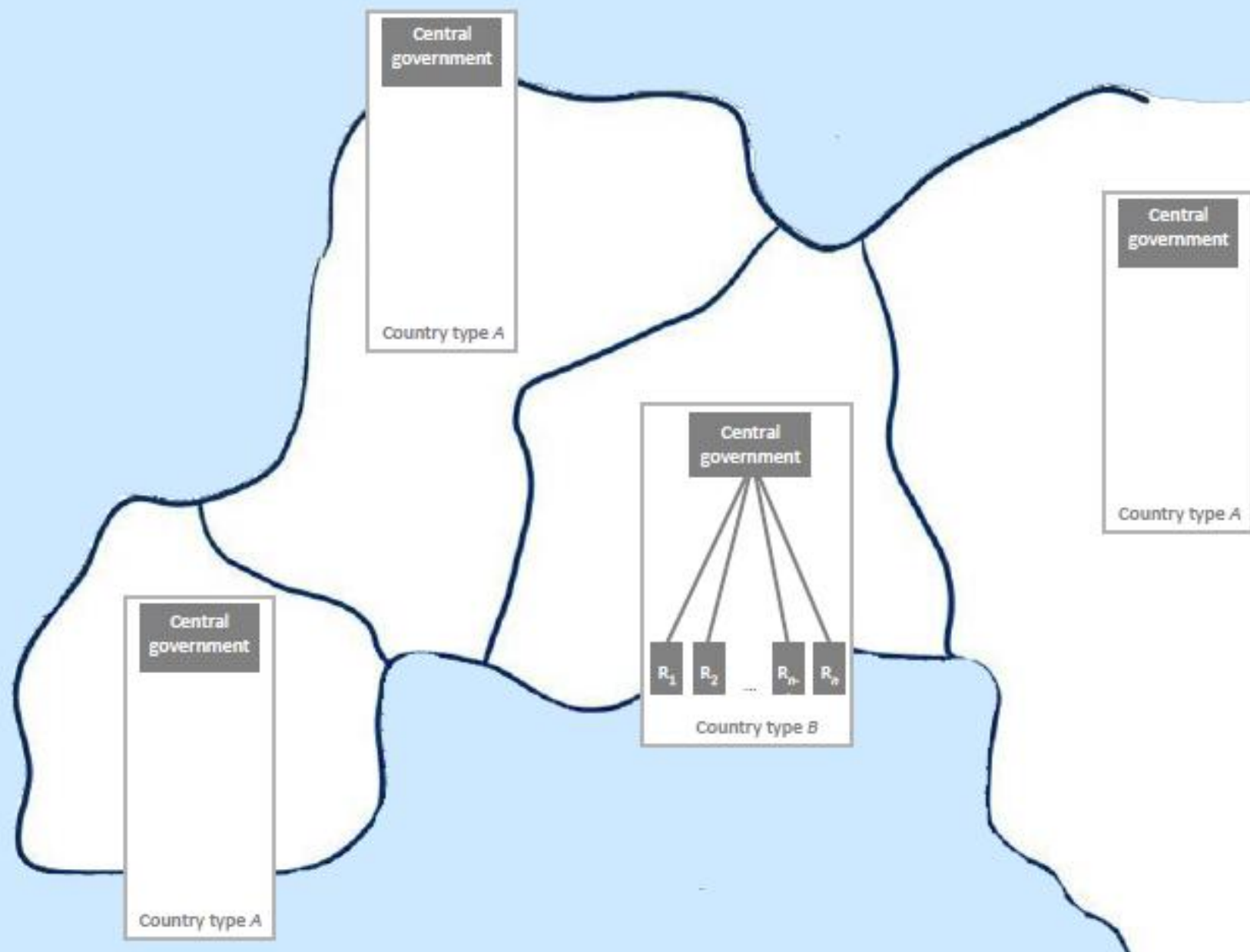
# Sequential decision making and endogenous sequencing



# The strategic role of internal governance structure



# Internal governance structure and international competition



# Coordination

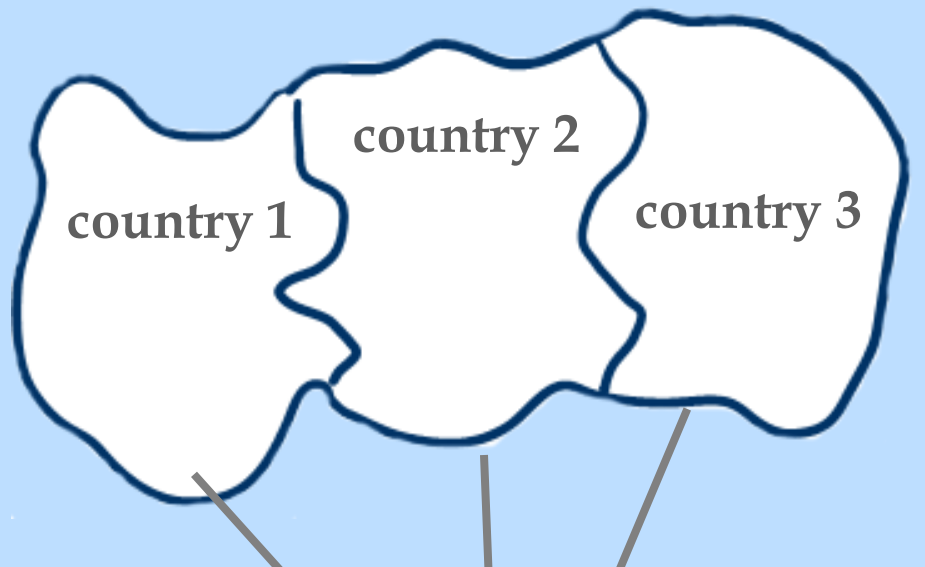
A harmonized minimum tax

Regional coordination in a global world

Preferential tax treatment versus uniform taxation

Coordination on some, but not all tax parameters

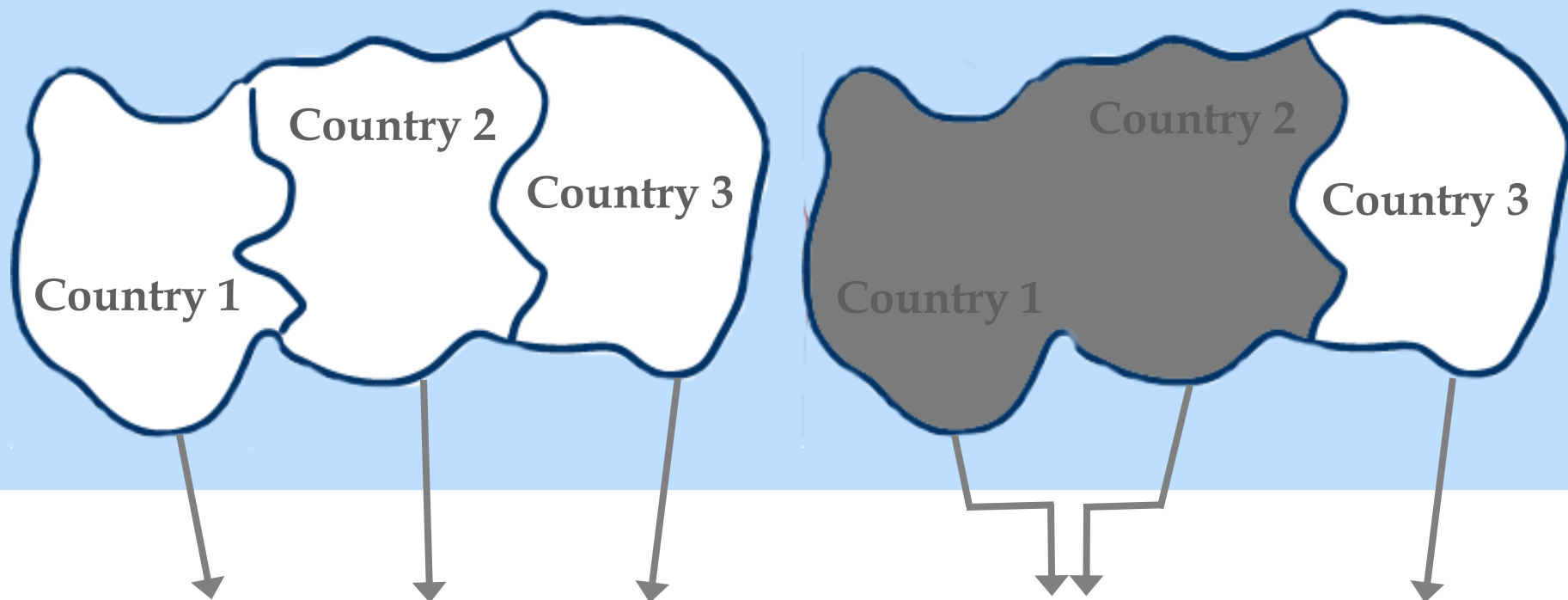
# Regional coordination in a global world



$$(t_1, t_2, t_3) = (t^*, t^*, t^*)$$

$$\frac{\partial W_i}{\partial t_i} = 0$$

# Regional coordination in a global world



$$(t_1, t_2, t_3) = (t^*, t^*, t^*) \quad t_1 = t_2 \equiv t_A \quad t_3$$

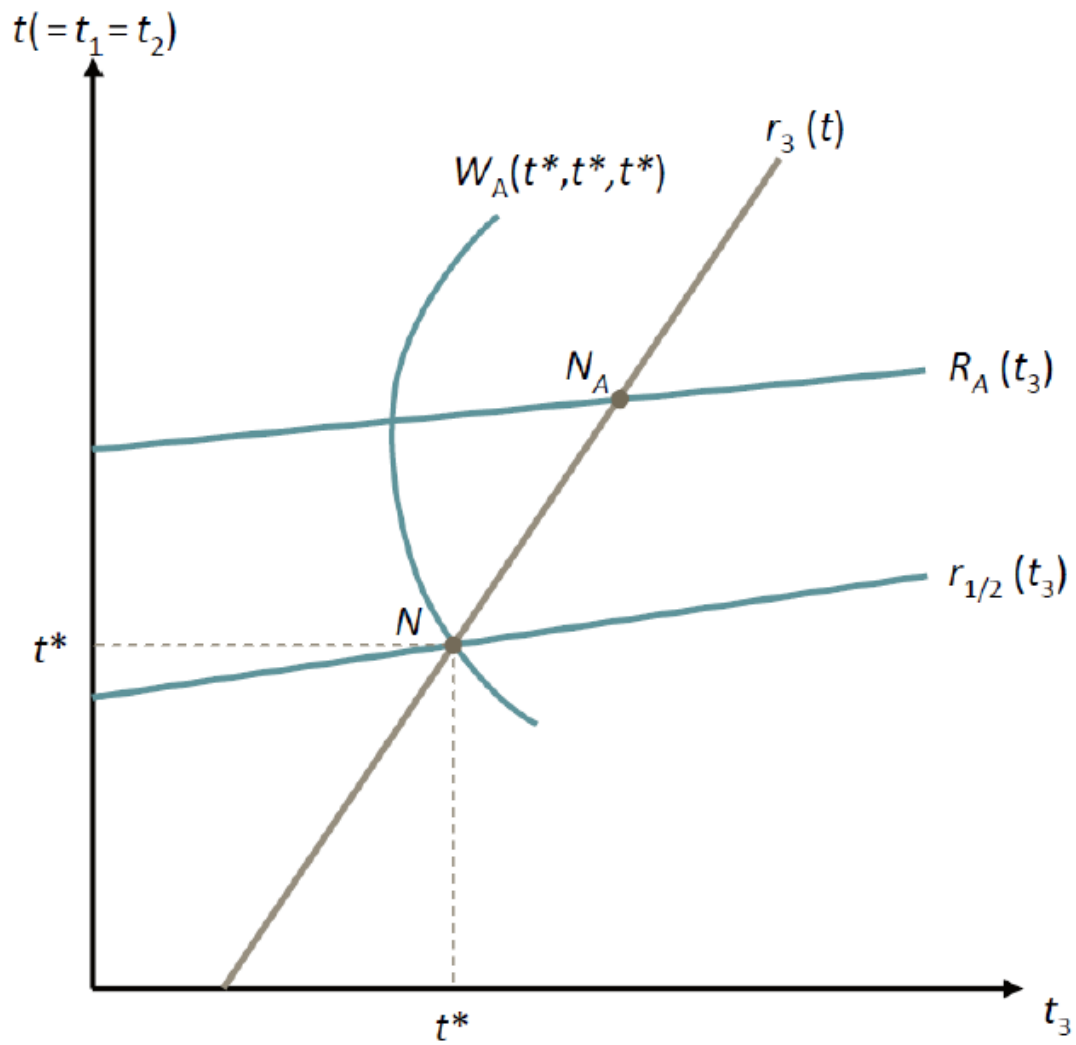
$$\frac{\partial W_i}{\partial t_i} = 0$$

$$\frac{\partial(W_1 + W_2)}{\partial t_A} = \frac{\partial W_2}{\partial t_1} + \frac{\partial W_1}{\partial t_2} > 0$$

$$\text{at } (t_1, t_2, t_3) = (t^*, t^*, t^*)$$



# Graphical tool can be used again



## Dynamic aspects

Infinitely repeated games and the *topsy-turvy principle*

Time consistent capital taxes and tax competition

Excess capacity as countervailing threats

Stocks, flows, and agglomeration

## About II. Departures from the standard model

Public goods and infrastructure expenditure

Bidding for firms

VAT and tax competition (TBC)

Tax havens (TBC)

## About III. Agency issues

Public finance versus public choice (TBC)

Tax competition and Leviathan

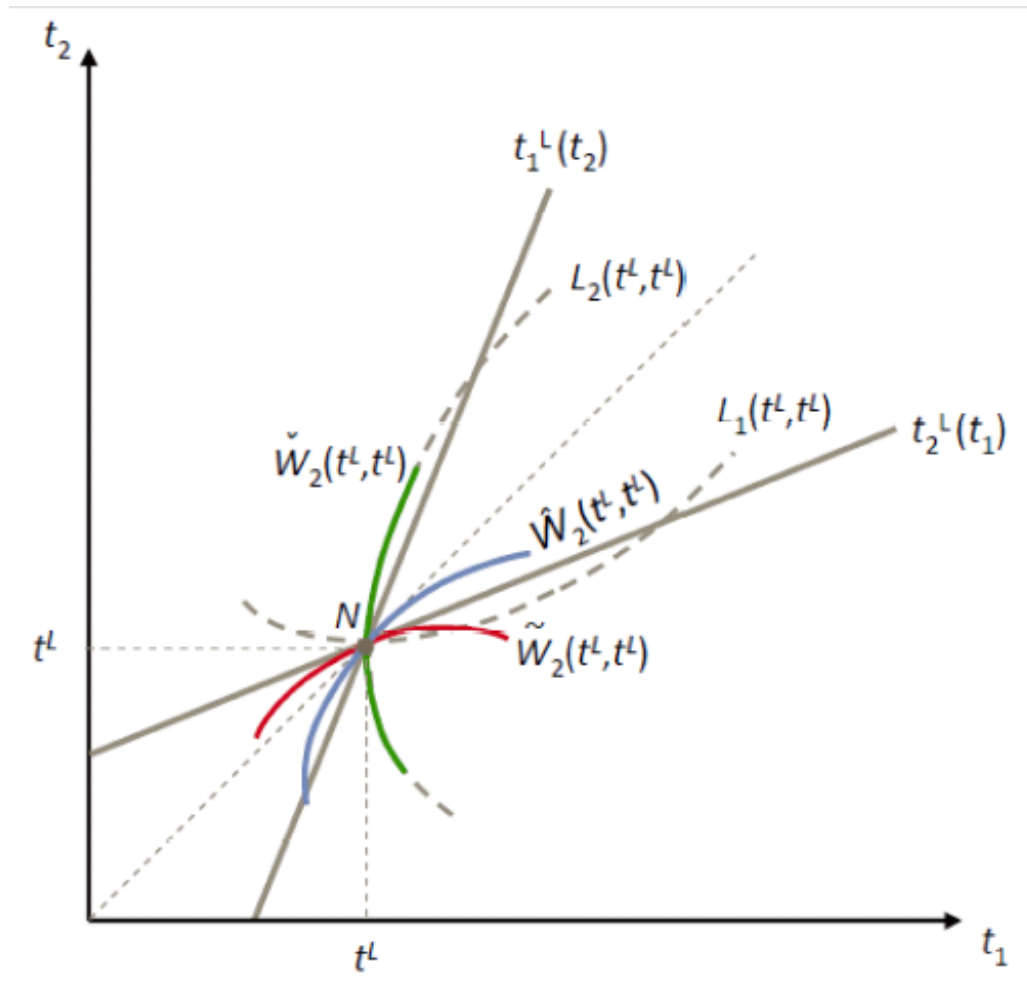
Accountability and benchmarking (TBC)

Median voter theory

Delegation (TBC)

Interest groups and influence activities (TBC)

**Tax competition and Leviathan:**  $L_i = x_i + G(t_i k_i - C_i) + v(C_i)$



$$\frac{d(t_i k_i - C_i)}{d(t_i k_i)} \frac{1}{1 + \frac{t}{k} \frac{n-1}{n} \frac{1}{f''(k)}} > 1$$

### III Agency issues

Public finance versus public choice (TBC)

Tax competition and Leviathan

Accountability and benchmarking (TBC)

Median voter theory

Delegation (TBC)

Interest groups and influence activities (TBC)