International Tax Competition

Michael J. Keen and Kai A. Konrad

Berkeley, December 2011
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)
- Fuest, Huber and Mintz (2005, FTM)
- Zodrow (2010, NTJ)
- Genschel and Schwarz (2011, SER)
- Broadway and Tremblay (2011, JPubEc)

What are the relevant dimensions?

Why another survey on tax competition?
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

\[ W_i = f_i(k_i) - f_i'(k_i)k_i + \rho c_i + G_i(t_i k_i) \]

\[ f'_1(k_1) - t_1 = f'_2(k_2) - t_2 = \cdots = f'_n(k_n) - t_n = \rho \]

\[ \sum_{i=1}^{n} c_i = \sum_{i=1}^{n} k_i = K \]
Non-cooperative equilibrium analysis – the workhorse model

\[ f_1'(k_1) - t_1 = f_2'(k_2) - t_2 = \cdots = f_n'(k_n) - t_n = \rho \]

\[ \sum_{i=1}^{n} c_i = \sum_{i=1}^{n} k_i = K \]
Non-cooperative equilibrium analysis – the workhorse model

Strategic interaction

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

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

Representative citizen in country 1 owns \( c_1 \)

Representative citizen in country 2 owns \( c_2 \)

... \( \ldots \) \( \ldots \)

Representative citizen in country \( n \) owns \( c_n \)

\[ f'_1(k_1) - t_1 = f'_2(k_2) - t_2 = \cdots = f'_n(k_n) - t_n = \rho \]

\[ \sum_{i=1}^{n} c_i = \sum_{i=1}^{n} k_i = K \]
A graphical tool for non-cooperative tax competition analysis

Tax rates are typically strategic complements.

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

\[ G_i'(.) < G_j'(.) \text{ implies } t_i^* < t_j^*. \]

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

\[
S_1(t_1) = t_1(t_2)
\]

\[
S_2(t_2) = t_2(t_1)
\]

\[
W_1(t_1^{s_1}, t_2^{s_2})
\]

\[
W_2(t_1^{s_2}, t_2^{s_2})
\]

\[
W_1(t_1^{s_1}, t_2^{s_1})
\]

\[
W_2(t_1^{s_1}, t_2^{s_1})
\]

\[
N
\]

\[
S_1
\]

\[
S_2
\]
The strategic role of internal governance structure
Internal governance structure and international competition
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

\[ (t_1, t_2, t_3) = (t^*, t^*, t^*) \]

\[ t_1 = t_2 \equiv t_A \quad t_3 \]

\[ \frac{\partial W_i}{\partial t_i} = 0 \]

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

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: \[ L_i = x_i + G(t_i k_i - C_i) + v(C_i) \]
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)