Taxation in Europe and fiscal policy coordination and competition

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Introduction

Tax policies have a major impact on business profits and welfare of citizens

Every person is affected by state and local governments fiscal policies

Different levels of governments may set taxes

Public Finance provides an analysis of problem within a federal fiscal system or a decentralized country

We will focus on the behavior and policies of state and local governments

Content

1. Taxation trends in the EU

   1. Level and time trends
   2. Revenue structure by type of tax

2. Fiscal interactions among governments : Theory and Empirics

   1. Theoretical models of fiscal interactions among local governments
   2. The empirical tests of horizontal and vertical tax interactions

1st part: Taxation trends in the EU

Source :

Taxation Trends in the European Union

Data for the EU Member States, Iceland and Norway

2017 Edition

European Union, DG Taxation and Customs Union

1. Level and time trends

- EU tax revenues are relatively high compared with other advanced economies (See **graph 1**)

- EU 28 and EA tax revenues (as % of GDP) reached a plateau in 2015 (see **graph 2**)

- 22 member states recorded an increase in tax revenue in 2015 while 6 recorded a tax to GDP fall

- Level of taxation in the EU differs greatly according to the Member state (**graph 3**)

Revenue structure by level of government

- **graph 4**
- Considerable differences in structure from one country to antother
- The share of sub-central revenue varies from 1% to 33% of the total.

- Taxes are traditionnaly classified as direct or indirect.

- Direct taxes cover personal income taxes, corporate income taxes and other income and capital taxes.

- Indirect taxes relate to VAT, excise duties and consumption taxes, other taxes on products and production

- Tax structures differ between member states (**Graph 5**)

- Taxes on (employed) labour income are the largest source of revenue (**Graph 6**), contributing nearly 1/2 of all receipts, followed by consumption taxes (1/3) and then capital taxes at around 1/5. But strong differences among countries.

Consumption tax

- The share of consumption taxes in total revenue grew slightly in 2015 (**graph 7**)
- There are significant differences in the components of taxation of consumption (**graph 8**)
- VAT rates are stable since 2013 (**graph 9**)
- Highest rates : Hungary (27%), lowest rates (Lux and Malta 17 and 18%)

Labour tax

- The tax burden on labour has remained stable since 2012 (**graph 10**)

- Strong variation among member states : ++ in Belgium (43.6%) and Italy (43.2%), -- in Malta (23%) and UK (24.8%)

Capital taxation

- Corporate income tax revenues dropped after the economic crisis in 2008 and did not recover their pre-crisis level (**graph 15**)

- The EU average tax rate on corporate income continues to fall since 2003 (**graph 16**)

Environmental taxation

- EU revenues relative to GDF remain stable in 2012 (**graph 17**)

- There are large differences in composition between member states (**graph 18**)

Property taxes

- Composition of property taxes are different (**graph 21**): immovable (immobile real estate) property vs property transfers and transactions (other property taxes, mobile).

2nd part. Fiscal interactions among governments: Theory and Empirics

- Fiscal federalism
- Externalities inherent to any decentralised governmental structures.
- When do externalities arise ?
- Horizontal and vertical externalities
- Main source of externalities :
  - mobility of tax bases between different tiers of government
  - information asymmetries between voters and their representatives

1. Theoretical models of fiscal interactions among local governments

Horizontal interactions : tax base mobility (tax competition) or political behaviour (yardstick competition)

Vertical interactions

The Tiebout Hypothesis (1956) : the idealized world

- Tiebout's (1956) theory of local public good provision provides a theory of efficient tax competition

- Competition for mobile households is welfare enhancing

- The government offers public goods that are financed by local taxes

- These taxes are collected from residents in the form of head taxes

- This marginal-cost-pricing rule results in efficient migration decisions

- Wasteful tax competition involves some type of departure from the idealized settings of "Tiebout models."

- The main source of departure is the existence of of fiscal externalities

1.1 Horizontal fiscal interactions based on fiscal base mobility

Pioneer work of Zodrow and Mieszkowski (1986) and Wildasin (1988, 1989)
See Wilson, 1999 for a survey

Assumptions :
Local public decision-makers are benevolent
Households are assumed to be immobile and to consume both a private good and a local public good.
Local public good is financed by a tax on capital.
Capital is assumed to be perfectly mobile across local jurisdictions.

What happens when a given government raises its tax rate ?
Capital flows carry on until the net return on capital becomes identical everywhere.

Result :
In Nash equilibrium, the local public good is under-provided at equilibrium.
Inefficiency

Other result : the higher the local elasticity of capital (or to put it differently, the greater the number of competing local jurisdictions), the greater the difference to the social optimum (Hoyt, 1991).

Further developments

Large regions:

Nash equilibrium (Wildasin, 1988, 1989)

Hoyt (1991) : Public good levels and tax rates increase as the number of competing regions drops.

Asymmetry between a large region and a small region:

Bucovetsky (1991), Wilson (1991)

Further developments

Public choice and Political economy : Brennan and Buchanan (1980) assume that incumbents behave like a Leviathan or a rent seeker.

Tax rates are set at a higher level than in the benevolent case.

Tax competition may act as a limit to Leviathan's behaviour

Tax competition improves welfare because the size of government would be excessive in the absence of competition

1.2 Horizontal fiscal interactions based on information

Salmon (1987)

Besley and Case (1995)

Information asymmetries between voters and their representatives

In a world of imperfect and asymmetric information, voters have restricted possibilities to evaluate the performance of the representatives

Yardstick competition reduces rent seeking (except if finite number of mandates)

1.3 Theoretical aspects of vertical tax externalities

A vertical externality is supposed to arise whenever the tax policy of a given layer of government has an impact on the budget of another layer (Boadway and Vigneault, 1996).

This is especially the case when

(i) the taxes accruing to one level of government give rise to a tax credit or an abatement against taxes collected by an other level of government;

(ii) when one or several layers of government grant tax holidays,

(iii) or finally when several levels of government set their tax rates on a common tax base independently.

Leviathan models generally show that the combined (aggregated) equilibrium tax rate of two overlapping revenue-maximising governments, which share a common tax base, is higher than a single revenue-maximising government tax rate.

Co-occupation of a common tax base results in taxes being too high. Indeed, when a policy-maker raises its tax rate unilaterally, it ignores the loss in revenues due to the induced contraction of the common tax base that the other level of government will suffer from.

More generally, when vertical and horizontal externalities are at work in a federation, they generally distort levels of taxation in opposite directions (Keen, 1998).

On the one hand, inter-jurisdictional tax competition (some observers also call it horizontal tax competition) leads to tax rates being too low since each local government ignores fiscal externalities when it cuts its tax rate in order to attract a mobile base (which is very often capital).

On the other hand, co-occupation of a common tax base results in taxes being too high.

Interjurisdictional tax competition at the local level will reduce the combined tax rate set by the two overlapping governments.

2. The empirical tests of horizontal and vertical tax interactions

Most studies in this literature test for strategic interaction by estimating reaction functions, which show how a government responds to the policy choices of neighbouring governments in setting the level of its own decision variable (Brueckner, 2003).

1. Overview of the spatial econometrics techniques used to test the existence of strategic interaction.
2. Some results of this empirical literature on horizontal and vertical externalities.

Testing for horizontal and vertical externalities

Literature on spatial econometrics: 2 main points have to be dealt with before estimating such spatial models (Anselin, 1988).

1. Definition of a weighting scheme: the weights capture the location of a government *i* relatively to other governments *j*. Variety of weighting schemes: The most common one is the simple contiguity weighting scheme in which interaction is supposed to occur among jurisdictions sharing geographical boundaries. Under such a scheme, $w_{ij}=1$ for jurisdictions j that are contiguous to i, and $w_{ij}=0$ if they do not share any border. Smooth distance decay is taken into account by weights that vary inversely with distance between i and j, $w_{ij}=1/d_{ij}$.

2. Endogeneity of the jurisdictions' fiscal choices. Policy decisions are endogenous and correlated with the error term. The resulting spatial correlation means that OLS estimates would be inconsistent. 2 methods are used to tackle this problem : IV and ML

Empirical survey

- Allers and Elhorst (2005) : About twenty empirical studies on local tax competition using ML and IV

- The median estimate for the response coefficient (reaction function) to a 1% point increase in tax rates in neighboring jurisdictions is .4%

Other references

Marius Brülhart, Sam Bucovetsky and Kurt Schmidheiny, "Taxes in Cities", in: G. Duranton, J.V. Henderson and W. Strange (eds.), *Handbook of Regional and Urban Economics*, Volume 5B: 1123-1196, 2015.