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

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1. Level and time trends
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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, 2019 Edition, European Union, DG Taxation and Customs Union

1. Level and time trends

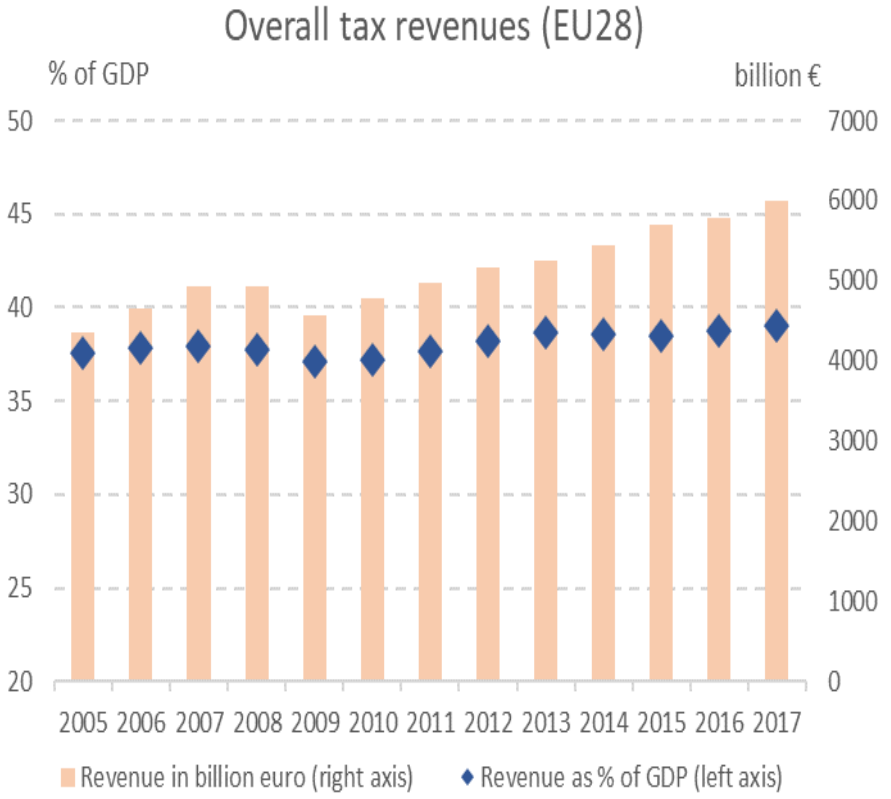
- EU tax revenues are relatively high compared with other advanced economies (See **graph 1**)
- EU 28 and EA tax revenues (as % of GDP) reached a plateau in 2015 but grew slightly in 2017 (see **graph 2**).

Tax revenues

- Tax revenues slightly increased in the EU in 2017 (39% of GDP)

- Over the last decade tax revenues in the EU have increased by 1 pps

- **Purchasing power standard** is an artificial common reference currency unit used in the EU, which eliminates the differences of price levels between countries. A PPS allows to buy the same volume of goods and services in all the countries.



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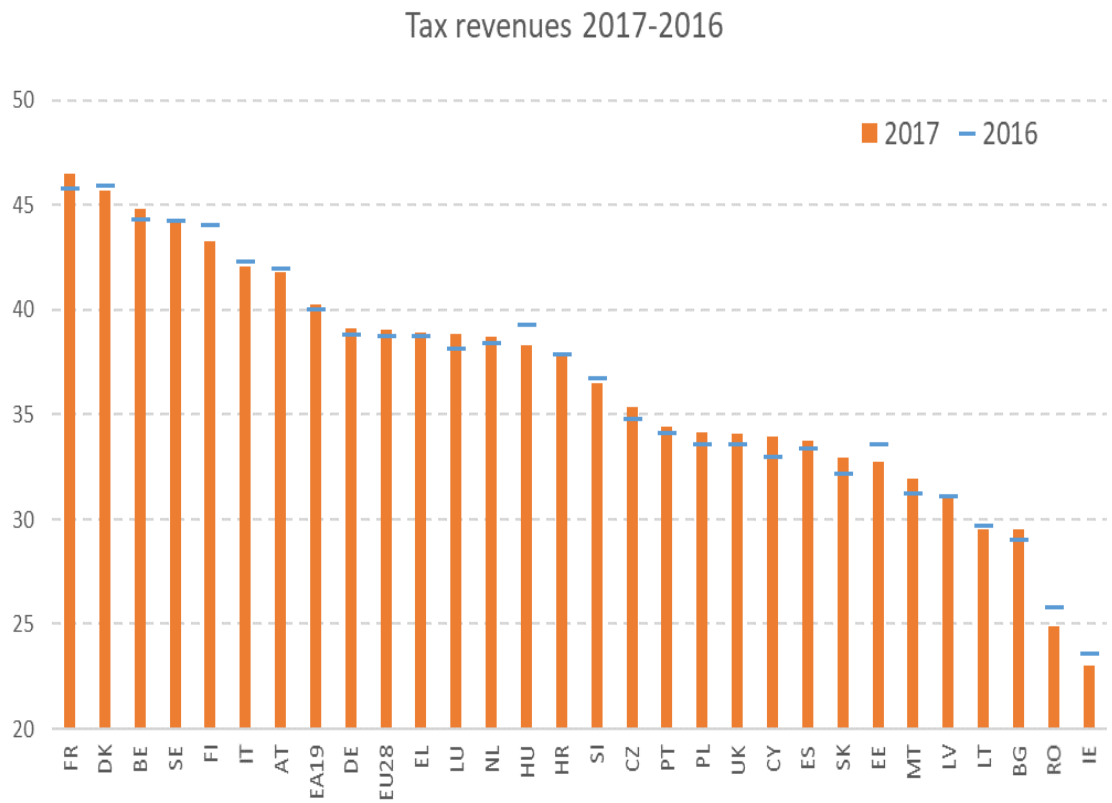
Tax revenues

- 16 Member States show higher tax revenues in 2017 while 11 recorded a tax to GDP fall
- Level of taxation in the EU differs greatly (**Graph 3**)



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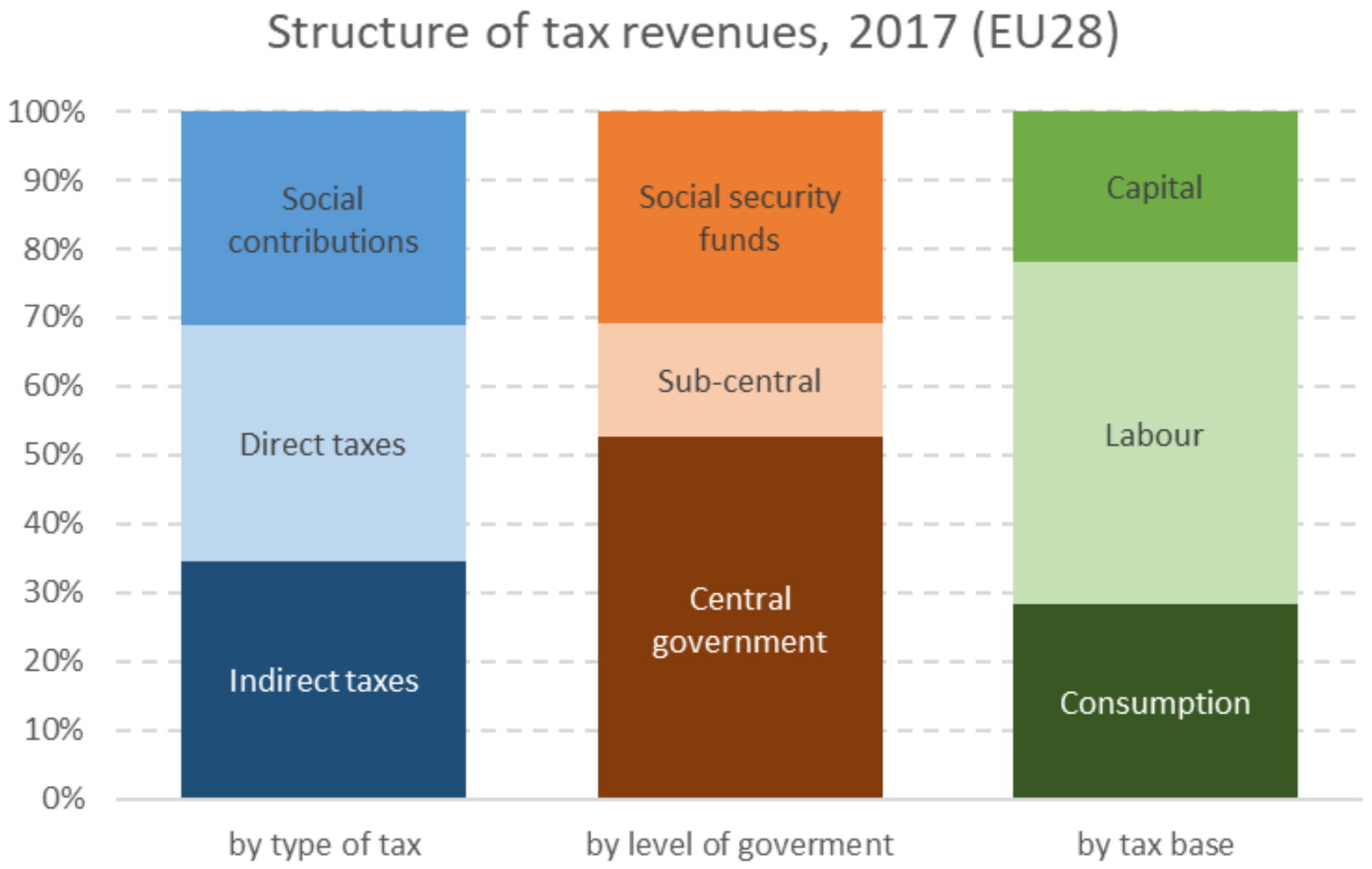
2. Revenue structure



Revenue structure by level of government (1)

- In 2017, 52.3% of the aggregate TR in the EU-28 was claimed by fed or central gov. 30.6% accrued to SS and 16.6% to local or state gov (**Graph 4**)
- Considerable differences in structure from one country to another
- The share of sub-central revenue varies from 1% to 33% of the total.

Revenue structure by type of tax (2)

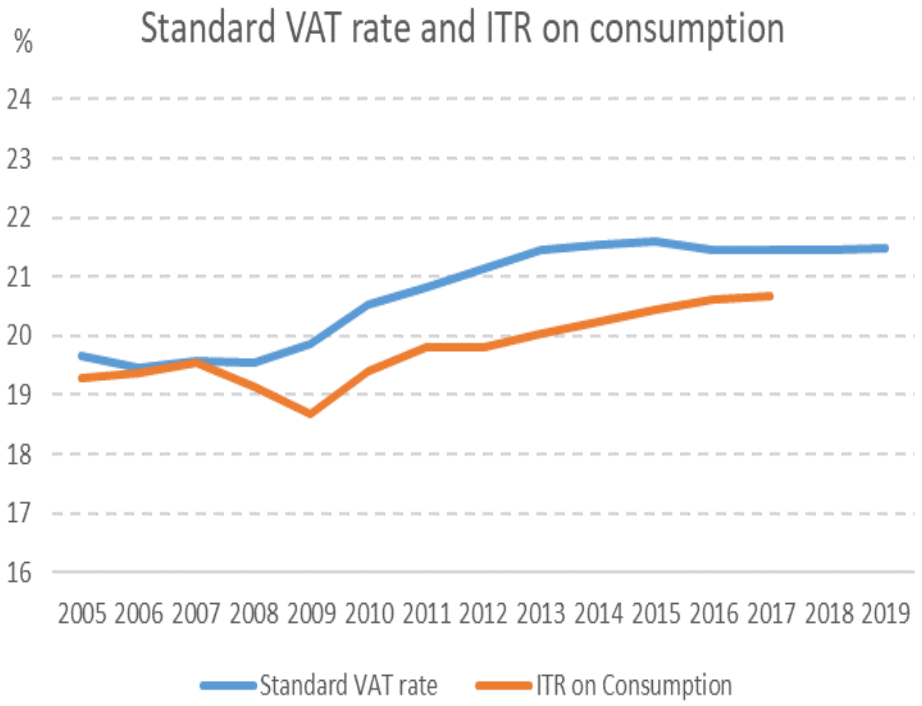
- Taxes are traditionnaly classified as direct or indirect.
- Direct taxes cover personal income taxes, corporate income taxes and other income and capital taxes.
- Indirect taxes relate to VAT, excise duties and consumption taxes, other taxes on products and production
- Tax structures differ between member states (**Graph 5**)
- Where high shares of direct taxes, low level of SS (e.g. DK)
- Where low level of direct taxes (flat tax system), counterbalance by high level of indirect taxes (e.g. Croatia) or SS (e.g. SK)

Revenue structure by type of tax (3)

- 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.
- The structure of taxation differs between member states (**Graph 7**). ½ of all revenues come from consumption taxes (HR, BG). ¼ of all revenues come from capital taxes (LU, UK, MT)

Consumption tax

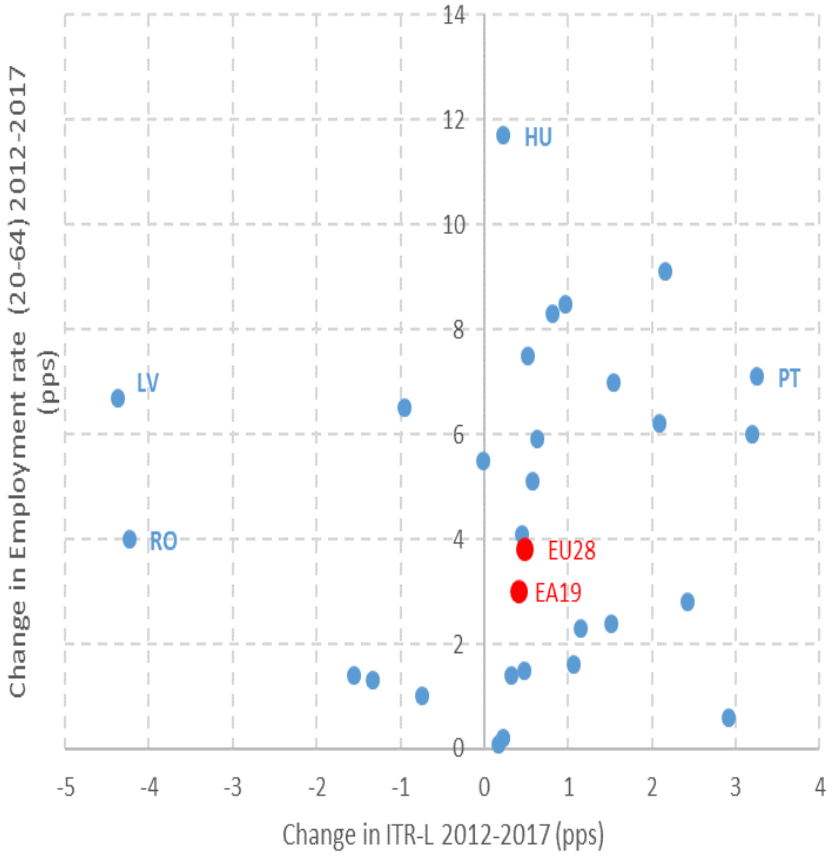
- The implicit tax rate on consumption continues to rise in 2017 (**Graph 8**)
- There are significant differences in the components of taxation of consumption (**Graph 9**)
- VAT rates are stable since 2013 (**Graph 10**)



Labour taxation

In the period 2012-17:

- Labour taxation has slightly increased in the EU
- Employment rate increased in all Member States (almost 4 pps in the EU)
- Labour revenues have increased by 0.1 pps (up to 17.5% of GDP)



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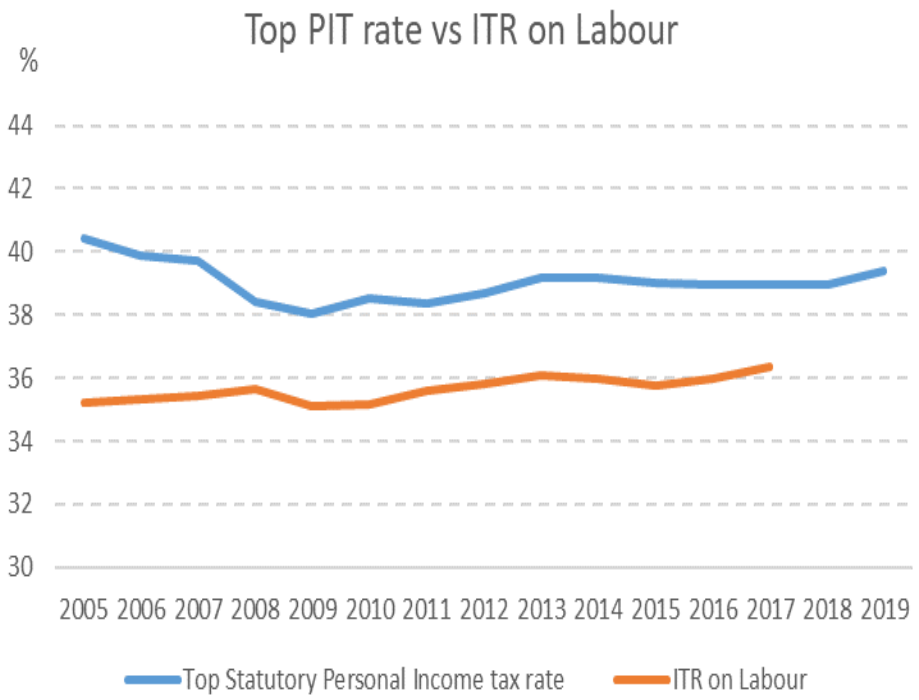
Labour taxation

- Top personal income tax rates have been stable
- The implicit tax rate on labour increased slightly in 2017, while stable over the last decade
- Composition of ITR on labour (**Graph 13**)



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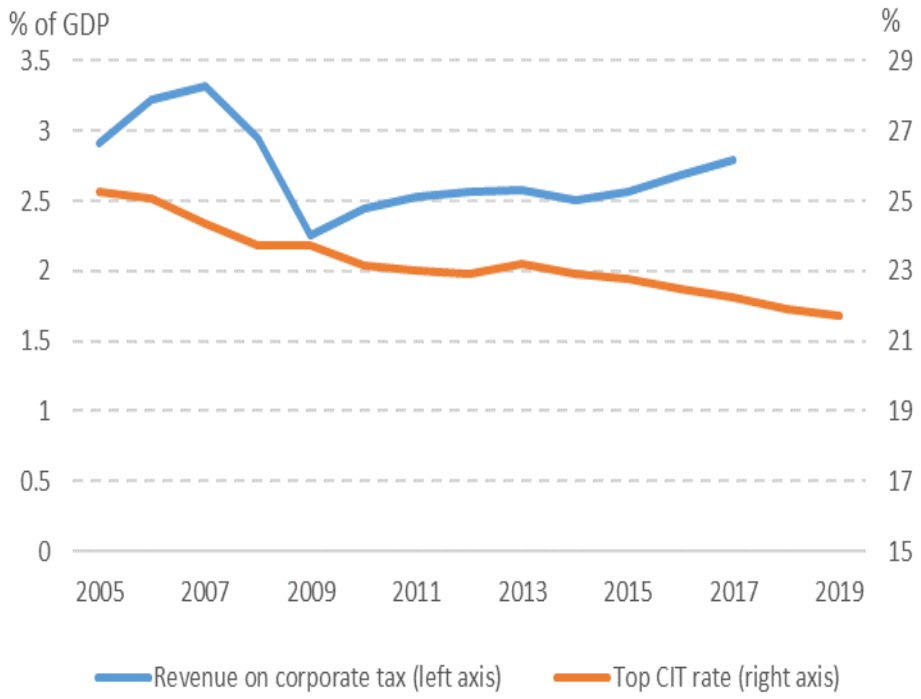
Corporate taxation

- Statutory and effective corporate taxation have been decreasing since 2005
- Corporate income tax revenues dropped after the economic crisis in 2008 but continues a slight increase (**Graph 19**)



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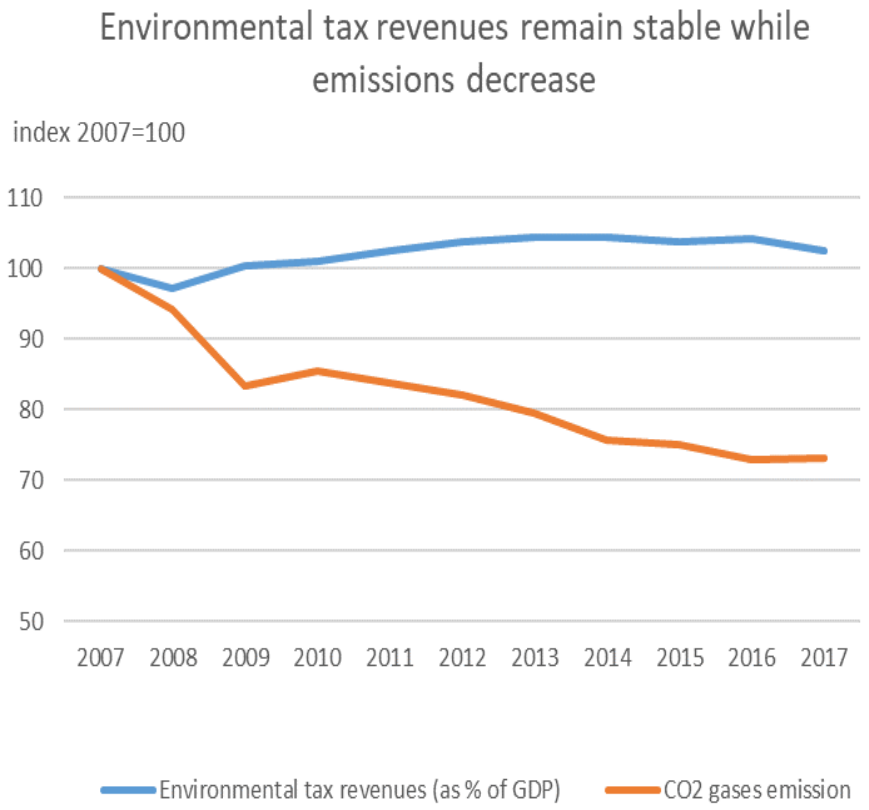
Capital taxation

The ITR on capital (ratio between taxes on capital and capital and savings income) differs between countries (+Fr, - in EE) **(Graph 16**)

Environmental taxation

- Over the last decade revenues of environmental taxes have remained stable (**Graph 20**)
- In total they represent 2.4% of GDP
- There are large differences in composition between member states (**graph 21**)



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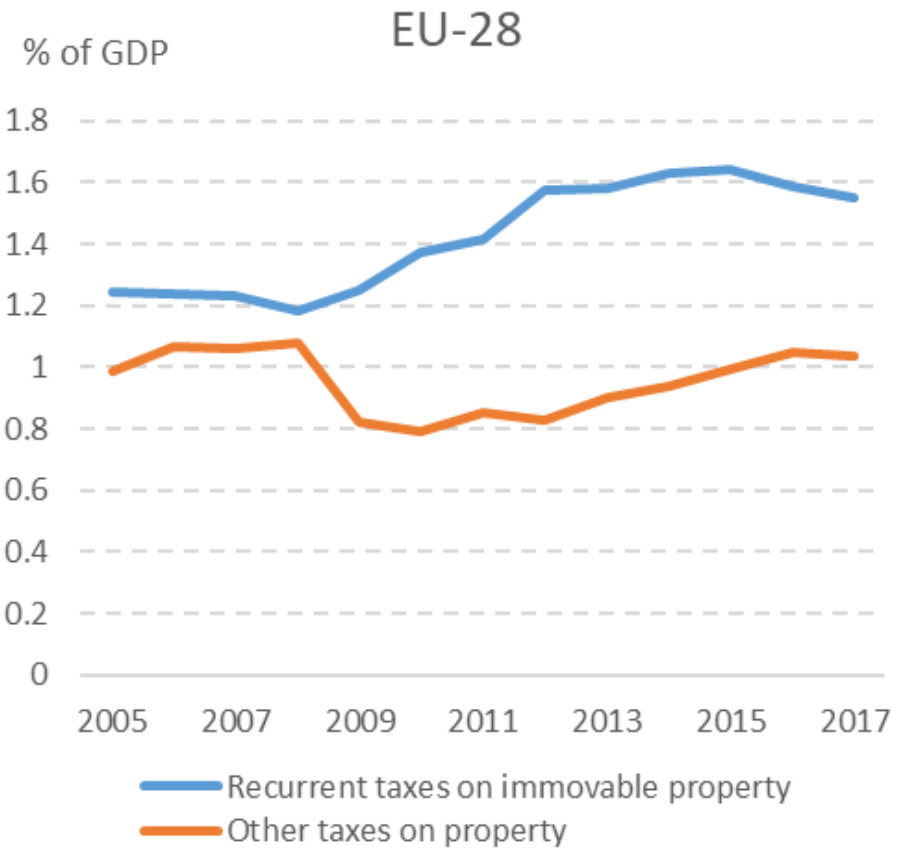
Property taxation

- Revenues due to ‘recurrent taxes’ based on immovable property are decreasing slowly

- ‘Other property taxes’

due to property transfers or transactions are stable and at a similar level than before the crisis



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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 : voting with one's feet
- 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

Horizontal interactions based on fiscal base mobility

Pioneer work of Zodrow and Mieszkowski (1986) and Wildasin (1988, 1989)

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 1:

In equilibrium, the local public good is under-provided. Inefficiency

Result 2 : 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)

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

Asymmetry between a large region and a small region (Bucovetsky, 1991; Wilson, 1991)

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).

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

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)

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.

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, 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.

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 work on horizontal tax interactions

- Many tests on US and European data
- Survey on about twenty empirical studies on local tax competition using ML and IV (Allers and Elhorst, 2005)
- The median estimate for the response coefficient (reaction function) to a 1% point increase in tax rates in neighboring jurisdictions is .4%

Identification issues in spatial econometrics models (Gibbons and Overman, 2010)

- The ML models rely on highly restrictive assumptions regarding the error distribution and the functional form of the reaction function
- Consistent estimation of spatial coefficient requires that the socio economic attributes are exogenous to tax rates
- Spatially correlated error terms or direct effects of WX make the ML estimators inconsistent.
- In IV, spatial autocorrelation in the error term arises. The predictive power of the IV leads to a weak instrument pb, and therefore to a large bias.
- Standard spatial econometrics methods have a tendency to overestimate the degree of interdependence in tax rates
- Reliable estimation of causal spatial interaction requires quasi-experimental settings that provide exogenous variation in the variable of interest

- Reform in Finland (Lyytikainen, 2012)
- Changes in property tax rates are regressed on changes in the average property tax rate of neighboring municipalities
- No tax interactions...

Thank you for your attention

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