Taxation and Economic Growth

Philipp Gerhartinger & Philipp Haunschmid

Wirtschafts-, Sozial- und Gesellschaftspolitik, AK Oberösterreich

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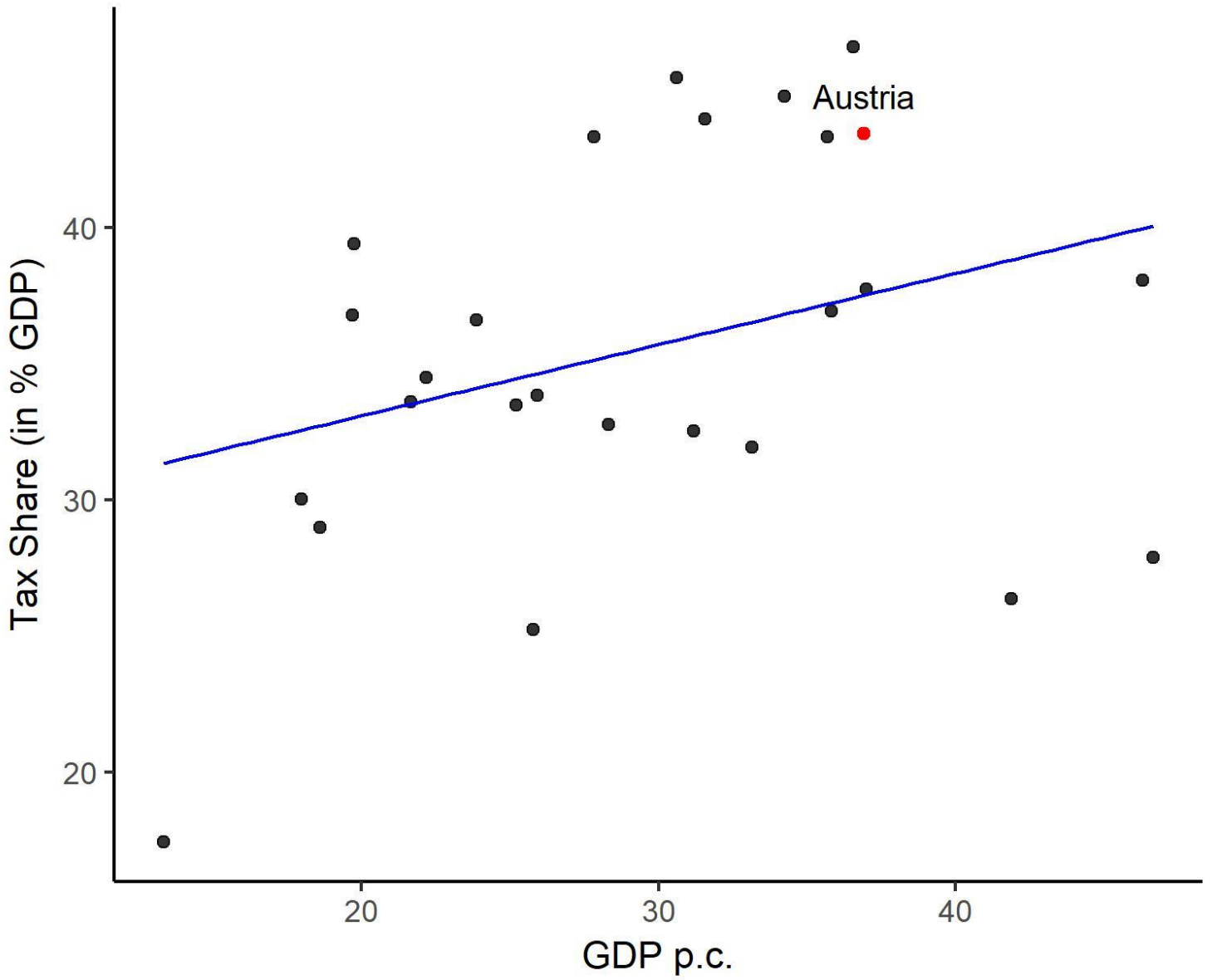
Oberösterreich

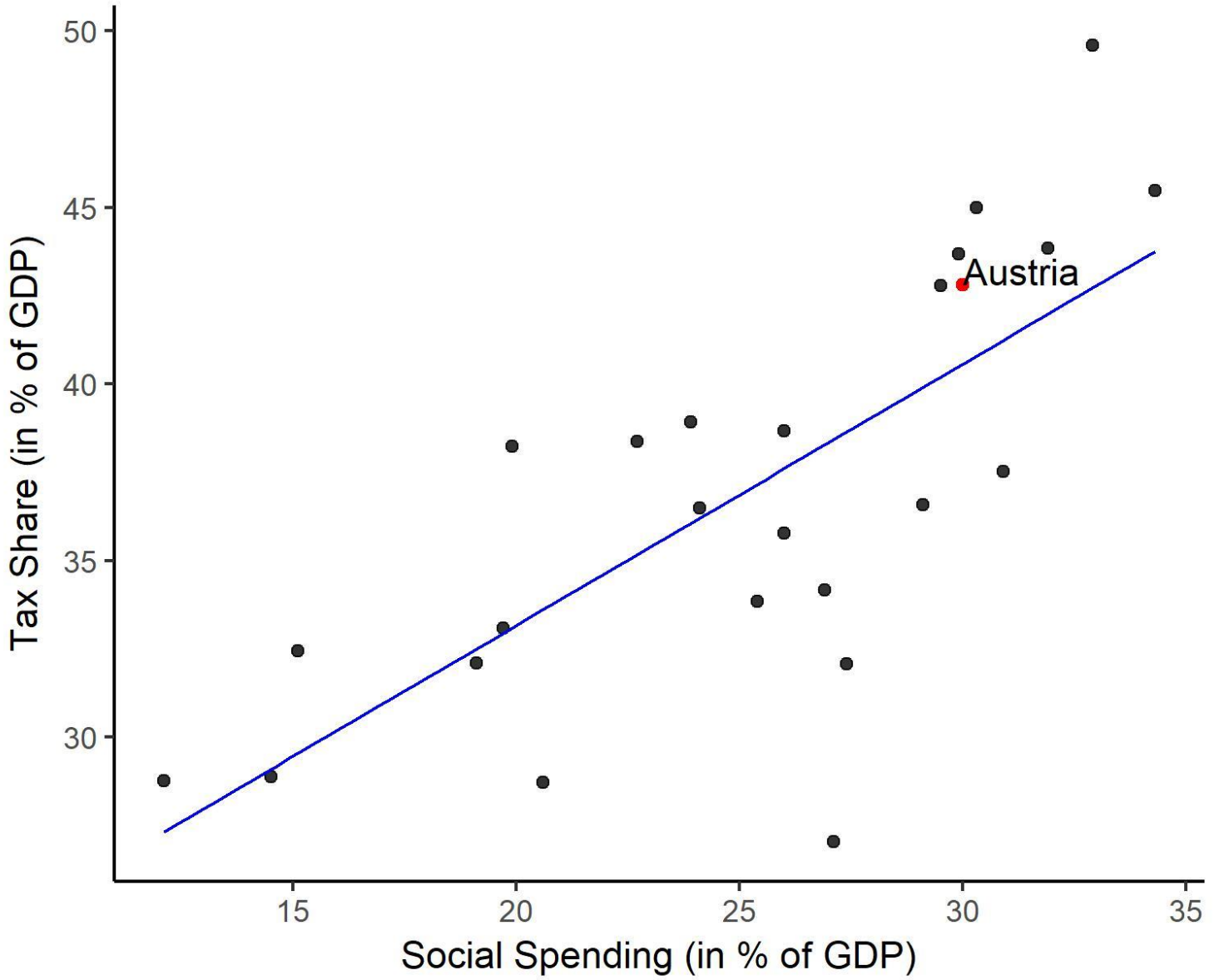
Motivation

- Welfare State under attack from two sides
  - delegetimization of recipients
  - financing side: (quasi-)**economic arguments**
- Tax Share has been in the center of political debate
  - often assumed: negative influence of high level of taxation
- Few influential papers shaped public perception

What is the tax share?

- Sum of all taxes (and social security contributions) in percent of GDP
- Tax share is not a measurement of „burden“
- Difficult international comparison
  - depends on the organisation of social security
  - as well as the tax system
- Higher tax share in rich countries (Wagners Law)
- Spending/distribution/… not considered


Austria
Tax Share (in % GDP)
40
30
20
20
30
40
GDP p.c.


50
45
40
35
30
Tax Share (in % of GDP)
Austria
15
20
25
30
35
Social Spending (in % of GDP)

Theory

- Ambiguous effects of taxation on growth
- Neoclassical argument: overall negative effect on growth
  - taxes distort market outcomes
  - negative incentive for investment, labor supply …
- but: possible positive externalities
  - productivity, security, expectations …
- All about spending?

Empirical Findings

- Influential and widely cited article by Arnold et. al. (TEJ, 2011)
- Negative effect of high taxation on growth
  - control for the structure of tax system
  - used in country specific recommendations
- critically reviewed

- OECD recommends to shift taxation from labor to property
- IMF calls for shifts to taxation of property
- Assumption of negative influence of high taxation on growth remains

Our contribution

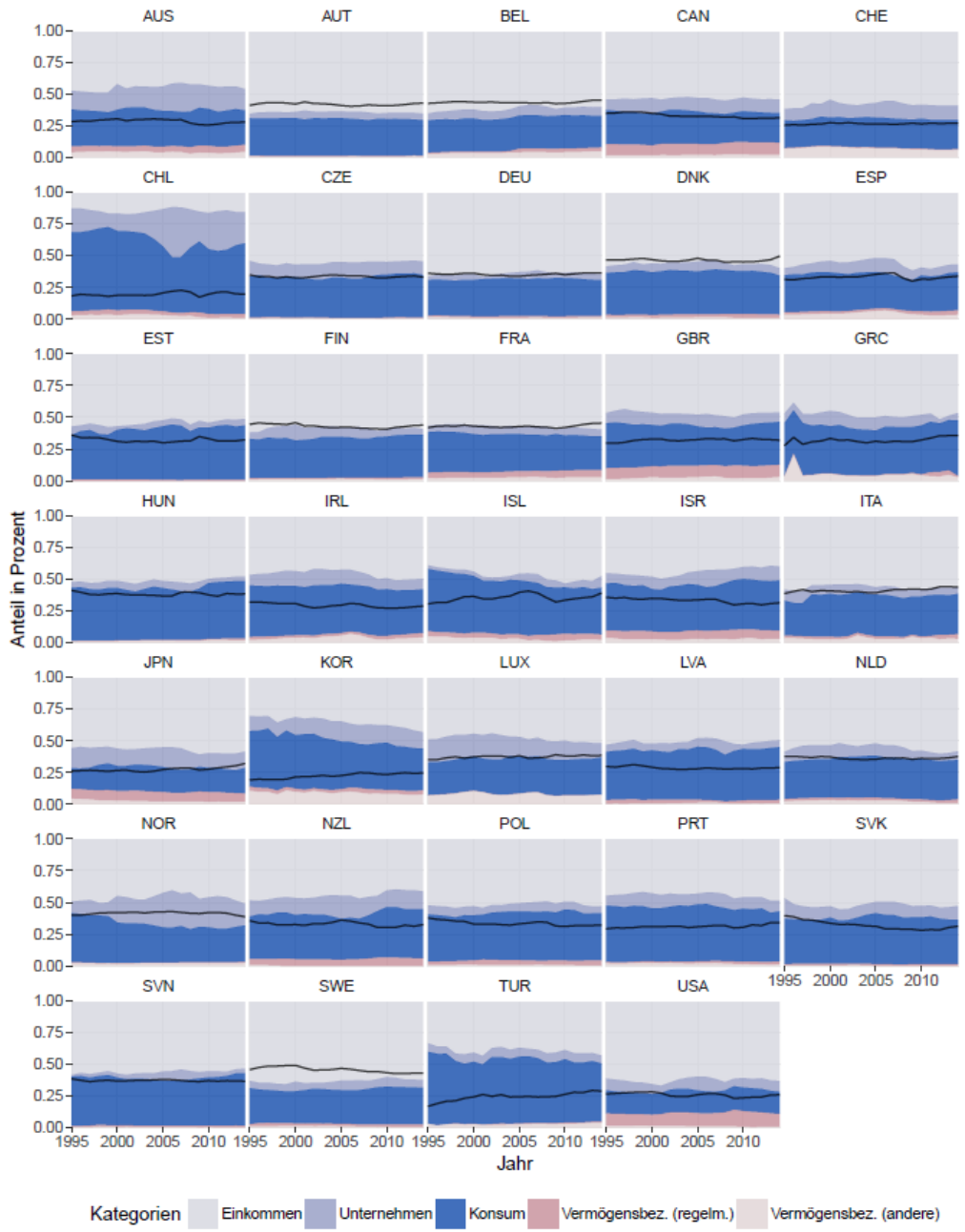
- Evaluation of results
- Larger sample, longer time series
- Methodological contributions
  - spatial econometrics
  - revenue-neutral shifts

$$\Delta \mathbf{y} = \lambda (\mathbf{I}_T \otimes \mathbf{W}) \Delta \mathbf{y} + \mathbf{Tax}\beta + \mathbf{X}\gamma + \mathbf{u}$$

Data

- OECD tax revenue statistics
- sample of 34 OECD countries
- 1995 – 2014

- Controls:
  - Human capital, population growth, gross capital formation, depreciation rate of capital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POL
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SVN
SWE
TUR
USA
1.00
0.75
0.50
0.25
0.00
1995
2000
2005
2010
Anteil in Prozent
Jahr
Kategorien
Einkommen
Unternehmen
Konsum
Vermögensbez. (regelm.)
Vermögensbez. (andere)

	Dependent variable:				
	Δy				
	Sp. Lag (1)	Sp. Lag (2)	Sp. Lag (3)	Sp. Lag (4)	Sp. Lag (5)
ln(y)	$-.082^{***}$	$-.082^{***}$	$-.082^{***}$	$-.082^{***}$	$-.082^{***}$
	(.017)	(.017)	(.017)	(.017)	(.017)
Tax Burden	$-.024$	$-.024$	$-.024$	$-.024$	$-.024$
	(.079)	(.079)	(.079)	(.079)	(.079)
Income Tax	$-.145$	.322	$-.276^{***}$	$-.295^{***}$	
	(.133)	(.298)	(.069)	(.071)	
Corporate Tax	.150	$.617^{*}$	.019		$.295^{***}$
	(.143)	(.295)	(.063)		(.071)
Consumption Tax	.131	$.597^{*}$		$-.019$	$.276^{***}$
	(.148)	(.298)		(.063)	(.069)
Property Tax (rec.)	$-.467$		$-.597^{*}$	$-.617^{*}$	$-.322$
	(.334)		(.298)	(.295)	(.298)
Property Tax (other)		.467	$-.131$	$-.150$	.145
		(.334)	(.148)	(.143)	(.133)
λ	$.400^{***}$	$.400^{***}$	$.400^{***}$	$.400^{***}$	$.400^{***}$
	(.061)	(.061)	(.061)	(.061)	(.061)
Controls†	Yes	Yes	Yes	Yes	Yes
Shift of	Property (other)	Property (rec.)	Consumption	Corporate	Income

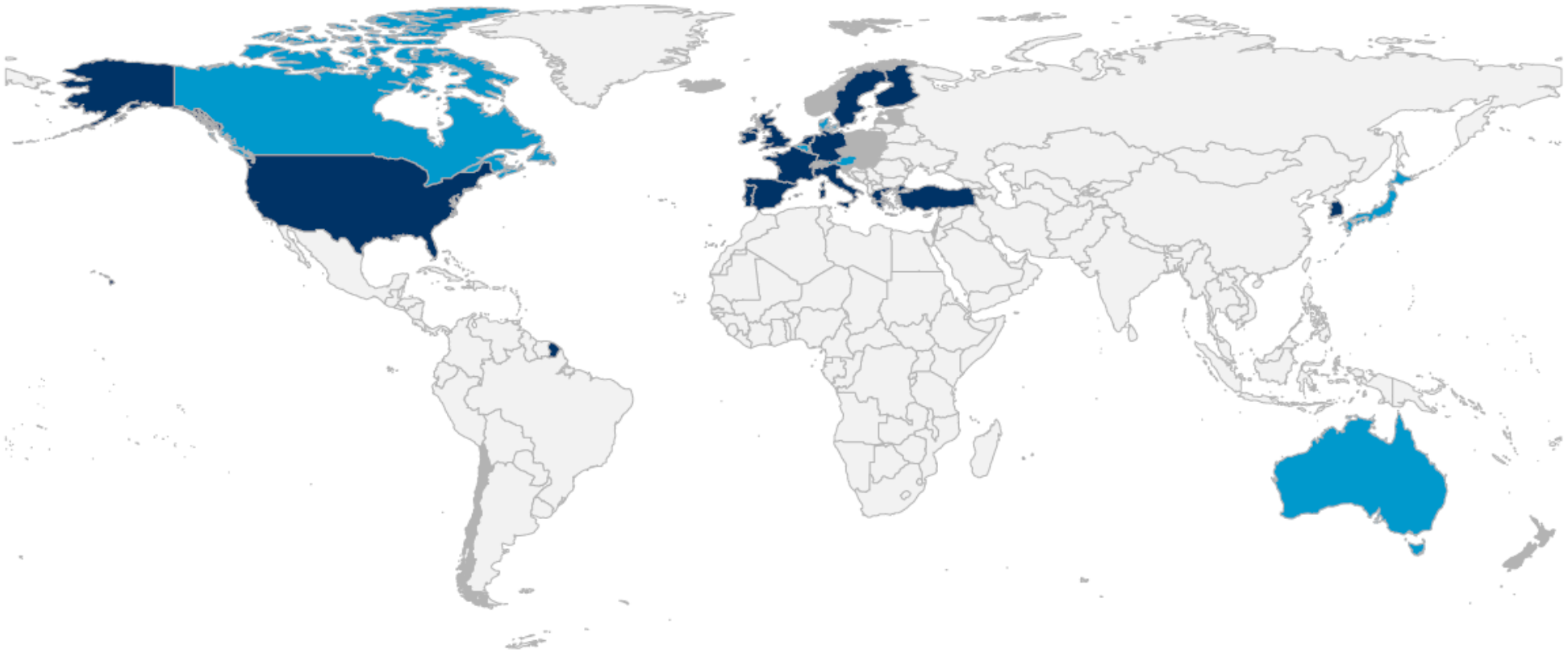
Note: Fixed effects, two-way specification (individual and time fixed effects). †*Additional controls: Human capital, population growth, depreciation rate of capital, share of gross capital formation. Revenue-neutrality of changes in different tax positions is achieved by letting omitted taxes vary, ceteris paribus. Standard errors in parenthesis, levels of significance:* *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Table 1: *Estimated effects of taxation on the growth rate of GDP per capita (1995–2014, 34 countries).*

Results

- No (negative) effect of tax share on growth
- Structure of tax system matters
  - negative effect of high labor taxes
  - property taxes are neutral

Thank you!



No data on taxation is available for light grey colored countries. Economies indicated in dark grey have not yet been categorized empirically with respect to their growth regime. Dark blue denotes wage-led regimes, light blue profit-led.

	Dependent variable:				
	Δy				
	Sp. Lag (1)	Sp. Lag (2)	Sp. Lag (3)	Sp. Lag (4)	Sp. Lag (5)
ln(y)	−.140***	−.140***	−.140***	−.140***	−.140***
	(.026)	(.026)	(.026)	(.026)	(.026)
Tax Burden (p.l.)	.040	.040	.040	.040	.040
	(.213)	(.213)	(.213)	(.213)	(.213)
Tax Burden (w.l.)	.286**	.286**	.286**	.286**	.286**
	(.108)	(.108)	(.108)	(.108)	(.108)
Income Tax (p.l.)	.012	−.064	−.431	−.078	
	(.613)	(.601)	(.259)	(.182)	
Income Tax (w.l.)	−.063	.433	−.172	−.471***	
	(.130)	(.353)	(.097)	(.116)	
Corporate Tax (p.l.)	.091	.014	−.353		.078
	(.662)	(.600)	(.265)		(.182)
Corporate Tax (w.l.)	.408**	.904**	.299*		.471***
	(.157)	(.344)	(.124)		(.116)
Consumption Tax (p.l.)	.443	.367		.353	.431
	(.605)	(.687)		(.265)	(.259)
Consumption Tax (w.l.)	.109	.605		−.299*	.172
	(.149)	(.358)		(.124)	(.097)
Property Tax (rec., p.l.)	.077		−.367	−.014	.064
	(1.031)		(.687)	(.600)	(.601)
Property Tax (rec., w.l.)	−.496		−.605	−.904**	−.433
	(.375)		(.358)	(.344)	(.353)
Property Tax (other, p.l.)		−.077	−.443	−.091	−.012
		(1.031)	(.605)	(.662)	(.613)
Property Tax (other, w.l.)		.496	−.109	−.408**	.063
		(.375)	(.149)	(.157)	(.130)
λ	.184*	.184*	.184*	.184*	.184*
	(.081)	(.081)	(.081)	(.081)	(.081)
Controls†	Yes	Yes	Yes	Yes	Yes
Shift of	Property (other)	Property (rec.)	Consumption	Corporate	Income

Note: Fixed effects, two-way specification (individual and time fixed effects). †Additional controls: Human capital, population growth, depreciation rate of capital, share of gross capital formation. Growth regime is indicated by p.l. (profit-led) and w.l. (wage-led). Revenue-neutrality of changes in different tax positions is achieved by letting omitted taxes vary, ceteris paribus. Standard errors in parenthesis, levels of significance: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Table 2: *Estimated effects of taxation on the growth rate of GDP per capita, controlling for different growth regimes (1995–2014, 21 countries).*