

Fiscal Consequences of Corporate Tax Avoidance

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Motivation

Big picture topic: the consequences of profit shifting for tax revenue structure

We know that:

- ▶ There is a large amount of tax avoidance, especially amongst MNEs;
(Panama & Paradise papers, 2015; Tørsløv et al., 2022; Bilicka, 2019)
- ▶ The extent of profit shifting has been increasing over time;
(Clausing, 2016; OECD, 2017)
- ▶ The estimates of the tax revenue losses are large.
(Tørsløv et al., 2022; Garcia-Bernardo & Jansky, 2021)

Profit shifting is at the forefront of **political debate**; e.g. Global Minimum Tax

... **BUT** what are the consequences of tax avoidance practices for where governments derive their tax revenues from?

This paper

Research question: How does profit shifting affect tax revenue structure?

Quasi-experimental variation: cross-country differences in profit shifting & changes in municipal tax rates in Germany, 2008 - 2019

Main findings:

① Country level:

- ▶ ↑ profit shifting, ↓ share of corporate tax revenues
- ▶ ↑ profit shifting, ↑ share of individual and VAT tax revenues

② Municipal level:

- ▶ municipalities with higher tax rates and more tax aggressive MNCs have a lower share of tax revenue from those firms
- ▶ tax rate ↑ a share of tax revenue derived from that tax ↓ but only for municipalities with a large presence of aggressive MNCs

COUNTRY-LEVEL CORRELATIONS

Data and measures used

Focus on relationship between tax revenue structure and profit shifting.

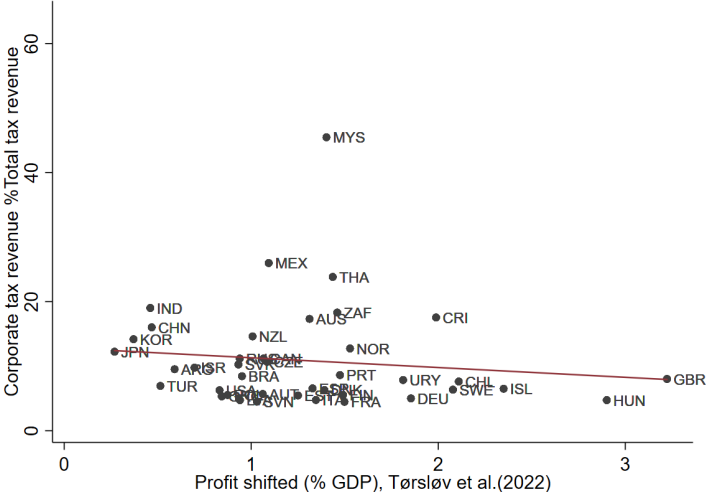
Tax revenue structure:

- ▶ % of tax revenues coming from different sources
- ▶ UNU WIDER + IMF GFS data

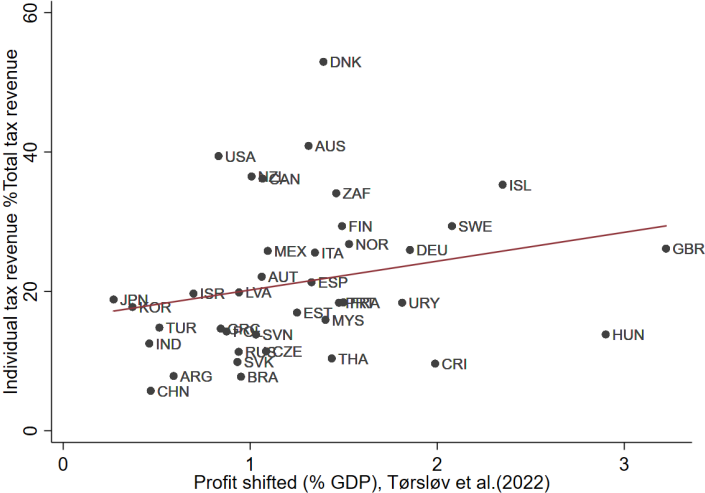
Profit shifting estimates:

- ▶ from Tørsløv et al. (2022) for 2015 - 2018 for 40 countries
- ▶ they use foreign affiliates' statistics to show that affiliates of foreign MNCs are substantially more profitable than local firms
- ▶ use these differences in profitability to calculate share of shifted profits as a fraction of GDP

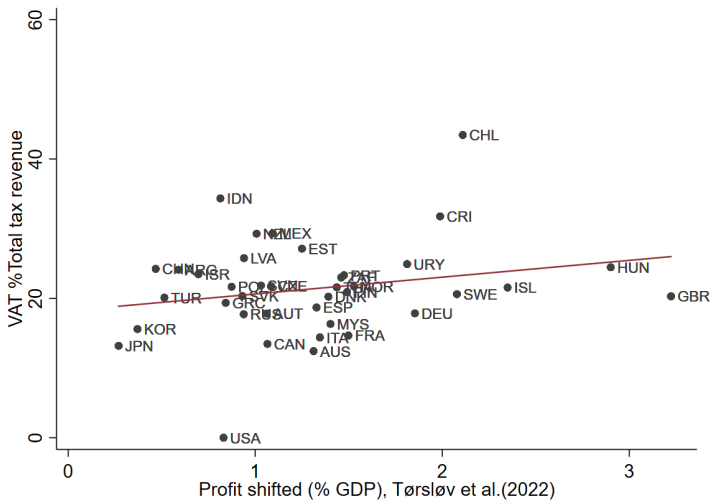
Corporate tax revenues and profit shifting



Individual tax revenues and profit shifting



VAT tax revenues and profit shifting



Magnitudes

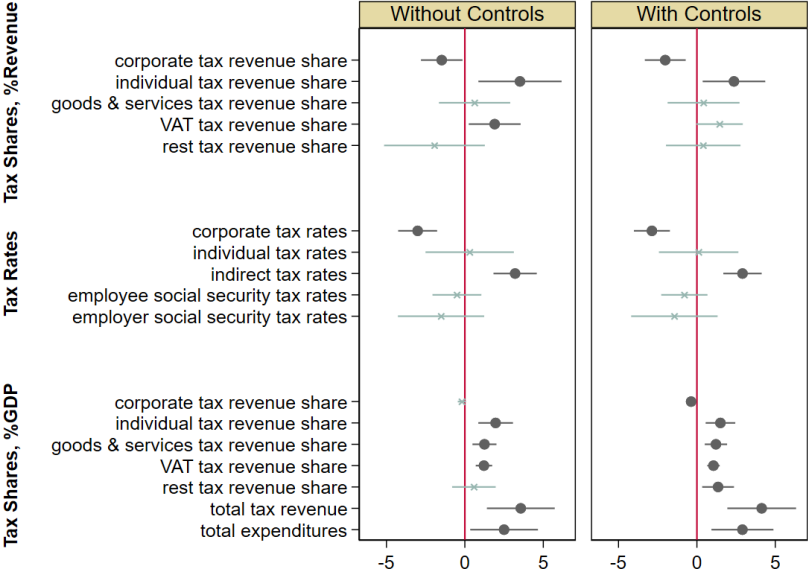
	(1)	(2)	(3)	(4)	(5)
	corp.share	indiv.share	gs.share	vat.share	rest.share
Profit shifted % GDP	-1.475* (0.670)	3.516** (1.342)	0.620 (1.150)	1.903* (0.836)	-1.938 (1.623)
Year FE	✓	✓	✓	✓	✓
# Observations	146	146	151	145	137

Summary: 1pp ↑ in the amount of profits shifted

- ▶ ↓ the share of corporate tax revenues by 1.5pp
- ▶ ↑ the share of individual tax revenues by 3.5pp
- ▶ ↑ the share of VAT tax revenues by 1.9pp

Substitution between corporate and individual/VAT revenues.
Overall positive effect on total tax revenues.

Magnitudes



MUNICIPAL-LEVEL ANALYSIS

Institutional framework

German tax revenue is collected at the federal, state, and municipal level.

- ▶ federal and state (81%): personal and corporate income, VAT (some is redistributed)
- ▶ municipal (15%): trade tax and property tax

Municipal tax revenue:

- ▶ trade tax (38%): tax on companies' profits (base rate + muni multiplier)
- ▶ property tax (14%): tax on value of property (base rate + muni multiplier)
- ▶ rest apportioned from federal and state
- ▶ municipalities apportion 10% of their revenues back to state and federal govt

Municipalities control trade and property tax **rates** and **revenues**.

Data

Revenue structure using municipal data:

- ▶ German Office of Statistics dataset for 11,000 municipalities over 2008-2019
- ▶ trade tax, property tax, total tax

Tax avoidance measure using firm-level data from Orbis:

- ▶ Obtain location of over 3.9 million German firms
- ▶ We match addresses to municipalities using GIS software (85% match)
- ▶ For each firm we identify their ownership status (domestic, MNCs)
- ▶ Classify MNCs into aggressive — tax haven in their structure — and not Bilicka and Scur; 2021; Gumpert et al.; 2016; Hines and Rice; 1994
- ▶ Approx 20,000 subs; 8,000 of which belong to more aggressive MNCs

Unit of analysis: municipality-year

- ▶ collapse the data on municipal level
- ▶ tax avoidance: share of aggressive MNCs in each municipality

Identification strategy

To **identify** the relationship between tax avoidance and revenue structure at the municipal level, we use the following variation:

- ▶ changes/differences in tax rates across municipalities
- ▶ difference in the share of aggressive MNCs across municipalities

We have **two sets of results**:

- ▶ cross-sectional variation

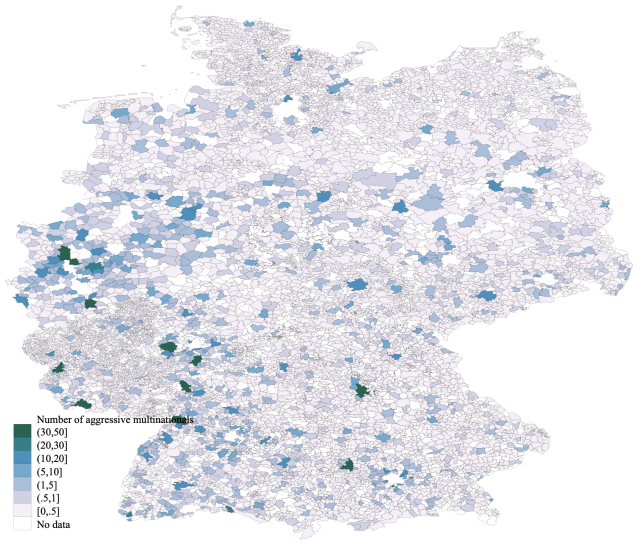
$$Taxrev_{it} = \alpha + \beta_1 MNCsh_i + \beta_2 taxr_{it} + \beta_3 MNCsh_i \times taxr_{it} + \gamma_1 X_{it} + \eta_i + \delta_t + \varepsilon_{it}$$

- ▶ event study evidence: analyse the effects of tax rate increases (94% of tax changes are increases)

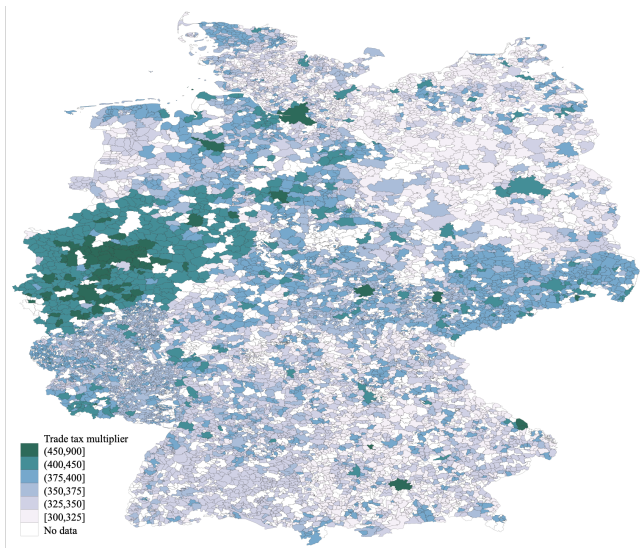
Using the following **outcome variables**:

- ▶ share of trade tax revenues in all tax revenues
- ▶ trade tax and property revenues
- ▶ total tax revenues

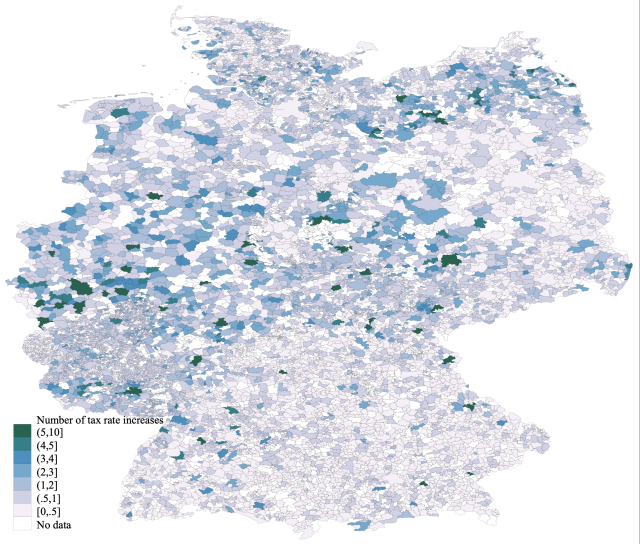
Number of aggressive multinationals across municipalities



Trade tax multipliers



Number of trade tax rate increases



Cross-sectional variation: results

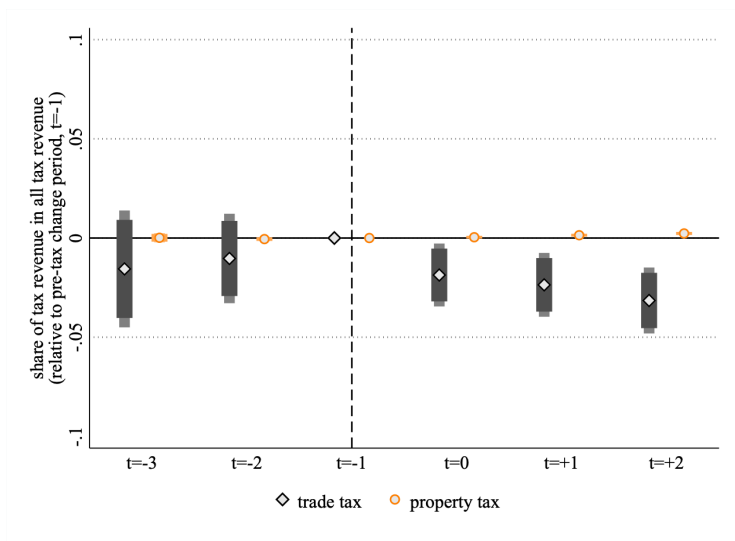
Panel A: Aggressive MNCs

	(1) trade tax share	(2) ln(trade tax rev)	(3) ln(prop tax rev)	(4) ln(tot tax rev)
tax rate \times agg MNC share	-0.072* (0.043)	-0.172*** (0.064)	0.007 (0.018)	-0.199* (0.107)

Panel B: All MNCs

tax rate \times MNC share	0.002 (0.029)	0.004 (0.057)	0.007 (0.011)	-0.014 (0.063)
Year FE	✓	✓	✓	✓
Municipality FEs	✓	✓	✓	✓
Municipality controls	✓	✓	✓	✓
Observations	36362	80939	82203	36419
# firms	9188	9382	9272	14363
Mean	0.299	5.945	2.902	7.470

Event studies: share of trade tax in all tax revenues



Event studies: Components of this change



Discussion

Key takeaways:

- ▶ the ability of firms to shift profits is strongly related to tax revenues structure
- ▶ countries that are more exposed to profit shifting MNCs choose to rely more on indirect taxes
- ▶ municipal level: profit shifting is causally linked with lower revenue shares coming from corporations through the trade tax

Policy implications:

- ▶ We show how governments raise revenues in the absence of corporate tax revenues from MNCs and which groups bear the burden of tax not paid by MNCs
- ▶ If indirect taxes are more regressive, this may amplify inequalities
- ▶ Presence of tax aggressive firms reduces local capacity to collect tax revenues from those firms

Thank you! Thoughts welcome!

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