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Abstract

We study the distributional effects of local income taxes. Our model features imperfectly mobile renters who differ in their income, their housing expenditure share, and their valuation for a public good financed by a linear local income tax. Estimation is based on micro-level rental prices, taxpayer counts in different income brackets and municipal income taxes in Switzerland, whose institutional setting allows us to instrument local tax rates. We embed reduced-form tax-base and rental-price elasticities in a structural estimation of non-homothetic preferences for local public goods. We find strong evidence of tax capitalization in rental prices and a hump-shaped relationship between household income and public-good preferences. We conclude that even with proportional taxation the burden of local income taxes is borne almost entirely by landlords and renters in the top income quintile.

Motivation

The distributional effects of taxation are among the most important questions of public finance. At the national level, distributional effects arise most evidently through the progressivity of tax schedules, differential avoidance opportunities and labor-market responses. In this paper, we focus on two alternative mechanisms that are more relevant for tax incidence at the local level: **income-dependent preferences for locally financed public goods**, and capitalization of tax rates into housing prices combined with **non-homothetic housing demand**. Changes in personal tax rates are taken to be linear, and residential location choices are considered as the only (and income invariant) avoidance option.

Model and estimation

We estimate a **structural model of local tax incidence on absentee landlords and on heterogeneous renters**, informed by estimates of local housing demand and supply elasticities. The model features imperfectly mobile renter households with Stone-Geary utility over housing (as in Schmidheiny, 2006) and income-specific tastes for locally provided public goods. Supply is assumed to be isoelastic.

Housing demand and supply elasticities are estimated in a simultaneous-equation model with local income tax rates as a demand shifters and the share of developed land and a measure of regulatory efficiency as supply shifters. Tax rates and rental prices at the level of Swiss municipalities offer rich identifying variation (see Figure 1; and Eugster and Parchet, 2018). Municipal tax rates are instrumented in a spatial-difference model using neighbor-canton tax rates as instruments.

Finally, we estimate **reduced-form tax-base and rental-price elasticities** with respect to local tax rates, again instrumented with neighbor-canton tax rates (see Table 1), and we apply the classical minimum distance estimator to back out preference parameters for the local public good and implied welfare effects (see Figure 2).

Figure 1. Descriptive Maps

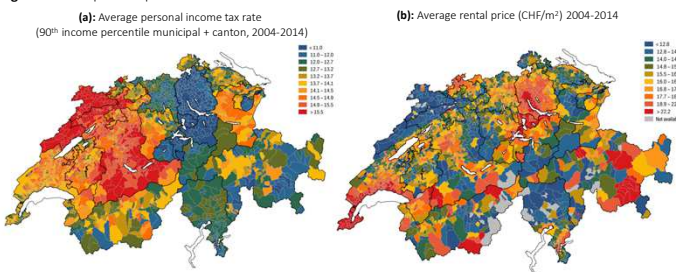


Table 1. Reduced Form Estimates of tax-base elasticities and tax capitalization

Dependent variable:	Below-median income households	50-80% income households	Next 10% income households	Top 10% income households	Rental prices
Log municipal income tax rate	0.033** (0.015)	-0.011 (0.030)	-0.187** (0.089)	-0.304** (0.134)	-0.582 (0.617)

Notes: 3SLS estimation with amenity controls and canton fixed effects. 2,004 observations. Standard errors in parentheses. The local personal income tax rate differentials are instrumented by state personal income tax rate differentials. ***p<0.01, **p<0.05, *p<0.1.

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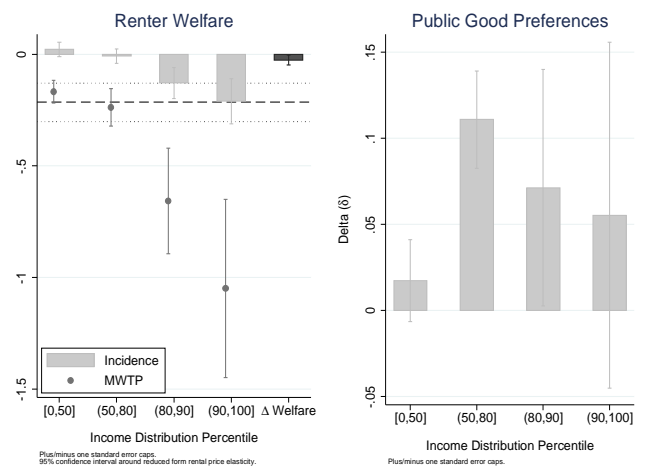
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Main results

The results of our structural estimation are summarized in Figure 2.

- The **marginal willingness to pay rent** (MWPR) in return for lower income tax rates increases (in absolute value) with income.
- By comparing the MWPR across income classes with the structurally estimated rental-price tax elasticity (horizontal black dashed line), we can compute the incidence each income class experiences for a given income tax rate increase: the **negative incidence of tax increases is almost fully borne by households in the top income quintile**.
- We obtain a hump-shaped relationship between preferences for the local public good and income: **upper-middle-income households appear to value locally provided public services most strongly**, while below-median-income households appear to value them comparatively little.

Figure 2. Structural parameters and elasticity estimates



Discussion

Our study contributes to three strands of the literature.

- We partly build on Suárez Serrato and Zidar (2016), who estimate the incidence of U.S. state corporate tax rates on workers, landowners and firm owners. Our analysis differs along the following dimensions. We study the incidence of local taxes that influence *household* (worker) residential location decisions *within* a given labor market. Wages are therefore exogenous in our case. Instead, we take account of the provision of public services. Moreover, we address a key identification issue by instrumenting local tax rates.
- We contribute to the well developed empirical literature on the capitalization of taxes into housing prices. Especially close is the paper by Basten, Ehrlich and Lassmann (2017), who also use Swiss micro-geographic data to estimate the capitalization of local income taxes into rental prices. They apply a border discontinuity framework and assume that housing demand is locally perfectly elastic. They use reduced-form estimates of house price effects directly to measure willingness to pay and assume the incidence of the tax to be fully borne by the immobile factor.
- We provide new evidence on mobility responses to taxes by households across income classes. The literature has to date mainly concentrated on specific income brackets or professions (see e.g. Moretti and Wilson, 2017; Schmidheiny and Slotwinski, 2015), whereas we consider responses across all income percentiles and household types.

References

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