EUROMOD 20th Anniversary Conference

UNIVERSITÄT SALZBURG

Shifting the tax burden from labor to property: The case of Germany

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Introduction

The literature suggests that taxes levied on consumption or property are less distortionary and growth-harming than those levied on corporate or labor income (Diamond & Mirrlees 1971, Slemrod 1990, Feldstein 2006, Mankiw et al. 2009). Despite these findings, the scope for shifting taxes to more growth-friendly revenue sources appears underused in many European countries. Germany in particular has been identified as a country which makes only little use of property taxes, while having a high implicit tax rate on labor. The use of outdated cadastral values to determine property tax liabilities are often said to be an important reason why revenues from taxing property are low in Germany (Spahn 2004, Färber et al. 2014, Blöchliger 2015). Indeed, the valuation of property defining the tax base dates back to 1964 in Western Germany and to 1935 in Eastern Germany.

This study aims to examine the revenue – and distributional effects of a property tax reform that uses market values to determine property tax liability. We compare pre- and post-reform property tax liabilities as well as equivalised disposable incomes across the income distribution of households. Further, we simulate two revenue-neutral scenarios in which the additional revenue is used to lower social insurance contributions. All simulations are carried out using EUROMOD – the tax-benefit microsimulation model for EU member states.

Statistical Matching

Simulating such a proposed policy reform is difficult since there exists no data source which provides joint information on both current property tax liability (based on cadastral values) and the actual market value of the property. However, the HFCS (Household Finance and Consumption Survey) provides extensive information regarding the value of properties owned. In addition, the default EUROMOD input dataset, EU-SILC (European Union Statistics on Income and Living Conditions), contains information on property taxes currently paid. In order to conduct our simulation analysis, we match the two representative survey micro datasets via a set of overlapping common matching variables.

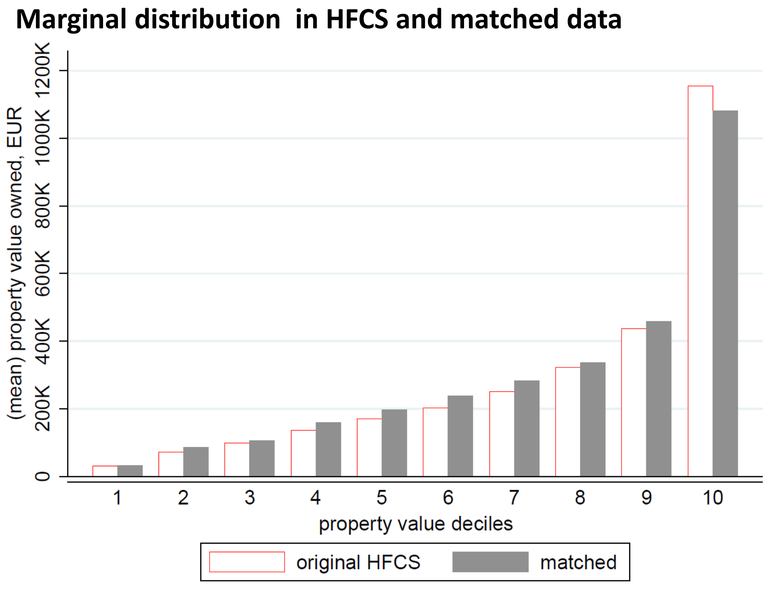
	matching variables	tax liability	property value
SILC	observed	observed	unobserved
HFCS	observed	unobserved	observed
matched dataset	observed	observed	observed

We use a non-parametric hot deck matching procedure which assigns each observation in HFCS to at least one "nearest neighbor unit" in SILC that is most similar with respect to the matching variables. "Nearest" is defined as the associated unit that shows the smallest Mahalanobis distance metric based on our set of matching variables. The scale-invariant Mahalonobis distance transforms data into uncorrelated, standardized variables with variance equals to 1 and then computes for the transformed data ordinary Euclidean distance (McLachlan 2004). As a robustness check we applied two other matching procedures. A mixed method regression based approach and a propensity score matching yield qualitatively similar results.

Assessment of Result

In order to assess validity of our matching procedure we start with two common validity test: Is the marginal distributions of property value as well as the joint distribution of matching variables and property value preserved in the matched dataset?

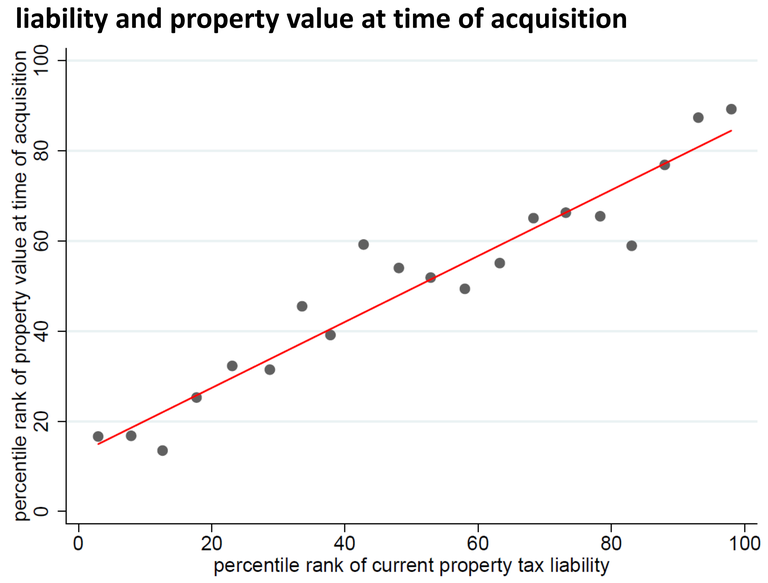
Marginal distribution in HFCS and matched data



A two-sample Kolmogorov-Smirnov could not reject the null hypothesis of equal marginal distributions. Regarding joint distributions of the matching variables and property value we run two separate univariate regressions of property value (dependent var.) on each matching variable (independent var.). One regression uses original HFCS data, the other the matched dataset. We then perform a Wald test on equality of the two estimated coefficients from both datasets. Neither via a mean regression nor a 0.75 quantile regression we could detect significant differences in joint distribution for most matching variables.

Additionally, our data allows us to make use of auxiliary information. Specifically, we use the variable *property value at time of acquisition* (in HFCS) as an instrument for the current property tax liability (in SILC). The idea is that for survey respondents who acquired their property around the year of the last general assessment this HFCS variable should be highly correlated with the cadastral value of this property and thus, with current property tax liability. For this subsample we compare the post-match rank position of property value at time of acquisition with the rank position of current property tax liability.

Post-match relationship between current property tax liability and property value at time of acquisition



Given that we have no information about improvements made to property we consider this a sufficiently high degree of similarity (Spearman's rho = 0:74). Our matched dataset should allow for valid inferences, especially on a more aggregated level such as income deciles.

EUROMOD Simulations

We simulate three different scenarios:

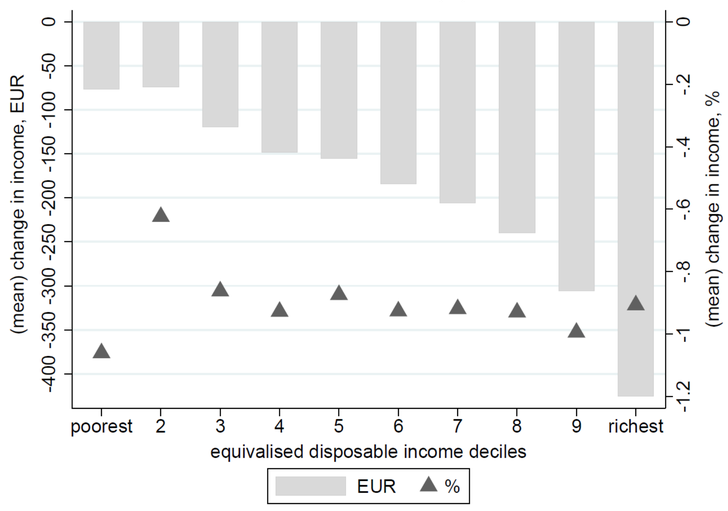
(1) Property tax scheme based on market values, **irrespective of revenue neutrality**

(2) Revenue neutrality through a employee **lump sum** social insurance contribution (SIC) credit

(3) Revenue neutrality through a **proportional reduction** of employee SIC

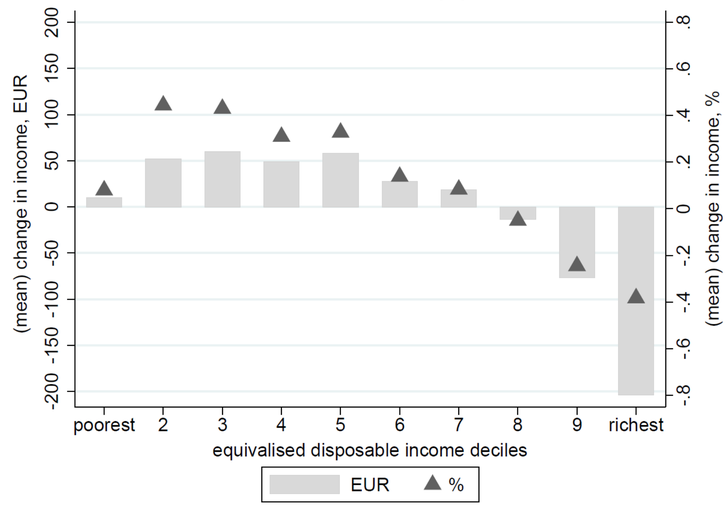
While property tax eligibility (ownership rate) increases with income, the relative increase in liability across the income distribution of proprietors is by and large preserved under proposed reform. Examining not only proprietor but the overall population in scenario **(1)** absolute EUR losses (bars) in disp. income become bigger with increasing income . However, with exception of the second decile, poorer households are in relative terms (triangles) as affected by the update of cadastral values as richer ones.

Overall redistribution of scenario (1) in % and €



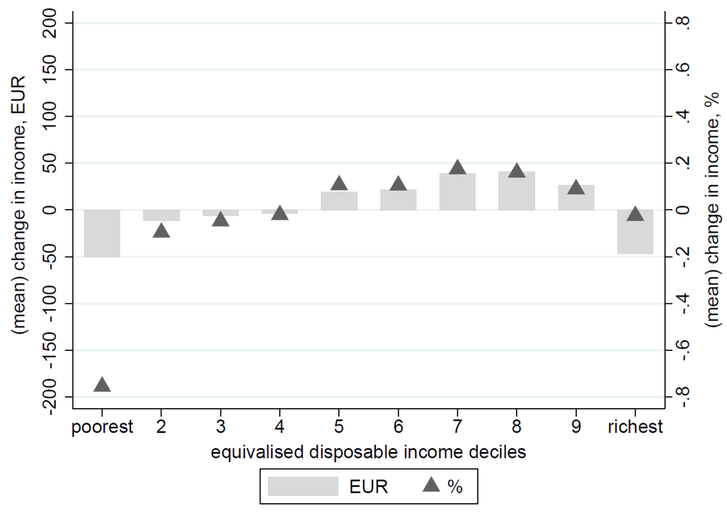
Under revenue-neutrality in scenario **(2)** all household deciles would slightly gain except of the top three ones.

Overall redistribution of scenario (2) in % and €



Revenue neutral scenario **(3)** would have only small effects in terms of redistribution.

Overall redistribution of scenario (3) in % and €



Conclusion

On the macro level we find substantial revenue effects of the proposed reform. Tax collection from property would increase from currently 10,9 bil. € to 18,9 bil. €. This additional tax revenue allows a reduction of the implicit tax rate on labor from 37,2% to 36,5%. Examining the distributional effects of the reform, we find an update of cadastral values without offsetting additional revenue by a rebate in SIC to be virtually neutral in terms of redistribution. Hence, any potential redistribution depends crucially on the design of the revenue-neutral SIC reduction. While a SIC reduction via a lump-sum tax credit (2) corresponds with a slightly higher relief for low income earners, a proportional SIC rebate (3) would barely alter the overall distribution. Changes in income inequality indices (Gini and Atkinson A = 1) are confined to the third decimal place.

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