



House price responses to a national property tax reform[☆]



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ABSTRACT

We show that house prices in general did not respond to a substantial cut in the national property tax in Sweden. The estimates are based on rich register data covering more than 100,000 sales over a time period of two and a half years. Because the Swedish property tax is national and thus unrelated to local public goods, our setting is ideal for causal identification of the property tax on house prices. We observe price increases only in a small segment of the market containing properties with very high tax values. We discuss, but can admittedly not empirically discriminate between, several potential explanations for why we find no evidence of capitalization except for the top segment of the market.

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1. Introduction

Suppose you have decided to buy a house. Two houses appear to be nearly identical but one of them is slightly less expensive to own because the annual property tax burden is €100 lower compared with the other house. How much more would you be willing to pay for the lower taxed house? This question is at the heart of the standard capitalization theory (Oates, 1969; Yinger, 1982) where the price of a house is determined by the total stream of housing services minus the net present value of all costs of owning the house. When the property tax decreases, buyers realize that the cost of living also decreases and they are thus willing to pay a higher price for the house. If the supply of land and housing is fixed, the market price will increase with the full net present value of the tax reduction. Furthermore, if the housing market is efficient and

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individuals use all relevant information, prices will change immediately when information about future tax changes is made public (Palmon and Smith, 1998; Ross and Yinger, 1999).

Most earlier studies on property tax capitalization focus on local property taxes and support the prediction that lower property taxes lead to higher house prices (see e.g. the reviews by Ross and Yinger, 1999; Sirmans et al., 2008; Hilber, 2015). However, recent contributions, using richer data and more credible identification methods add important insights to the literature. Bradley (2015) finds that a temporary tax rebate leads to price increases that are much larger than the net-present-value of the rebate. He interprets this finding as being inconsistent with standard capitalization theory and as evidence of bounded rationality among house buyers. Moreover, Lutz (2015) and Hilber and Vermeulen (2016) find that capitalization degrees vary with the elasticity of the housing supply. The importance of paying attention to the supply side in empirical tests of capitalization theory is extensively discussed in Hilber (2015).

In this paper we empirically analyze how house prices responded to a reform that substantially reduced the Swedish national property tax on owner occupied residential properties (referred to as just houses or properties). The reform is frequently referred to as an “abolition” in Swedish policy discussions due to the extensiveness of the reduction. The reform is remarkable also in the sense that owners of very expensive properties got disproportionately large tax reductions. The tax was reduced in two steps; a preliminary reform including a medium-sized tax cut was introduced immediately after the center-right coalition had won the 2006 parliamentary election. A permanent and final reform including a larger tax cut was implemented on 1 January 2008. Prior to any of the two steps, the yearly tax payment equaled 1 percent of the property value as assessed by the Swedish Tax Agency (hereby referred to as the “tax value”). The final reform package included a decrease of the tax rate from 1 percent to 0.75 percent. But the most sweeping part of the reform was the introduction of a cap on yearly tax payments at SEK 6000 (\$710 or €630).¹ The cap was binding for roughly half of all properties. The capping of property tax payments implies a disproportionately large decrease in the tax liability for properties above the cap.

We utilize this differential treatment in a difference-in-difference (DiD) approach, with uncapped properties in the control group and capped properties in the treatment group. Under the assumption of parallel trends in price developments for houses of different tax values, we estimate the causal effect of the tax cap on house prices. Our data is obtained from the official home ownership register and covers all (roughly 100,000) sales of single-family houses, mediated through a real estate agent connected to Svensk Mäklarstatistik AB (Our translation: Swedish Real Estate Agent Statistics, Inc.) in Sweden during the three years that span the reform period: 2006, 2007 and 2008.

Most of the earlier studies on property tax capitalization analyze local or regional cross-sectional variation in property tax rates. There are two fundamental identification problems with that approach, and these problems have been known and discussed since the seminal paper by Oates (1969). First, a higher tax rate implies higher tax revenues and consequently higher quality of public goods. Higher quality of public goods puts upward pressure on house prices, making it difficult to isolate the effect of the tax separately. Controlling for public goods quality has been the main concern so as to avoid biased estimates, but this task has proven difficult. Second, when local governments set their tax rate, areas with higher house prices, all else equal, are able to set a lower tax rate to collect a given amount of tax revenues. This creates a simultaneity bias between the property tax rate and house prices. A key advantage of our study is that the Swedish property tax rate is set at the national level, without concern for local house prices or quality of local public goods. With our approach, we avoid the two identification problems explained above. Using variation stemming from a national reform has an additional advantage, namely that we can track the effects of all reform events, including policy announcements.²

In this context it is important to note that responses to local and national property tax changes need not be identical. When a local property tax is raised in one jurisdiction, it is in principle possible for a buyer to buy an identical property in another jurisdiction with a lower tax burden. This decreases demand in the jurisdiction where the property tax was raised and increases demand in the other jurisdiction, with corresponding price adjustments. When a national property tax is changed, all identical properties are affected by the tax change. With a kinked national property tax schedule, as in the post-reform regime in Sweden, demand for properties with high tax values increases relative to demand for properties with tax values below the kink. However, since two properties with different tax values are arguably not identical, and hence not perfect substitutes, it is possible that the housing demand elasticity with respect to national property tax is lower than for a local property tax. If housing supply is perfectly inelastic, the demand elasticity does not affect capitalization degrees, but with elastic supply the capitalization degree might well be lower for a national property tax than for a local property tax. It should also be noted that while most of the earlier literature has used cross-sectional variation in property taxes and house prices, and hence implicitly compared long-run equilibrium outcomes, our reform evaluation approach makes it possible to study dynamic adjustment to changes in the taxes. Our study contributes to the previous literature estimating capitalization of property taxes in that we make use of a national reform and a large nation wide register based data set to identify price responses.

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