Comments on County Property Tax Capitalization in U.S. Cities by Kyle A. Kopplin

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This paper collects an impressive national sample of property tax data to estimate property tax capitalization.

Its main contribution, in my view, is to pose an entirely new question about property tax capitalization, namely, whether the degree of capitalization (i.e., the impact of a given property tax rate on house values) is larger when the tax rate was recently increased instead of being in place for a long time.

Consider two counties with the same property tax rate, say 1.5 percent. The question is whether the degree of property tax capitalization is higher in County A, which just raised its rate from 1 percent to 1.5 percent, than it is in County B, which has had a 1.5 percent rate for a long time.

This question is a useful contribution to the literature, particularly because it has the potential to shed light on the causes of variance in the property tax capitalization rate.

My interest in property tax capitalization is fueled in part by the fact that the basic specification is known, and many issues can be studied using variations of this specification.

Professor Kopplin appears to share this view. He not only builds on a well-known specification, but he also has an appendix discussing specification issues.

The standard starting point, which is equation (1) in the paper, is:

$$V = \frac{\hat{P}H}{r + \delta\tau}$$

In this equation, τ is the effective property tax rate, δ is the degree of property tax capitalization, H is housing services, P^ is the before-tax price of housing services, and r is the discount rate.

By taking logs and using the approximation that (log{1+a} ≈ a) leads to

$$\ln\{V\} = \ln\{\hat{P}\} + \ln\{H\} + \ln\{r\} + \left(\frac{\delta}{r}\right)\tau$$

This is the foundation of equation (2) in the paper (although it is not explicitly derived).

Data limitations prevent the precise estimation of this equation because the effective tax rate for an individual house is not observed. Instead, the paper uses the average statutory tax rate in a county.

Bias may arise from the lack of controls for the assessment/sales ratio.

The main innovation is to add recent tax changes. Let D indicate the existence of a change in the average statutory rate in a county from the previous year to the current year. With this addition, the model becomes

$$\ln\{V\} = \ln\{\hat{P}\} + \ln\{H\} + \ln\{r\} + \left(\frac{\delta}{r}\right)\tau + \beta D$$

Now β is the coefficient of interest.

> β indicates whether a tax change has an impact on house values even after controlling for the overall tax rate.

Equations for positive and negative tax changes are estimated separately.

This approach encounters two main problems:

First, all taxing units in the county are assumed to experience identical tax-rate changes.

> However, a change in the average rate might reflect a change in only one jurisdiction in a county. In this case all jurisdictions are assumed to experience a change even though it happened in only one place. Moreover, offsetting tax-rate changes could lead to no overall change, even though change occurred in at least two jurisdictions.

Second, the paper provides no mechanism for a tax change (holding the rate constant) to affect capitalization.

> After all, capitalization reflects the housing bids of *buyers*, many if not most of whom did not live in the local jurisdiction the previous year. As a result, they may only observe the current rate—not the change in the rate from the previous year. How does a change in the tax rate affect their housing bids? The paper does not say.

The final step in the paper's framework is designed to adjust for the fact that D is an indicator variable, not a rate change. A 0.01 change in the tax rate is treated the same as a 0.001 change. This adjustment consists of adding a variable, T, designed to "capture the capture the intensity of the statutory property tax rate change."

Ignoring fixed effects and subscripts, the final model is:

$$\ln\{V\} = \ln\{\hat{P}\} + \ln\{H\} + \ln\{r\} + \left(\frac{\delta}{r}\right)\tau + \beta_1(D \times T) + \beta_2 D + \beta_3 T$$

The T variable is implemented as the within-county t-score of rate changes over time. The idea, I guess, is that the impact of a given rate change in a county depends on whether large rate changes are common there.

I may be missing something, but I do not find this approach to be convincing. A more straightforward approach would be to use the actual change in the average statuary rate instead of D.

Professor Kopplin also develops a quantile analysis of the model.

In principle, a quantile analysis of a tax-change model is certainly reasonable.

Moreover, the methods employed in this paper also seem reasonable to me.

However, I find it impossible to evaluate this quantile analysis given my concerns about the basic model.

To conclude, here are a few suggested revisions for this paper:

1. The most important revision would be to develop a mechanism for the impact of tax changes on property tax capitalization.

   Perhaps the tax rate is more salient, even to homebuyers, in years after a tax change, holding constant the overall tax rate. Perhaps real estate brokers provide buyers with information on tax rates in several recent years, thereby highlighting tax changes for buyers. In any case, a mechanism needs to be identified for the main hypothesis in this paper to be compelling.

2. Stop calling the tax variable a statutory tax rate.

   It is not the statutory rate in any jurisdiction. It is an average. Be clear that you are looking at the impact of a tax change in a county on all the jurisdictions in a county, regardless of whether or not they have a tax change themselves.

3. Try some alternatives to the current D and *T* variables.

   Try a model with *D* defined as the actual change in the average statutory tax rate—not as an indicator variable.

   Try a model without T.

4. See if you can obtain data for effective tax rates by jurisdiction and then do your model with effective tax rates on a much smaller sample.

   See for example: http://www.ongov.net/rpts/countyTownTaxRates.html

Overall, this paper raises an interesting new question concerning property tax capitalization, namely, whether recent tax changes affect the degree of capitalization, holding the rate constant.

The paper encounters some speed bumps due to incomplete data and conceptual complexity, but it is worth pursuing.

After all, straightforward specifications with conceptual twists are what make property tax capitalization such a fun—and important—topic.