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The millage rate offset and property tax revenue stability



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ABSTRACT

One of the alleged virtues of the property tax is that it produces stable revenues regardless of price movements in real estate markets. One explanation for this is that local governments adjust their millage rates to offset changes in their property tax base. Little evidence, however, exists on the strength of this millage rate offset mechanism. We hypothesize that the importance of this mechanism will vary among local governments depending upon the monopoly power that they possess. The results provide strong support for our hypothesis.

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1. Introduction

One of the alleged virtues of the property tax is that it produces relatively stable revenues regardless of movements in real estate markets (Alm, 2013). In a recent special issue of this journal titled "The Effect of the Housing Crisis on State and Local Governments" this stability was documented, as three different papers found that the housing market crash has had little impact on property tax revenues (Alm et al., 2011; Doerner and Ihlanfeldt, 2011; Lutz et al., 2011). In these papers and others that preceded them (e.g., Lutz, 2008), a key factor allegedly accounting for revenue stability is a change in the property tax rate in the opposite direction of the change in the property tax base. This mechanism is sometimes referred to as the "millage rate offset," although this makes it sound more like an engineering than an economics concept.² Because these studies provide little, if any, evidence that millage rate changes do, in fact, account for revenue stability, they bring to the forefront the long-standing issue of how local governments set their property tax rates.

There are widely differing views on how property tax rates are set by local governments. One view, the residual view, maintains the rate is set

to balance the budget once the tax base is known, other revenues are projected, and the level of expenditures is chosen.³ In other words, the tax rate is mechanically determined and is not a choice variable. An implication of this view is that the elasticity of the tax rate with respect to the tax base is equal to one; i.e., as the tax base falls (rises) the tax rate rises (falls) so as to maintain property tax revenues. An alternative view, the strategic view, maintains that the tax rate is chosen with an eye toward maintaining and attracting mobile capital.⁴ Under this view, each local government faces an investment demand curve, where the tax price of investment is the tax rate. An implication of this view is that the elasticity of the tax rate with respect to the tax base is, a priori, unknown and will likely vary across local governments depending upon the elasticity of their investment demand curve. For example, in response to a loss in tax base, a government with little monopoly power may decide to let its tax revenues decline instead of raising its tax rate and risk losing business investment.

There is little conclusive evidence on which of the above two views is more correct. We can think of three approaches that might yield an answer. First, because state statutes tend to provide detailed instructions on how the budgetary process must be conducted at the local

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¹ These papers were all presented May, 2010, at the Urban Institute's conference "What the Housing Crisis Means for State and Local Governments."

² An anonymous referee was the first to make this point.

³ Ross and Yan (2013) trace the "residual view" back to Netzer (1964) and provide this quote from him: "... the nominal rate of the tax is essentially a residual, derived by determining the level of expenditures, subtracting state and other non-property tax revenues from budget outlays, and comparing the remainder with assessed values ... [A]ssessed values are no more 'actual' or determinants of property tax yield than are a number of other factors."

⁴ Brueckner (2003) reviews theory and evidence related to the property tax rate as a strategic tool that local governments use in competing against one another for mobile capital.

level; a reading of these statutes might shed some light on how tax rates are determined. Second, a survey of local officials could be conducted on how rates are set within their jurisdiction. Finally, because the two views have clear testable implications regarding the magnitude of the elasticity of the tax rate with respect to the tax base, this parameter could be estimated given the appropriate data.

In sampling the statutes of various states we discovered that it is not uncommon to find prima facie support for the residual view. For example, Illinois statutes (50 ILCS 330/3 Ch.85, par.803) state that the budget must be adopted before the tax rate. However, the statutes of other states, like Florida, specify that the tax rate be adopted first (s. 200.065, F.S.). This suggests that whether the residual or strategic view of the tax rate is correct varies across states. This diversity receives emphasis in Huddleston's (2005) guide to the budgetary process:

The property tax is often considered to be a "residual tax," that is, property tax collections are determined by the amount of revenue needed to balance the local budget after all other revenues have been taken into account. While this notion of the property tax is generally true, it is also commonly true that total property tax collections or the property tax rate are determined first, and then local spending is adjusted as needed to produce a balanced budget (page 29).

While we did not survey local officials regarding their budgetary process, we did consult with both academics and practitioners knowledgeable about local government budgeting. They emphasized that a distinction must be drawn between procedures and processes. While a state statute might require either the tax rate or budget be adopted first, this is a procedural requirement that may have little bearing on the actual determination of budgets and rates. There was also an unwillingness to accept the residual view, principally because the tax rate has political repercussions. As Huddleston concludes,

Which ever approach to property taxes is taken, it is universally true that the annual bane of many elected local officials is announcement of the property tax rate for the upcoming year. Property tax rates matter, both to elected officials and taxpayers and voters! (Page 29.)⁵

While the residual view can be criticized for its naivety concerning political economy, this does not mean that the strategic view by default is correct. If anything, it suggests a third view of rate determination, where the rate is set with an eye toward avoiding voter wrath and keeping incumbents in office. Nevertheless, the political criticism of the residual view dispels the notion that the tax rate is the outcome of an arithmetic calculation in favor of it being a choice variable, which may be affected by both political and capital flight concerns.

In this paper we take the third approach toward resolving the issue of whether the residual view or the strategic view of the property tax rate is more correct. Using unique panel databases for cities and counties in Florida covering the years 1995 to 2011, we estimate elasticities of the millage rate and expenditures with respect to the property tax base. We seek to answer the following questions: What is the elasticity of the millage rate with respect to the property tax base? Is this elasticity the same for upward and downward movements in the property tax base? Does the elasticity vary among different types of governments with varying amounts of monopoly power? Is there a correspondence between the millage rate and expenditure elasticities with respect to the property tax base? Answering these questions is timely in light of the fact that since the housing market crashed and the Great Recession hit (circa 2007); many local governments have experienced unprecedented declines in their property tax base.

In the next section Section (2) we review the literature. Section 3 provides background information on taxing and budgeting at the local

level in Florida. In Section 4 we develop the hypotheses. The data and estimating equations are described in Sections 5 and 6, respectively. Descriptive statistics are presented in Section 7. The results from estimating the millage rate and expenditure models are presented in Sections 8 and 9. Additional results for principal cities appear in Section 10. Conclusions are stated in Section 11.

2. Literature review

The relevant literature consists of three types of studies. First, there are tax competition studies that view the tax rate as a strategic policy tool in the competition among local governments for mobile capital. Second, there are studies that have tested the residual view of the property tax rate. Third, there are studies that have estimated the elasticity of the millage rate with respect to the property tax base.

The tax competition literature is reviewed by Brueckner (2003). He first reviews the theory of tax competition by developing his own jurisdictional objective function. Maximization requires that the jurisdiction take into account the flight of capital caused by an increase in its tax rate, which moderates the incentive to raise the rate. He then reviews eight studies, all of which provide at least some support for the prediction that tax rates are set with an eye toward possible capital flight.⁶

Studies that empirically test the residual view of the property tax rate are reviewed by Ross and Yan (2013). After reviewing a half dozen or so studies, they conclude that the literature is mixed on whether the tax rate is a residual in the budgeting of local governments. They maintain that the results of all previous studies suffer from omitted variable bias. The omitted variable is housing wealth, which is correlated with the tax base, because a substantial portion of the properties that make up the base are owner-occupied residential units. As the base expands, the residual tax rate change will be biased if greater housing wealth increases the demand for public services, causing a rise in the tax rate.

To overcome this bias, they use annual data on Indiana counties from 2000 to 2008 to regress the change in the tax levy (not the tax rate) on the tax base, controlling for changes in housing values. The latter variable is included to capture the wealth effect, but it is crudely measured as the change in the mean selling price computed from a 3 to 4% sample of homes that sold in each year. In addition to their criticism of prior studies for omitting housing wealth, the authors maintain that these studies ignore the endogeneity of the property tax base: "It is also conceivable in some instances that property assessments are conducted in some endogenous manner, particularly if there is no cyclical basis for reappraisals" (p. 13). Because the state puts each county on a fixed reassessment schedule that varies across counties in 1984, the statemandated reassessments are taken as exogenous to the levy and included in their model.

The results show a statistically significant wealth effect, but it is described as "a qualitatively small effect" (p. 22). The effect of the tax base on the levy is statistically significant but small in magnitude. The authors conclude, "At best, it seems there is some amount of fiscal illusion from assessed value growth that is statistically significant, but it is substantively small and thus generally consistent with the revenue neutral adjustments in the property tax rate predicted by the residual view" (p. 24). A limitation of Ross and Yan is that they only investigated

⁵ Mikesell (2011, p. 494) also holds this view: "A government may, of course, see the computed rate, worry about the consequences, and revise the amount of levy it chooses to raise."

 $^{^6}$ In line with this evidence is other evidence showing that business investment is highly responsive to tax differentials across jurisdictions, especially those located within the same metropolitan area. Bartik (1991) concludes from his review of the literature that the elasticity of business investment with respect to the property tax rate lies between -0.10 and -0.60 inter-regionally and -1.0 and -3.0 intra-regionally.

⁷ In Florida there is no reason to suspect that property assessments are "conducted in some endogenous manner." The state mandates that property values be updated every year on January 1, each county uses a Computer Assisted Mass Appraisal vendor to obtain these values, and the Florida Department of Revenue uses various checks to make sure that assessments are in line with market values.

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