Property Tax Lids and the Effect on Kansas

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Abstract

Cross sectional time series data in a partial adjustment model examine local
government behavior under an aggregate property tax levy limit and under Truth in
Taxation in Kansas. Results indicate that the aggregate levy limit would have continued
to restrict property tax revenue and spending had it not been replaced.

Introduction

This paper examines the state-level tax limitations placed on property tax revenue
in Kansas. Over the past 35 years, the Kansas legislature has had some form property tax
limitation in place. From 1989, the Kansas property tax limitation tied the amount of
property tax revenue that could be generated to the 1989 assessed property value and
value of new improvements to property. This control essentially limited the revenue
collected to the same amount as the base year. However, local officials complained that
this did not allow enough financial flexibility to meet the needs that occur at the county
level. In 1999, Truth in Taxation replaced the aggregate tax levy limit. Truth in Taxation
allowed local officials to increase the levy by any amount they deemed necessary, but
officials first had to publicly announce their intentions through a resolution or an
ordinance. This stipulation was supposed to act as a control mechanism for local
government, in that it would allow taxpayers a chance to express their opposition.

The objective of this study is to examine patterns of county government public
finances under the alternative “hard” tax lid, wherein a specific formula dictated the
amounts of property tax that could be raised, versus the “soft” tax lid that provided local
officials with greater discretion regarding raising tax revenues. A unique aspect of this
research was the use of a tax levy factor to represent cumulative effects of the aggregate
levy limit. The factor indexed property tax revenue generation to 1989, the first year
under the law. County officials used this factor during the earlier law to calculate the
allowable growth of county government property tax revenue. This study projects this factor through 2004 to estimate tax lid effects had the law remained in place and then compares these estimates to actual revenues and effects under the Truth in Taxation law.

**Literature Review**

During World War II, state and local taxes generally held constant or decreased. After the war ended, many local governments expanded programs, which required more tax money. While local governments increased property tax rates to provide for expanded government programs, they also benefited from increased revenue due to increasing property values. During this time, increasing numbers of citizens started to feel over-taxed. Newspapers began to carry stories about the topic, including stories of some homeowners forced to sell their homes because of the tax burden (Fisher).

By the 1970s, property tax protests were sweeping the country, personified for many by California’s 1978 Proposition 13. Local government tax limitation measures began as early as the 1800s, but most were implemented in the early 1970s. Nearly all local governments, and more than half of the states in the United States, were constrained in their budgeting by a statutory or constitutional limit on taxes, spending, or both. The statutory or constitutional limits came in several different forms. The limits at the local level were directed at tax rates, tax revenue, amount of expenditures, or the growth rate of revenue or expenditures.

As of 1992, 27 states had some sort of state government tax or expenditure limit. Seventeen states restricted the annual growth in own-source revenue or expenditures to the percentage growth rate of state personal income (Fisher). Six states restricted the annual growth in own-source revenue or expenditure to a fixed percentage limit. Four
states restricted the annual growth in own-source revenue or expenditure to the percentage growth in population and the general price level. The limitations of the 27 states were either instigated by taxpayers using the initiative and referendum process or, in most cases, proposed by the state’s legislature. In the end, approximately half of the limitations were passed by a public vote and the other half passed by vote of the legislature (Fisher).

Early studies of state level tax limitation policies had a limited number of years under a tax limitation to analyze. Often the early research produced results that showed tax limitations had very little or no effect on the growth of taxes or government spending. As of 2004, 43 states had passed some form of tax and expenditure limit either at the state or local level (Glickman and Painter). Now that more time has passed, studies using fifteen to twenty years of data in which a tax limitation was in effect indicate that taxation limits have different effects on such things as growth of taxes and government spending.

Local government tax expenditure limitations come in many different forms: overall property tax rates, specific property tax rates, property tax levies, general revenue or expenditure increases, assessment increases, and full disclosure. Previous studies have not established the effectiveness of tax limitations (Skidmore). Table 1 lists selected studies by type of limitation and by the target of the limitation, while Table 2 shows selected studies, the estimation technique and the types of variables used in each study.

Tax and expenditures limitations affect nearly all United States voters and policy makers at either the state or local level or both. Government revenue and expenditures may have been affected by the tax and expenditure limitations that were put in place. By
knowing the effects, voters and policymakers can be informed and determine whether the policy achieved the desired outcome.

**Conceptual Model**

This research focuses on two types of limitations. First, the 1989 Kansas property tax levy limitation, which limited the annual growth of revenues, in effect until 1998. Secondly, Truth in Taxation, which took effect in Kansas in 1999. This research compares the two types of limitations to determine how each affected county government revenues and expenditures during the period 1989 to 2004.

It was hypothesized that as time passed under the levy limit, real property tax revenue per capita, real discretionary own-source revenue per capita, and real discretionary own-source expenditure per capita would have decreased. In addition, as time passed, real assessed property value per capita would increase because aggressively reassessing real property might give local officials a way to minimize the effects of the aggregate tax levy limitation by pushing up valuations with a fixed mill rate.

**Data**

Four dependent variables were chosen to observe the different ways the two limitation laws may have restricted the local governments in Kansas: real property tax revenue per capita, real tangible assessed valuation, real discretionary own-source expenditure per capita, and real discretionary own-source revenue per capita. Real discretionary own-source expenditure per capita refers to the expenditures that are within local discretionary control and not dictated by state law or formula; such expenditures might decrease under tax restrictions. Finally, changes in real discretionary own-source revenue per capita, the revenues subject to local discretionary control, may indicate

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1 Brown also used different dependent variables with the same independent variables.
whether tax limitations are offset by greater use of alternative revenue sources not restricted by the tax limitation, such as sales taxes.

The effects of the alternative tax limitation restrictions are observed in the actual and projected trends of the dependent variables for the full term of the study (1991-2004). The dependent variables are conceived as a function of county characteristics reflected by the performance of the economy, demographic attributes, county structure, time effects, and aggregate levy limit. Data for dependent variables come from the Kansas Fiscal Database, while explanatory data come from Woods and Poole, Inc. Rural-urban continuum codes come from the USDA Economic Research Service. Table 3 lists the specific explanatory variables by category. The aggregate levy limit reflects the amount that each individual county could levy annually in accordance with the tax law. A two-year lagged dependent variable was chosen to control for autocorrelation. Finally, a year trend variable was constructed to measure the effects across time. As in previous studies, the trend implemented was linear; however, unlike previous studies, the actual number of the year was used rather than a counter (1, 2, 3, 4, etc.).

The Aggregate Levy Limit

Each year, county governments calculated a tax levy factor each year to determine the amount that the property tax levy could increase under the tax lid (equation 1). The factor plus one was multiplied by the 1989 real base year tax levy in 2000 dollars to determine the new tax levy for the next year. The factor was the most that a county could raise their property tax levy above the base year, according to the aggregate levy limitation.
\[ F = \left[ NI + (PP_B - PP_A) \right] / AV_A \]

Where
- \( F \) = tax levy factor for a Kansas county
- \( NI \) = new improvements to property for a Kansas county
- \( PP_B \) = value of personal property in current year for a Kansas county
- \( PP_A \) = value of personal property in 1989 base year for a Kansas county
- \( AV_A \) = assessed value of personal property in 1989 base year for a Kansas county

**Empirical Model**

This research used an out of sample partial adjusted model with ordinary least squares to estimate each of the four dependent variables in two separate regressions (equation 2). The first regression period was from 1991 to 1998 to explain the effects of an aggregate levy limit, and the second period from 1999 to 2004 explained the truth in taxation effects.

\[ y_i = \beta_0 + \beta_1 X_i + u_i \]

where
- \( y_i \) = described level of
- \( \beta_0 \) = intercept
- \( \beta_1 \) = short-run multiplier of \( x_i \)
- \( u_i \) = was the error term

Whereas studies such as Skidmore and Blankenau used fixed or random effects models, Greene states that a random effects model would fit if only a sample of the population was used in the analysis. This study included 97 of Kansas’ 105 counties – the exclusions either because of missing data or consolidated county-city government structure. The advantage of having an out of sample partial adjusted model was that the parameters were intrinsically linear and the disturbance was non-autocorrelated. In addition, the out of sample part of the model created the opportunity to
determine what the patterns of property tax revenue, own source expenditure, own source revenue, and the assessed value of property would have been if either tax limitation policy had been in effect for the full study.

\[ y_i = \alpha + \beta x_i + \lambda y_{i-1} + \epsilon_i \]  

where

- \( y_i \) described level of
- \( \alpha \) intercept
- \( \beta \) short-run multiplier of \( x_i \)
- \( \lambda \) short-run multiplier of \( w_i \)
- \( \lambda \) parameter estimate of the lagged dependent variable (\( y_{i-1} \))
- \( \epsilon_i \) was the error term

In this study, the out of sample part of the model (equation 3) was carried out by multiplying the mean values of the first period, 1991 to 1998, times the second period, 1999 to 2004, coefficients to determine what the pattern of revenue, expenditure, and assessed value would have been if the Truth in Taxation limitation had been in effect from 1989-1999 (backcasting). The reverse was done by multiplying the mean values of the second period by the coefficients from the first period to determine what the pattern of revenue, expenditure, and assessed value would have been if the aggregate levy limitation not been repealed. The predicted values were estimated using equation 4.

\[ P = M * \beta \]

Where

- \( P \) out of sample prediction
- \( M \) mean values
- \( \beta \) coefficients
Results and Conclusions

Results of the partial adjustment regressions can be seen in Figures 1-4. Coefficients and t-statistics are available from the authors upon request. Figure 1 compares the predicted values of property tax revenues if the aggregate tax limit had continued beyond 1998 to the actual property tax revenues generated under Truth in Taxation. The figure shows that property tax revenues would have been lower under the aggregate levy limit. It seems that the aggregate tax limit did have some restrictive effect on property tax revenues. Figure 2 compares predicted and actual own-source discretionary revenues during the study period. Predicted values under the levy limit also forecast at below the actual revenues taken during Truth in Taxation. Figure 3 indicates that own-source expenditures also would have declined had the aggregate levy limit continued. Finally, Figure 4 shows the effects of each property tax regime on real tangible assessed valuation. Real tangible assessed valuation trended downward through 1998, indicating that county officials did not use assessed valuation as a means to circumvent the limitations on property tax rates.

It appears that the property tax levy limit in Kansas did have some effect on revenue generation and expenditures. Once the levy limit was replaced, local officials did have more flexibility regarding revenue generation and used that flexibility.

Future Research

This research provides a foundation upon which future research can build. It would be advantageous in future efforts to try to account for some of the external influences specified above. That is, include variables that capture the effects of changes in demand transfers, the recessionary period in 2001, and several more years’ data. In
addition, it would be informative to apply the model to other states with similar local
government levy limitation policies to compare patterns of local government finances.
Comparing such results would provide additional information about the effectiveness of
local government tax and expenditure limitation initiatives. Of particular interest might
be the use of an out of sample partial adjustment model in a state before and after a
limitation was enacted to identify the differences in the patterns of local government
revenues and expenditures.

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Table 3. Explanatory Variables

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<td>unemployment rate</td>
<td>proportion of population age 0-17</td>
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<td>real total retail sales per capita</td>
<td>proportion of population age 65+</td>
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<td>real total personal income per capita</td>
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<td>real manufacturing earnings per capita</td>
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<tr>
<td>real service earnings per capita</td>
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County Structure

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<td>farm employment as a share of total employment</td>
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<tr>
<td>manufacturing employment as a share of total employment</td>
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<td>services employment as a share of total employment</td>
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Figure 1. Property Tax Revenue Under Different Kansas Tax Policies from 1991-2003

Figure 2. Own-Source Discretionary Revenue Under Different Kansas Tax Policies From 1991-2003
Figure 3. Own-Source Discretionary Expenditure Under Different Kansas Tax Policies From 1991-2003

Figure 4. Real Tangible Assessed Value Under Different Kansas Tax Policies From 1991-2003