WICHITA STATE UNIVERSITY HUGO WALL SCHOOL OF PUBLIC AFFAIRS
Policy Brief
Spring 2016

WICHITA STATE UNIVERSITY
HUGO WALL SCHOOL OF PUBLIC AFFAIRS
Kansas Public Finance Center

THE KANSAS MUNICIPAL TAX LID: INITIAL ESTIMATES OF IMPACTS

by Kenneth A. Kriz, PhD, Regents Distinguished Professor of Public Finance
Kansas Public Finance Center *at*
Wichita State University Hugo Wall School of Public Affairs

Background

In the waning days of the 2015 "veto session" the Kansas Legislature passed House Substitute for Senate Bill 270, which among many other provisions imposed a restriction on the amount that municipal property tax levies could rise. The so-called "property tax lid" would require Kansas municipalities to obtain a majority vote of residents in order to pass property tax levies that increase more than the rate of inflation in the previous year, adjusted for certain exempt categories of expenditure. The bill was passed without a hearing and with very little debate. Almost immediately, the tax lid faced opposition from municipal governments and community advocates. Despite this, Governor Brownback signed the bill into law on June 16, 2015 (the effective date of the restrictions was clarified in House Bill 2142, which was signed into law on June 30).

In their criticism of the bill, municipal government officials and advocacy groups pointed to the potential negative effects of such a limitation. They suggested that municipal governments would be hamstrung by the limitation, unable to capture the value created by increased public service provision. They also questioned the need for such a limitation, noting that average statewide property tax rates had not increased much from 2010-2014. Proponents of the limitation noted that although property tax rates had not increased, levies had been increasing. They further questioned the accountability of local government officials in deciding budget levels. Finally, they pointed out that the exemptions offered in the law did allow for governments to make important investments in infrastructure (especially road construction), sheltered the municipalities from increases required by federal and state mandates, and allowed municipalities to capture the value deriving from new construction or annexation.[1]

In this issue brief we consider the initial impacts of the tax lid legislation. We develop a financial simulation model of the effects and analyze its results. We find that in its current form, the likelihood of a jurisdiction hitting the tax lid is small, but is strongly influenced by the level of exempt revenues. We conclude by discussing the implications of some of the exemption categories.

[1] Kansas Statutes Annotated 2015 (Supp.) 79-2925b.

Modeling the Effects of the Tax Lid

In order to estimate how much the bill might impact municipal governments, we develop a financial model of the limits and analyze it. We then calibrate the model using data from a local government to generate further insights.

As codified in statute, the property tax limit for one year into the future, $Limit_{t+1}$, can be expressed as a function of the current property tax levy, $Levy_t$ (where the subscript t indicates that the levy is for the current year), the consumer price index for all urban consumers in the most recent year, CPI_{t-1}, and the classes of revenues exempted from the levy limit, $Exempt_{t+1}$:

$$Limit_{t+1} = Levy_t(1 + CPI_{t-1}) + Exempt_{t+1} \quad (1)$$

The actual property tax levy at time t+1 will be a product of the assessed value of property in the jurisdiction (AV_{t+1}) times the property tax (mill) rate (m_{t+1}):

$$Levy_{t+1} = AV_{t+1}m_{t+1} \quad (2)$$

If one expresses the assessed value in the future as a function of the current assessed value and a growth rate between time t and t+1 (AVGRt,t+1), we can rewrite (2) as:

$$Levy_{t+1} = AV_t\big(1 + AVGR_{t,t+1}\big)m_{t+1} \quad (3)$$

We then develop a slack variable as the difference between the limit in the next period and the actual tax levy. Substituting from equations (1) and (3) we obtain:

$$Slack_{t+1} = Limit_{t+1} - Levy_{t+1} = \\ [Levy_t(1 + CPI_{t-1}) + Exempt_{t+1}] - \big[AV_t\big(1 + AVGR_{t,t+1}\big)m_{t+1}\big] \quad (4)$$

Taking comparative statics, we can ascertain the major factors determining the amount of slack (and therefore the likelihood of "hitting" the tax limit). We start by noting that the current levy and assessed value along with the future tax rate are scale variables and so are not direct factors in determining the relative slack in the property tax levy. Inflation and the level of exempt revenues have a direct relationship with slack. They increase the limit and thus make it less likely that municipalities will hit the tax lid. On the other hand, the growth rate of the assessed value (to the extent that it is not caused by exempt factors) reduces slack and makes it more likely that a required vote will be necessary.

Beyond comparative statics, we can calibrate the model in order to assess the magnitude of the potential effects. To do this, we obtained property tax data including data on assessed valuation and also financial data from a sample of local municipalities for fiscal years 2009 to 2016. Using this we developed a financial simulation model of equation (4). The important variables in the model were inflation using the CPI-U measure, exempt revenues (calculated as a percent of the property tax levy), and the growth rate of assessed value.

We calculated the mean and standard deviation for the AV Growth and Exempt Percentage variables from the data provided by the municipality. We also calculated the mean and standard deviation of the CPI-U measure using data from the Bureau of Labor Statistics. Finally, we computed the serial correlation (correlation over time) in the various measures so we could capture any cyclical behavior of the variables. Then we used those calculations to calibrate the model set forth in Equation (4). Specifically, we used the following distributions and assumptions in our model:

Table 1. **Assumptions Used in the Model**

Assumption	Distribution	Mean	Standard Deviation	Serial Correlation
CPI-U	Normal	1.91%	1.35%	-0.4242
AV Growth	Normal	2.14%	2.44%	0.7885
Exempt Percentage	Normal	27.63%	4.94%	0.5030

We then ran the model over 5,000 iterations using a technique called Monte Carlo simulation. In this method, random draws are taken from the distribution of values indicated in Table 1 and then entered into the model. The outcome variable (Slack) is then calculated and stored. This process is repeated 5,000 times and a distribution of outcomes is generated. We can look at the simulated outcomes to analyze how much risk is present in terms of the predicted slack in the jurisdiction for various years in the forecast.

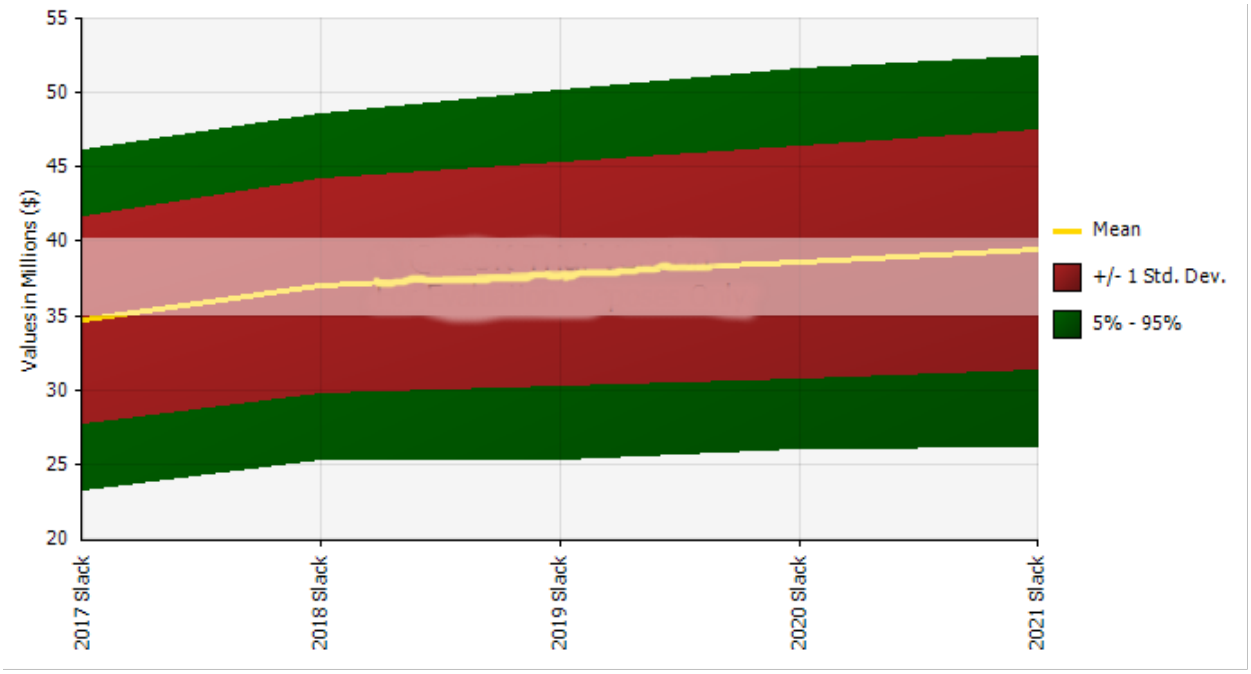
An example of the output is shown in Table 2. These results are for the estimates of the slack for the average municipality in 2017. The results indicate that it is highly unlikely that these jurisdictions will hit the tax lid. The 90 percent confidence interval (the difference between the 5th percentile value and 95th percentile value) shows the range of outcomes in which we can be 90 percent confident the actual outcome will be realized. The low end of this interval for the average municipality in this sample is $23.2 million (which is approximately 26 percent of the tax levy), indicating that it will most likely have plenty of slack under the lid in 2017.

Table 2. **Results for 2017 Slack, 5000 Iterations**

Statistic	Value
Mean	34,707,808.92
Median	34,651,275.81
Standard Deviation	6,953,715.18
5th Percentile	23,230,979.08
95th Percentile	46,181,882.46
Minimum	9,991,104.80
Maximum	59,371,721.54

We can gather the results for each of the years modeled and display them as a graph (Figure 1). From the graph we can see that it becomes increasing unlikely that the average municipality in this sample will be forced to hold an election to approve the property tax levy.

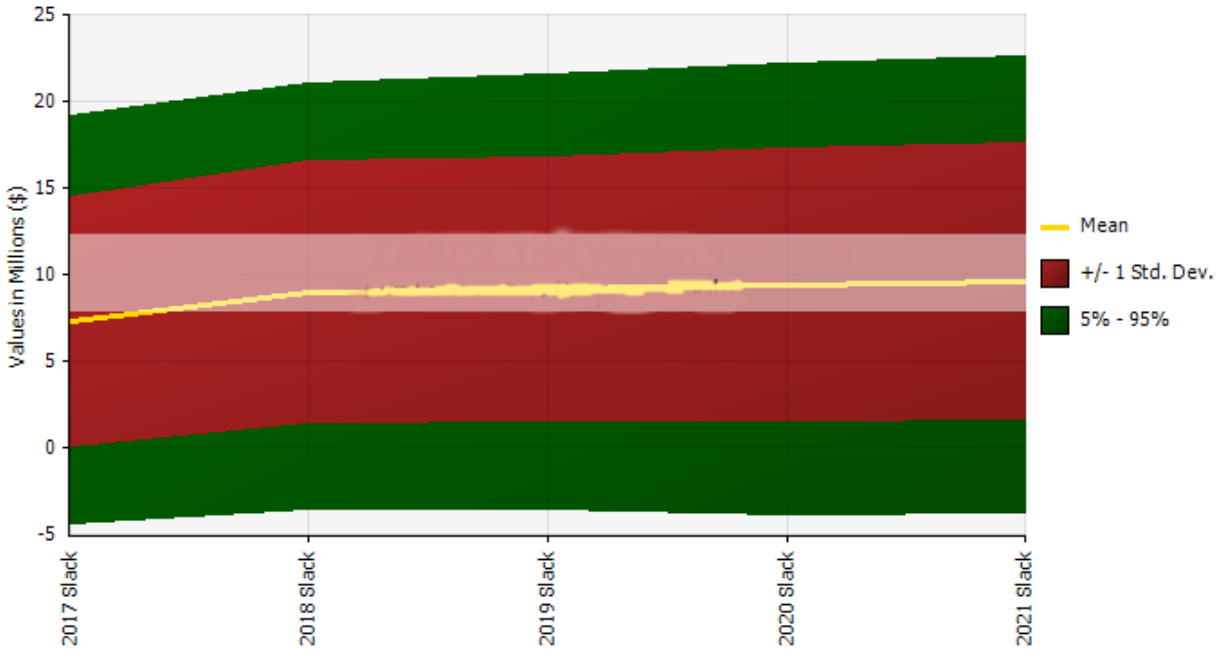
Figure 1. **Results from Financial Simulation Model, Slack in 2017-2021. 5000 Iterations**



The reason for the minimal impact on these jurisdictions appears to be driven by their relatively high level of exempt revenues.[2] Over one-quarter of the average municipality's revenues would be exempt from the provisions of the tax lid. In order to test the relative impact of the exemptions, we estimated the simulation model with a much lower mean percentage of exemptions (6.9% of revenues, or one-fourth of the original assumption). The results of this analysis are shown in Figure 2. With the lower level of exemptions, there is a non-trivial probability of hitting the tax lid in the early years. We estimate a 15.5 percent chance that the municipality with the lower level of exemptions would hit the lid in 2017. This probability falls to around 11.5 percent for the years 2018-2021. So while the probability is still somewhat low, it is much higher as exempt revenues account for a smaller portion of total property taxes.

[2] This was confirmed by an analysis of the correlation between the results of the simulation and the assumptions used in creating it.

Figure 2. **Results from Financial Simulation Model with Lower Exemptions, Slack in 2017-2021. 5000 Iterations**



Discussion of Results

The results of the simulation model reinforce the comparative statics discussion. There are large incentives created in the tax lid law to create growth in revenues from exempt categories. Examining some of the exempt categories gives us a sense of what the likely outcomes might be from the policy. First, we would expect to see growth achieved more through activities like consolidation and annexation, as that growth is exempt from the tax lid. Second, we expect to see greater spending on infrastructure, especially debt financed spending and spending specifically for roads as those are clearly exempted. Third, we expect to see greater overall reliance on debt-funded spending as debt service payments are exempted. Fourth, we would expect to see municipalities find ways to finance expenditures using special assessments.

The implications of these incentives are a mixed bag. While encouraging and protecting infrastructure spending is most likely a positive for municipalities, the incentives vary depending on the type of infrastructure. Increased road construction costs are most definitely exempted, as are infrastructure costs that definitely benefit organizations that are exempt from property taxation (such as churches and other nonprofits). Costs of new infrastructure appear to be exempt, but the cost of restoring or rehabilitating infrastructure that does not definitely benefit exempt organizations is not exempt. So there may be incentives created for municipalities to let infrastructure deteriorate to the point of needing replacement, unless that infrastructure benefits an exempt organization. The possibility of inefficiency and distortions in capital programming are evident.

The exemption for debt service is likely necessary but has some potential negative consequences. Due to the Contract Clause in the US Constitution, states are generally unwilling to limit the ability of local governments to make debt service payments. However, this creates a situation where the incentive is for municipalities to find ways to use debt financing, which may raise debt levels for municipal governments in Kansas. Studies in other states with tax limits have indicated that debt levels may rise in any case, this provision can only increase the incentive for these type of effects.

The provision for allowing revenue growth through annexation/consolidation has the likely consequence of making smaller municipalities located near larger ones targets for annexation efforts. If significant economies of scale are present in the provision of public services, this may reduce costs of service. However, there are likely to be other effects in terms of the loss of autonomy for residents of the smaller municipality and a loss of a sense of place. Further, without limits, this provision may allow for the annexation/consolidation of areas where economies of scale are not present. This may result in less efficiency in public good provision.

The final incentive we discuss is the incentive for using special assessments. One may expect to see a proliferation of districts that use special assessments such as Community Improvement Districts and Business Improvement Districts. To take only one example, in the wake of the Proposition 13 and Proposition 4 initiatives, California saw strong growth in special districts that used assessments and fees as ways to finance public expenditure. While this might be a positive in the sense that those who benefit most from public expenditures are asked to pay for the services provided, the problem of agency and its associated costs through loss of control over the actions of district officials can create a myriad of accountability and transparency problems. California experienced a set of failures of "public facilities districts" during the 1990s and 2000s due to the actions of some district officials. State officials should monitor the development of districts in response to this law in order to assess the level of risk potential for municipalities.

To summarize, we have seen that the tax lid law offers strong incentives for certain types of behaviors for local governments in Kansas. It will be very interesting to see how the system of local government evolves in the state as municipalities respond to the new law.

Contact
Kenneth A. Kriz, PhD, Regents Distinguished Professor of Public Finance
Kansas Public Finance Center at Wichita State University Hugo Wall School of Public Affairs
ken.kriz@wichita.edu
(316) 978-6959