



## **Why Keep Indiana's Property Tax?**

Draft November 30, 2007

Comments Welcome

**Michael J. Hicks, Ph.D.**  
**Bureau of Business Research**  
**Miller College of Business**  
**Ball State University**  
**[mhicks@bsu.edu](mailto:mhicks@bsu.edu)**

*The views expressed in this paper are those of the authors and do not reflect those of the Ball State University or its governing bodies.*

## **Introduction**

This report provides analysis of the economics of local property taxes, in an effort to address the question as to whether Indiana needs a property tax. The goal is to assess the costs and benefits of the property tax system as it is currently structured and under different reforms.

## **Background**

As with most states Indiana taxes four major elements at the state level: wealth, income, consumption and activities. Property taxes are the primary tax on wealth. In 2007 Indiana ranked 29<sup>th</sup> nationwide in its per capita collection of property taxes. Of the surrounding states, only Kentucky enjoys a more favorable state property tax ranking.

The relatively favorable rankings for Indiana's property taxes at the state level mask two pernicious, and one mildly harmful aspect of the state's property tax system. The very rapid growth of property taxes in many areas combined with breathtaking intra-state variation in rates hold very dire consequences for the states economy. A modestly less dire condition is the method and result of property assessment in the state. We discuss each in turn.

The purpose of taxing property is that it offers a buoyant and stable revenue stream for the state. This offsets the highly volatile income and sales portions of the state's revenue stream. However, for taxpayers with relatively volatile incomes this stability in tax liability is not welcomed. Property taxes are viewed in most states as the appropriate local financing tool due to both their stability and the close link of home values to local public goods.

We begin our detailed analysis of property tax issues by examining the issues of Indiana's property tax growth, regional variation and assessment. We then examine the degree to which property taxes influence home prices and outline the role stability plays in comprehensive tax policy.

## **Growth and Variability in Indiana's Property Taxes**

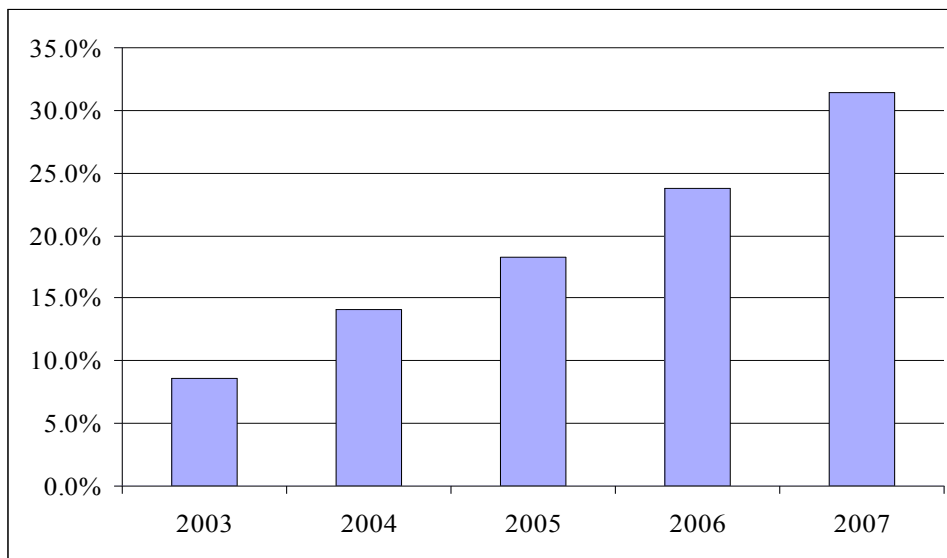
Indiana's property taxes, as of just a few years ago, could be viewed as a modest source of comparative advantage for the state. However, this observation belies the high variability in local rates and the rapid growth in many places.

At the state level property tax receipts have grown faster than incomes, but in some communities property tax rates have grown in excess of 25 percent for three consecutive years. This level of growth is due to changes in assessed value of homes, increase in government spending and the shift of property tax burdens to a shrinking tax base. It is useful to understand how Indiana finances local operations through the tax base.

Indiana has 1008 township assessment offices, of which fewer than 200 operate large scale assessment activities. All of Indiana's 92 counties have assessors, who either aggregate assessments administratively or aid smaller townships in their assessment process. Counties have between eight and 36 different taxing authorities embedded within their jurisdictions, and individual taxpayers frequently have three different activities vying for local property taxes (many have more). Indiana code sets spending growth limits for these individual authorities.

Counties aggregate budgetary requests from each county sub-unit, and submit a budget which is ultimately evaluated and certified by the state's Department of Local Government Finance. When the budget is certified, and assessments completed the property tax rates are set. This process differs from all other government budgetary process with which we are familiar.<sup>1</sup> Traditionally the expenditures, not the tax rates are the dependent variable in the budget formulation. One result is that tax rates on businesses and residents vary from 0.49 percent in Jennings Township to 4.99 percent in the South Bend Penn-Harris-Madison Annex #1 district. This formulary process, along with significant changes in assessment, has resulted in a six year total levy change of between 11.3 percent in Marshall County to 72.3 percent in Hendricks County. Statewide growth in property tax has remained at between twice and four times the rate of inflation over the past five years. See Figure 1.

**Figure 1, Cumulative Property Tax Growth Rates, 2003-2007<sup>2</sup>**



<sup>1</sup> Our study team has almost fifty combined years of research on public finance in more than two dozen states, federal and international governments. There may be others who budget like Indiana, we just cannot find them.

<sup>2</sup> Certification of 2007 levies are not complete as, these data represent only those certified as of this writing.

This high degree of regional variability in property tax rates has been found to contribute significantly to business location decisions.<sup>3</sup> Though no formal study has been performed for Indiana, tax rate variability is certainly a contributor to residential location decisions. As an example, simply crossing the Muncie City line into several adjacent townships will result in a 65 percent drop in taxes, which translates into a savings of \$1,157 annually for the median priced home in Indiana. These stark border effects are rare nationwide. Their effect is exaggerated in Indiana through the multiplicity of townships which dramatically increase the number of residential and business locations affected.

### **Property Taxes, Home Values and Local Public Services**

Research on property taxes and home values is not new, and in order to evaluate the role property tax we have tested a version of a model which tests the role property taxes plays on property values.<sup>4</sup> These are known as property tax capitalization models.

Estimating this type of model in Indiana is difficult due to extremely unreliable property assessments. Thus, we must employ Census data on home values as a substitute for the unreliable assessment data. Our model tests the role that the value of public goods and property tax collections play in the growth of property value in Indiana. Thus our model is:

$$\Delta(\text{Median Home Value}) = f(\text{Property Tax Rate}, \Delta\text{School Performance}, \text{Initial Home Values})$$

where the change in median home values is measured as the difference between the 2000 and 1990 Census values, the growth in high school graduation rates from 1990 to 2000 and the median home value in 1990 in each county.<sup>5</sup> All data are obtained from the U.S. Census. Results appear in Table 1.

---

<sup>3</sup> See Hicks, MJ "Transportation Infrastructure, Retail Clustering and Local Public Finance: Evidence from Wal-Mart's Expansion" *Regional Economic Development*, Vol 2(2) Winter 2006.

<sup>4</sup> We estimate a model inspired by Wallace Oates, 1969 estimate, taking into account the critique of school spending in this work. A number of other studies remain unreviewed in this analysis.

<sup>5</sup> The change in property tax values were used to circumvent concerns over endogeneity in the estimate. In an alternative specification in which initial home values and population were used as instrumental variables, the results were qualitatively unchanged. All values were estimated using a Newey-West correction for heteroscedasticity, and are logarithms of the values. Property tax rates are the 10 year unweighted mean of annual values.

**Table 1, Property Tax Capitalization**

	Coefficient
Common intercept	5.973909*** (4.05)
Average Property Tax Rate in 1990's	-0.162893 (-1.72)*
Change in HS Graduation rate 1990's	-0.307886 (-1.02)
Median Home Value 1990	0.584796 (7.24)***
Adjusted R-squared	0.34
Mean dependent variable	10.54
Durbin-Watson statistic	1.79
F-statistic	16.49
Prob(F-statistic)	0.000000

\*\*\* denotes statistical significance at the 0.01 level, \*\* at the 0.05 level and \* at the 0.10 level

These results are particularly strong, explaining a large proportion of the observed variation in home values during the 1990's with three simple components: initial values, property tax rates, and change in school quality. Secondary statistical measures of performance suggest this model is appropriate for this analysis.<sup>6</sup> The results are also straightforward. This analysis is concerned with the property tax rate.

Our results give us an elasticity measurement, or responsiveness of property values to property tax rates. Thus, we can determine from this estimate that a one percentage point increase in property tax rates results in a roughly \$733 reduction in the value of a home. Interestingly, if we apply a 1 percentage point increase in property tax to the average valued home from 1990 through 2000 we would observe a \$675 tax. These estimates do not differ in a statistical sense (that is, the confidence interval or our statistical model includes the tax estimate).

This result has important considerations for housing markets in Indiana. It suggests, as do the most recent economic studies on the issue, that when accounting for the level of public services available, property taxes are almost fully capitalized into home prices. That is, additional costs of local property taxes simply reduce the market value of the home by a proportional amount. This is very consistent with the most recent studies of housing values and property taxes.<sup>7</sup>

The result that home values fully absorb the additional property tax costs strongly implies that perceived quality of local public services do not vary with property tax rates.

<sup>6</sup> There is no evidence of collinearity, and we can exclude serial correlation from the result. This latter is especially important due to the similarity of urban area growth versus rural area growth during the sampled period.

<sup>7</sup> See Palmon, D and BA Smith, (1998) "New Evidence on Property Tax Capitalization" Journal of Political Economy, vol 106(5) pp 10991111.

This in turn casts serious doubt on the efficiency of locally provided public goods in Indiana.

### **Property Tax, Revenue Stability and Public Sector Costs**

The preceding analysis of property taxes in Indiana provides stark evidence as to the concerns many citizens have with the state of property taxation in Indiana. However, property taxes do play an important role in state and local public finance in Indiana. In this section we review the revenue significance property taxes play in our state's public financing, and we outline the effects property taxes play on revenue stability and local government employment.

Property taxes comprise a large part of the financing of the state's public services. All of it is dedicated to local finance. As we have detailed in other reports, placing the full burden of our states' property taxes onto sales taxes or income taxes would result in an enormous revenue shift. In so doing, Hoosiers would bear the highest sales or income taxes or combined taxes in the nation. Even with local expenditure cuts outside of historical experience – perhaps in the order of 30 percent – any resulting revenue shift completely to other tax instruments would make Indiana well outside the experience of the average state.

Property taxes serve a role beyond that of simply providing a large revenue source, they provide a stable revenue source. Both incomes and sales taxes vary dramatically with a business cycle. Property tax revenues are more resilient to short run fluctuations in economic activity. This property is important because instability of tax revenues have long been associated with the growth of government spending.<sup>8</sup> For Hoosiers with even short memories, the impact on public services of the most recent cyclical downturn should prove reason enough to worry about fiscal instability. We test both hypotheses in simple models below.

In order to formally estimate the role property taxes play in overall revenue variability in U.S. states, we examined the role the presence of a property played in the variance (a measure of variability from the mean) of overall state tax revenues in the 48 conterminous states from 1982-2005. Our model tests the variance over a five year period annually, as a function of the presence of a property tax, and the variability of overall revenues in adjacent states and previous values of variability.<sup>9</sup> Results appear in Table 2.

---

<sup>8</sup> See Dye and McGuire, 1991 for empirical examples. The growth in government spending is due to government 'hedging' against cyclical downturns that are associated with recessions.

<sup>9</sup> The model includes 48 states, from 1992 through 2006 with data gathered from Tax Analysts and the Bureau of Economic Analysis. The model is a panel, EGLS with white-washed standard errors. The spatial matrix for the dependent variable is a row normalized first order contiguity matrix.

**Table 2, Property Tax Variability**

	Coefficient
Intercept	12.77676*** (11.99)
Property Taxes	-1.141298* (-1.67)
Regional Variance	0.217557*** (4.10)
Past Variance	0.908543*** (55.04)
Adjusted R-squared	0.83
Mean dependent var	19.86
Durbin-Watson stat	1.82
F-statistic	1116.6
Prob(F-statistic)	0.00

\*\*\* denotes statistical significance at the 0.01 level, \*\* at the 0.05 level and \* at the 0.10 level

These preliminary results suggest that past variability in state tax revenues, the experience of neighboring states and the presence of a property tax all affect variance in overall state revenues.<sup>10</sup> Importantly, the presence of property taxes reduces short run variability by 16 percent. This is an economically significant finding.

While property taxes add a stabilizing element to overall revenues, this stability in turn increases local government employment. Using a model similar to that presented in Table 2, we estimated the role property taxes and variability of tax revenues play on overall local employment and find a very strong relationship between tax revenue instability and higher local employment growth.<sup>11</sup>

It is clear that the presence of a property tax serves an important role in both the ability of the state to pay for public services and as a stabilizer of overall tax revenues. This role leads us to three important conclusions.

### Summary and Conclusions

This brief report outlines some economic consequences of property taxes which we have not discussed in other settings. We offer evidence and analysis on three major concerns regarding property taxes.

First, we identify rather large regional variability and unusually high growth in property tax revenues in Indiana. Second, we find that the trade-off between quality

<sup>10</sup> The use of neighborhood effects accounts for, among other things, regional business cycles.

<sup>11</sup> This model employs an instrumental variable approach with property tax presence instrumenting the variability value. For this reason, it is far more difficult to decompose the pure property tax impact from the overall variability impact.

public services and local property taxes is very poor. The result is that home values are adversely affected by local property tax rates – a conclusion that is invisible in the current assessment setting. This is not infrequently a result, and in this setting very consistent with the most contemporary research on the matter. It is also a strong recommendation for a reduction in Indiana’s local government spending.

Finally, we examine the role property play on overall budget stability and growth of local government. This analysis is fairly unequivocal in its conclusion that property taxes play an important role in the stability of state finances. We also conclude, somewhat more tenuously, that property taxes serve to limit local growth across the nation.

The conclusions drawn from these differing analysis suggest two things. First, a significant adjustment in the method in which property taxes are assessed and local governments budget public services is warranted. This inevitably will reduce, to some degree, the overall property taxes collected in Indiana. It will also help to clarify the costs and benefits of local spending decisions.

Second, we believe that some residual property tax is also appropriate, and is justified by concerns over local government efficiency and size. Indeed, other researchers have concluded similarly, and among the key findings are that property tax limits (of the type proposed in at least four different plans) play a role in limiting local government growth.<sup>12</sup>

## Contact

Michael J. Hicks, Ph.D.  
Bureau of Business Research  
Ball State University

---

<sup>12</sup> See Poterba J. and K. Reuben. “The Effect of Property-Tax Limits on Wages and Employment in the Local Public Sector” *The American Economic Review*, vol 85(2), 1995.