



A Demographic Analysis of the Impact of Property Tax Caps on Indiana School Districts

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Introduction

In 2008, the Indiana legislature passed and the governor signed into law House Enrolled Act No. 1001, now referred to as Public Law 146-2008, which capped Indiana school districts' ability to raise revenues from the local property tax without local voter approval. To phase in the impact of the law, the state provided school districts with levy replacement grants in 2009 and 2010 that offset losses of greater than 2% of their property tax revenues. In 2011, the levy replacement grant program expired, and schools districts experienced the full impact of the law. As a result, property taxes for homesteads¹ were capped at 1%, agricultural land at 2%, and nonresidential real property at 3% of total assessed value (Indiana Department of Local Government Finance 2008). For school boards hesitant to seek voter approval of higher taxes, these caps represented a potential loss in funding. To that end, the exploratory study described in this article analyzed the law's impact on the school districts by demographic type and sought to establish the predictive value of select independent variables on school district funding losses attributable to property tax caps.

The article is divided into four sections. Following this introduction is a section on the background of this property tax reform in Indiana and a comparison to other states. The next section provides a description of the methodology used in the study while the third section discusses findings. In the final section, conclusions and recommendations for future research are presented.

Background

Due to a series of state supreme court and state tax court decisions between 1996 and 1998, Indiana revised its true value tax system to reflect a market value system with an initial reassessment of real property in 2001 (Faulk 2004). Under the previous assessment method, true tax value was based on "reproduction cost" rather than the current market-based system of "replacement cost" in current building techniques and methods. Reproduction costs were defined as what it would take to reproduce the structure on the existing land or lot based on materials used and methods

used in the time of the structure's construction. In addition, annual adjustments or "trending" of property values became part of Indiana's move to a market-based assessment system that began in 2002. Trending required assessors to research sales of properties in a particular area over the previous two years. Using that information, assessors then estimated the values of other properties in the same area to determine an assessed value. This change in property tax assessment resulted in significant increases in assessed value for residents and concomitant increases in their property taxes. Public Law 146-2008 represented the state's efforts to respond to this phenomenon through "property tax reform;" that is, the use of state-imposed local property tax caps.

Historically, states have responded to dramatic increases in assessed value of property in a variety of ways. For example, in 1978, California voters approved Proposition 13, which reduced property taxes to 1% for homestead and commercial property and limited the growth rate of future assessments to 2% (Glyn and Drenkard 2013). Then, in 1980, Massachusetts voters passed Proposition 2 ½ which served to reduce local property tax growth in two manners. First, it limited the annual growth of local property tax collections to no more than 2.5% of the previous year's levy limit, plus new growth.² However, this percentage could be exceeded by local voter approval. Second, property tax collections could not exceed 2.5% of assessed valuation, even with voter approval (Massachusetts Department of Revenue n.d.).³

In 1992, Colorado voters approved a constitutional amendment referred to as the Taxpayer Bill or Rights (TABOR). In its original form, TABOR restricted revenues at both the state and local levels. State and local government units, including school districts, could not raise tax rates without voter approval or spend revenues collected under existing tax rates if revenues grew faster than the rate of inflation and population (Colorado Department of the Treasury n.d.). However, in 2005, Colorado voters returned to the polls passing Referendum C, which eliminated revenue limits from 2006 to 2010 and made modifications to the original amendment after that period to make it less onerous (Colorado Legislative Council Staff 2009; Lav and Williams 2010).

A potential consequence of property tax caps is an increase in bonding. For example, after implementation of Public Act 87-17, the "Property Tax Extension Elimination Law," in 1991, enacting assessment caps in Cook County and contiguous "collar" counties in Illinois, school district bonded debt increased (Illinois Department of Revenue n.d., Rudow 2003). In 1993, Michigan capped school district general fund property tax revenues. According to Rudow (2003, 543), the Michigan property tax cap had four major outcomes: (1) The value of bonds passed tended to increase in high spending districts by 172%; (2) The value of bonds passed tended to increase for low spending districts by 26%; (3) The property values of high spending districts tended to drop; and (4) High spending districts were able to exceed the cap by passing more operational expenses on to debt service. Because the ability to fund normal maintenance and upkeep were limited by statute, Michigan school districts also tended to delay

facility improvements, which resulted in increased use of bonding, particularly with regard to schools safety (Zimmer and Jones 2005).

Methodology

Of Indiana's 294 school districts, 293 were included in the study.⁴ The school district was the unit of analysis. Data sources were reports of the Indiana General Assembly (2009, 2013), Indiana Department of Local Government Finance (2011, 2013), and Indiana Department of Education (2009, 2012).⁵

Variables

Current assessed value of real property for 2009 and 2012. Real property was defined as land and structures. It included agricultural and nonagricultural land; houses; and commercial and factory buildings.

Debt service ratio. A school district's debt service ratio equaled its total indebtedness divided by its assessed valuation of property.

Total indebtedness. Total indebtedness was the sum of a school district's temporary loans, school bonds, retirement bonds, and lease/rental agreements. It is also referred to as total principal obligation or total principal owed.

Demographic profile type. The Indiana Department of Education classifies each school district as either metro (Demotype 1), suburban (Demotype 2), town (Demotype 3), or rural (Demotype 4) based upon the U.S. Census Bureau's locale codes classification system for school districts which focuses on population density of the district, not just the school's physical location. In Indiana, rural school districts are the most common demographic profile type with 158 school districts.

Net Property tax cap credit or "net credit". The net property tax cap credit was designed by Indiana lawmakers as a credit to local property taxpayers in a school district. At the same time, this variable represented a financial loss to school districts. In this study, this variable represented an estimate of the amount of money a school district lost due to the property tax cap in 2011 after state replacement grants expired in 2010.

Capital projects fund statutory limit. A school district's capital projects fund statutory limit under Act 388 is \$0.4167 per \$100 of assessed property value.

Data Analysis Procedures

Analysis of variance (ANOVA) was used to analyze mean net credits, or losses, experienced in 2009 and 2012 by Indiana school districts. Second, the strength of debt service ratio, assessed valuation of property, and/or total indebtedness as predictors of variations in net credit was analyzed through a general linear model (GLM.)

Analysis of Results

ANOVA with a Bonferonni adjustment and Tukey grouping together found statistically significant differences in mean property tax cap credits across school districts by demographic type. (See Tables 1-4.) In 2009, mean property tax credits for suburban and small town school districts were similar and significantly different from those for metropolitan and rural school districts. In 2012, these relationships had

Table 1 | ANOVA Results of School District Mean Net Credit by Demographic Type: 2009

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr >F
Model	3	1.3634	4.5447	26.22	<.0001
Error	281	4.8704	1.7332		
Corrected Total	284	6.2338			
R-Square=0.2187 Coefficient of Variation=255.4500 Root MSE=1,316,524 Net Credit Mean=515,374.5					

Table 2 | ANOVA Results of School District Mean Net Credit by Demographic Type: 2012

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr >F
Model	4	1.9696	4.5447	26.22	<.0001
Error	284	6.6049	1.7332		
Corrected Total	288	8.5745			
R-Square=0.2297 Coefficient of Variation=225.3235 Root MSE=1,525,019 Net Credit Mean=676,813.1					

Table 3 | Tukey's Grouping of District Demographic Type Transformed Data: 2009

Tukey Grouping	Mean	Number	Demotype
A	1,133.33	36	1
B	675.65	61	2
C	467.28	30	3
D	202.31	158	4
Notes: Demotype 1=Metro; Demotype 2= Suburban; Demotype 3=Small Town; Demotype 4=Rural. Means with the same letter are not significantly different.			

Table 4 | Tukey's Grouping of District Demographic Type Transformed Data: 2012

Tukey Grouping	Mean	Number	Demotype
A	2,406,429	37	1
B	1,312,114	62	2
C	385,372	30	3
D	85,306	160	4
Notes: Demotype 1=Metro; Demotype 2= Suburban; Demotype 3=Small Town; Demotype 4=Rural. Means with the same letter are not significantly different.			

changed, and small town and rural school districts were similar and significantly different from metropolitan and suburban school districts.

Next, the analysis turned to predictors of variations in the net tax credit. A general linear model was used where predictor variables—district debt ratio, assessed valuation of property, and total indebtedness—were used alone and in combination to reach the maximum amount of variation in the dependent variable, district net tax credit, in 2009 and 2012. The results indicated that the model using all three predictor variables explained the greatest amount of variation at approximately 51% for 2009 and 50% for 2012.

Conclusions

The purpose of this exploratory study was to analyze the impact of state-imposed property tax caps on Indiana school districts by demographic type, where demographic type was defined as metropolitan, suburban, town, or rural. The study also sought to establish the predictive strength of school districts' debt ratio, assessed valuation of property, and total indebtedness in relationship to their net property tax credit. The net property tax credit represented a credit to local property taxpayers in a school district, i.e., a reduction in their property taxes. Conversely, the net property tax credit represented a loss of revenue to school districts. Two years of data were used in the study. While the law was enacted in 2008, it did not take full effect until 2011. As such, 2009 data were used as a base for comparison with 2012, a year after the full implementation of the law.

The results of the study indicated that there was a shift in the impact of the net property tax credit between 2009 and 2012. In 2009, the mean net property tax credits for suburban and small town school districts were similar and significantly different from those for metropolitan and rural school districts. In 2012, these relationships had changed: Small town and rural school districts were similar and significantly different from metropolitan and suburban school districts. Using a general linear model, school districts' debt ratio, assessed valuation of property, and total indebtedness predicted 51% of the variation in school districts' net property tax credits in 2009 and 50% in 2012.

These results indicate the need for further research, adding additional years of analysis to the study in order to determine if initial shifts in the impact of the net property tax credit across types of school districts are sustained. Also, while school districts' debt ratio, assessed valuation of property, and total indebtedness predicted around half of the variation in school districts' net property tax credits in 2009 and 2012, analysis of additional years of data will be helpful in establishing whether or not these independent variable retain their predictive power.



Endnotes

- ¹ In Indiana, a homestead is an individual's principal place of residence consisting of a dwelling and up to one acre of immediately surrounding real estate.
- ² It should be noted that there were some exclusions for debt service.
- ³ This is also referred to as the levy ceiling.
- ⁴ One school district, the La Porte Community Schools, did not have sufficient data for inclusion in the study.
- ⁵ Calendar year data were used for the study.

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