Indiana's Property Tax Caps
Effects on Equity, Service Delivery, and Tax Competitiveness

Indiana's property tax caps provide tax savings for taxpayers but a loss of revenue for local governments that provide them with services. This research weighs these competing impacts of tax caps across counties, cities and towns, and townships. The results demonstrate that government revenue losses increase as most indicators of wealth and economic well-being decline, and that this is not explained by larger government tax levies. Furthermore, property tax savings primarily accrue to commercial and industrial property rather than residential property classes, suggesting that it is not the economically distressed populations who are receiving these tax savings. The study also finds evidence that these revenue losses may have resulted in reduced service delivery and infrastructure provision. Finally, review of other studies demonstrates that the property tax caps have not resulted in competitive tax rates for economic development. Implications for policy makers suggest substantive opportunities for improving both the equity and efficiency of Indiana's local public finance system.

In 2008, Indiana passed property tax caps that limit an owner's property tax burden to a fixed percentage of the property's gross assessed value. The limit varies across three classes of property at rates of 1% (class 1 – residential homestead), 2% (class 2 – non-homestead residential and farmland), and 3% (class 3 – commercial and industrial). When tax bills exceed the property tax cap limit, taxpayers receive a *circuit breaker credit* that is a tax savings to the payer but a revenue loss to their local government service providers. More than $704 billion were saved by taxpayers and lost to local governments in 2013 (IDLGF, 2013).

The property tax caps remain a controversial policy in Indiana, in no small part because of concerns over equity. Higher property values allow for larger government levies, suggesting that local governments with greater citizen needs might be disproportionately affected, particularly if the bulk of the tax savings are not flowing to those citizens in need of the services.

This research examines these concerns for counties, cities and towns, and townships by: 1) studying the correlations between circuit breaker loss distributions and indicators of economic distress (e.g., income, employment, health insurance, poverty rate, % SNAP recipients); 2) studying the effect of circuit breaker revenue losses on government spending and debt-related obligations, allowing for some inference about the implications for public programs; and 3) reviewing interstate comparisons of property tax rate competitiveness.

EQUITY AND CIRCUIT BREAKERS
This section considers the relationships between social indicators and circuit breakers using regression analysis (see Data and Methodology textbox). This method avoids spurious associations between large government spending and these indicators, and instead reveals the correlation between the circuit breakers and the indicators alone. Of course, as a matter of accounting, total property tax cap losses are determined by the aggregate property tax bills in excess of the allowable percent of gross tax rate. Regression analysis sweeps away the importance of the tax levy, so what it in fact shows is how these indicators correlate with concentrated areas of low gross assessed values of individual parcels that ultimately produce circuit breakers.

Figures 1 through 3 summarize the correlations between various economic indicators and the property tax caps for counties, cities and towns, and townships, respectively. For each indicator, the dollar amounts in the figures can be interpreted as the predicted effect on the circuit breakers if the social indicator increased by one standard deviation. (Variable definitions and the corresponding standard deviations for each level of government and the social indicator of interest can be found in the textbox.) For context, the mean tax levy for county governments in Indiana is $13.1 million.

Looking at the results for county governments in Figure 1, if two county governments had the same tax levy but median household incomes that differed by $9,564 (equal to the standard deviation of household income), the unit with the *lower* household income would have $302,576 *more* in total circuit breaker losses than the average income county, with $208,044 of the difference (69 percent) coming from class 3 property (e.g., commercial, industrial, business personal property). In other words, county governments with low-income households lose fiscal resources that are primarily tax savings for commercial and industrial property owners. Similarly, a county whose poverty rate was one standard deviation higher (2.88 percent) than another county with the same tax levy would have $235,702 more in total circuit breaker losses than the average county; about 61 percent, or $144,771, of those losses would result from class 3 properties. A one standard deviation (3.1 percent) increase in the percent of the

Figure 1. Correlations between circuit breaker credits by property class and a standard deviation change in economic indicator for Indiana counties, 2013
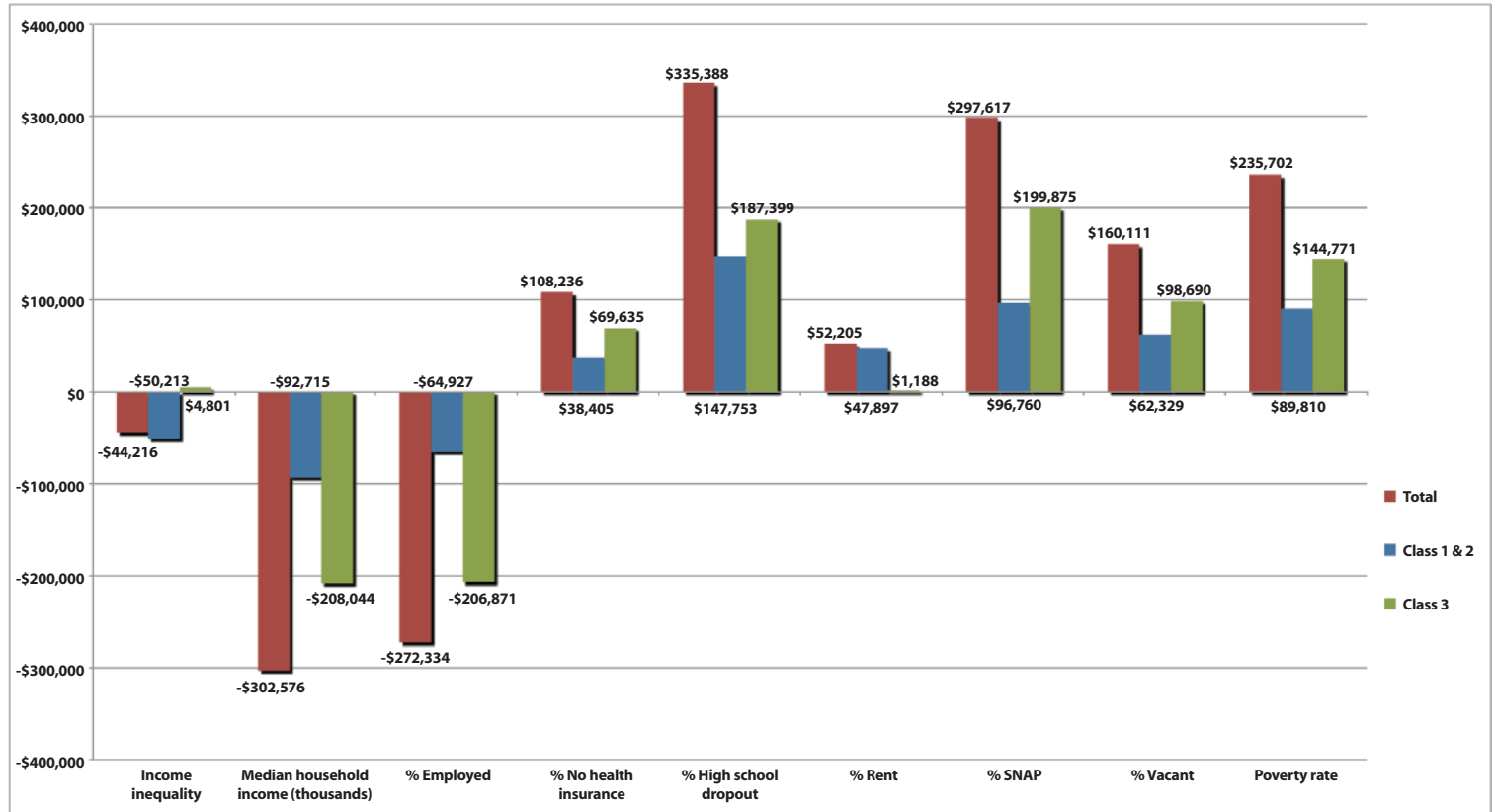
population receiving support from the Supplemental Nutrition Assistance Program (SNAP) results in an additional $297,617 in total circuit breaker losses, with 67 percent ($199,875) awarded to class 3 properties. In summary, county government circuit breaker losses are higher in economically distressed areas and the majority of those losses are tax savings for commercial and industrial property owners.

Figure 2 displays results for Indiana's city and town governments, where the average tax levy is $2.75 million. When observing poverty rate, a one standard deviation increase in poverty rate (7.87 percent) results in $223,610 in additional total circuit breaker losses, holding the levy constant; with 70 percent of those losses originating from class 3 properties. The magnitude of losses from the poverty rate has almost the same total dollar impact from circuit breakers as in the case for counties reported in Figure 1, however, this amount represents a much larger share of the fiscal resources available to city governments. In general, this pattern tends to be true across the indicators of economic distress. In some cases, like the percent of population without health insurance, cities experience larger losses in magnitude than the counties despite having, on average, smaller budgets. A one standard deviation increase (6.52 percent) in the percent of population without health insurance results in $133,178 in additional total circuit breaker losses, of which 64 percent originate from class 3 properties. Similar to the county governments, the majority of circuit breaker losses are a result of credits to class 3 or commercial and industrial properties.

Figure 3 shows the results for township governments—fiscally the smallest of the government levels with a mean tax levy of $213,323.

Townships are also the unit responsible for poor relief in the form of township assistance in Indiana, so correlations between indicators of economic well-being can be impactful even if magnitudes are small. For example, a standard deviation increase in high school dropouts (4.93 percent) is associated with an $11,840 increase in circuit breaker losses, which is about 5.5 percent of the average township levy. Approximately 55 percent of those circuit breaker losses originate from commercial and industrial property tax bill credits.

Broadly, at all levels of government, a consistent pattern emerges that circuit breaker losses flow to governments in places with lower household incomes, higher poverty rates, lower levels of employment, lower levels of health insurance coverage, higher high school dropout rates, and higher levels of SNAP participation. Most of these additional losses, however, are unlikely to be tax savings for residential property taxpayers in those groups, as the majority emerge from commercial or industrial property classifications.

CIRCUIT BREAKER LOSSES AND FISCAL OUTCOMES: IMPLICATIONS FOR GOVERNMENT ACTIVITIES

The previous analysis examined where circuit breaker revenue losses were accruing according to the economic characteristics of the citizens. This section studies the effect of the circuit breaker losses on two fiscal outcomes for local government: total spending and total debt-related obligations. As before, regression analysis is used to explain the effect of circuit breaker losses on total spending and total debt-related obligations (DRO, see Table A1 for definition) after removing the

Figure 2. Correlations between circuit breaker credits by property class and a standard deviation change in economic indicator for Indiana cities and towns, 2013
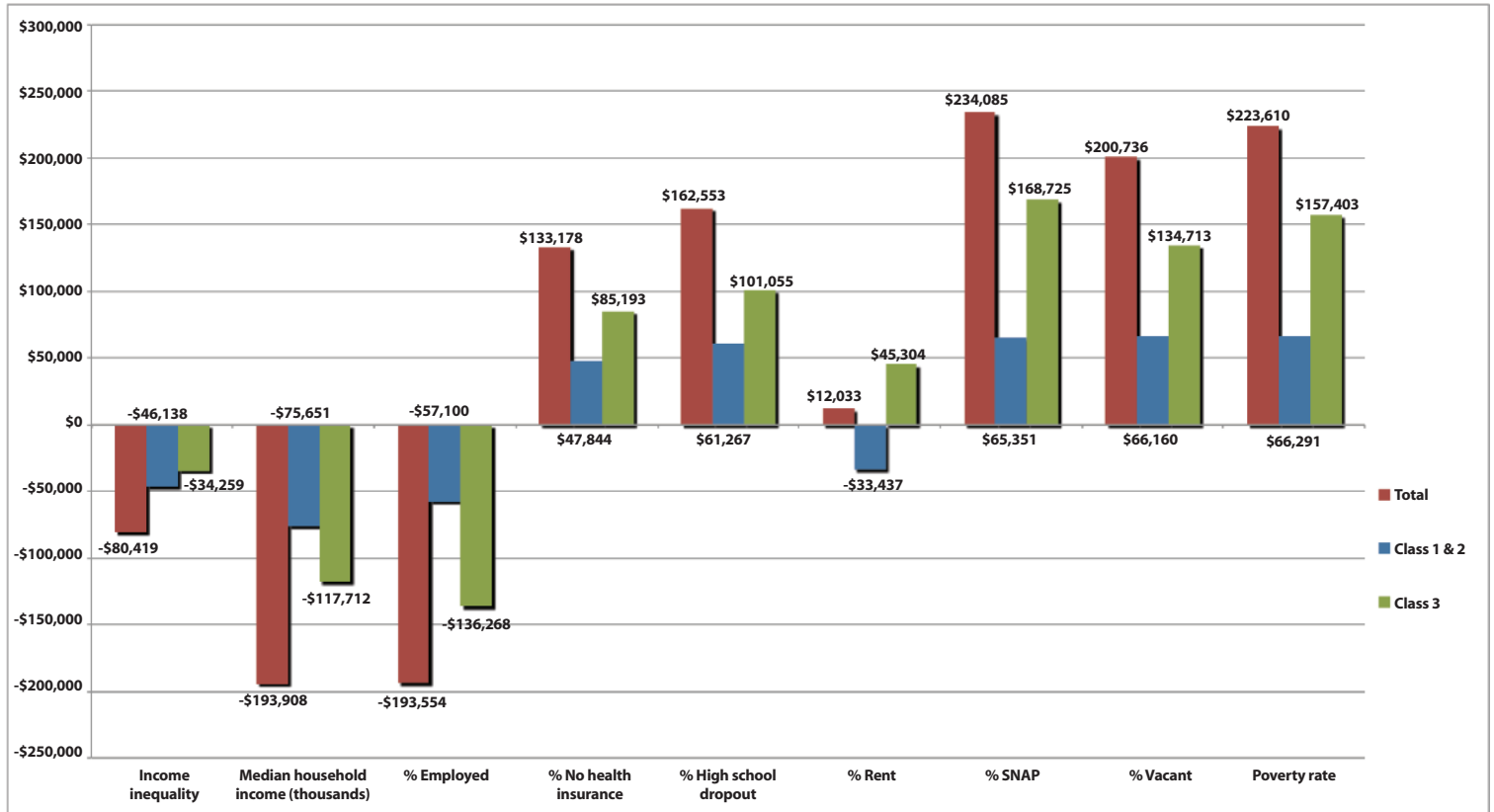

Figure 3. Correlations between circuit breaker credits by property class and a standard deviation change in economic indicator for Indiana townships, 2013
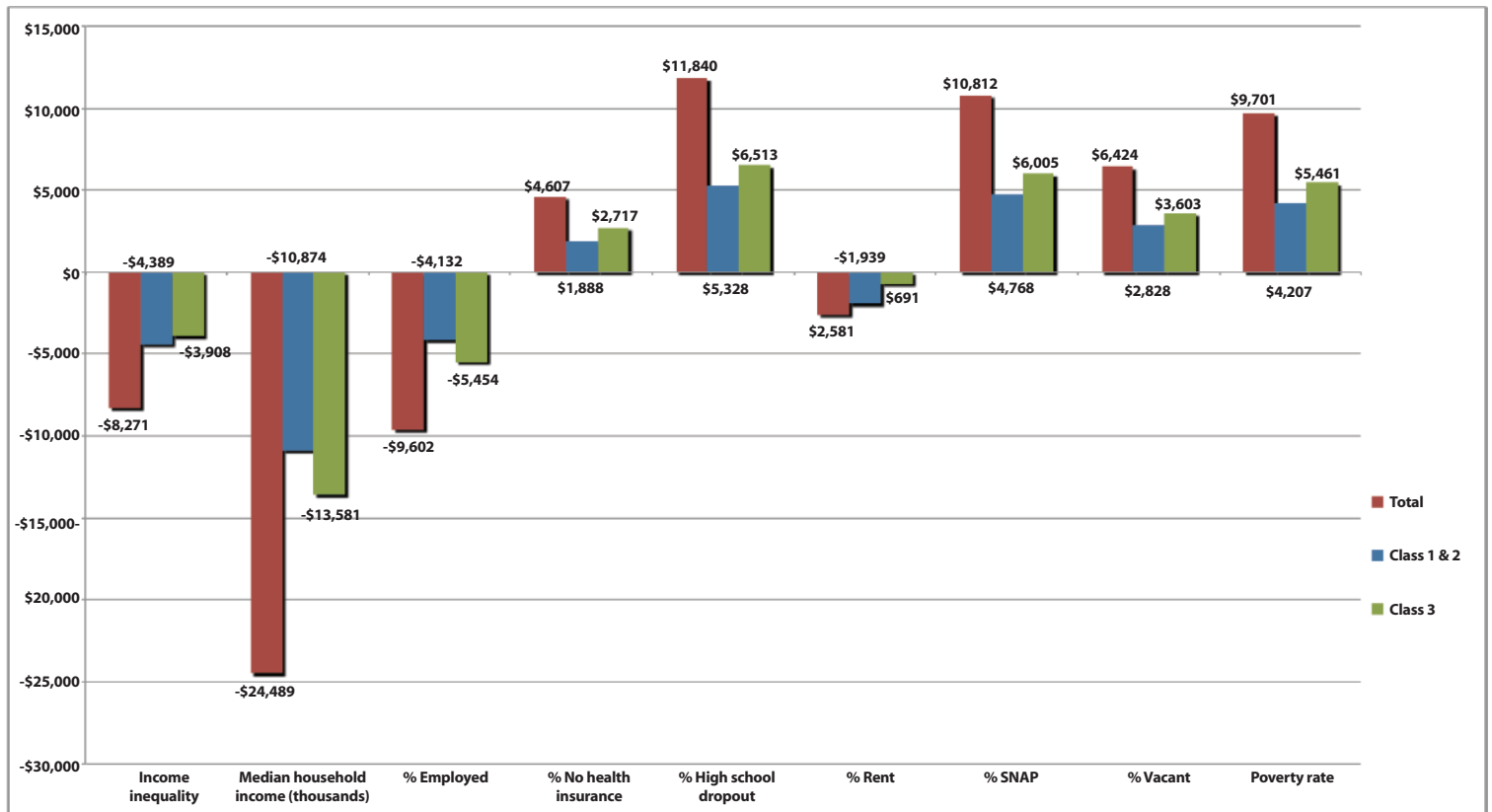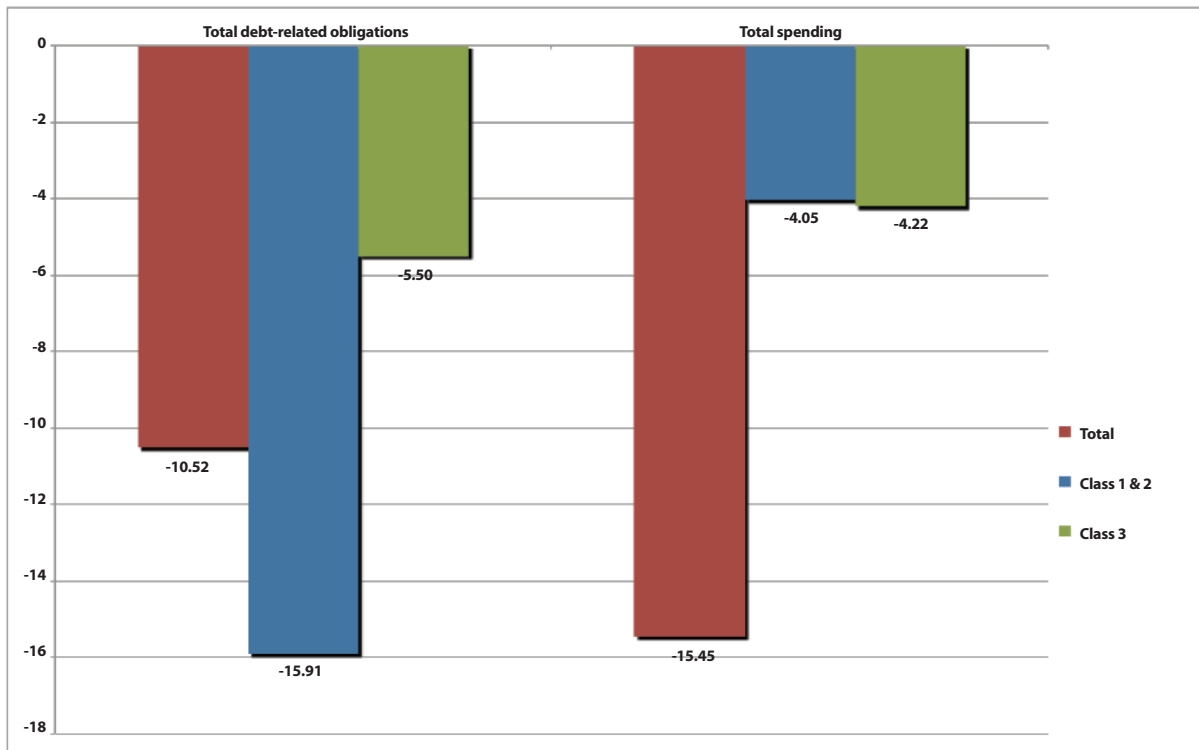

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Figure 4. Correlations between circuit breaker credits by property class and fiscal outcomes for Indiana local governments, 2012

influence of each government's tax levy. The intention is to gain insights into the effect of circuit breakers on local government activities, but it should be noted that these activities can only be imperfectly represented with measures of spending and DRO. Total spending is the only available measure for the provision of government services to residents. The provision and maintenance of physical capital and infrastructure is approximated by the measure of DRO. These are imperfect measures of service, that do not address whether or not these service reductions represent efficiency gains by cutting government activities that are not demanded by local citizens. They are, however, reasonable approximations from objective data that are comparable across government units.

Figure 4 demonstrates the results of the correlation between property tax caps and spending and debt-related obligations, holding constant the size of each government's levy. For counties with the same size tax levy, spending and DRO are $10.52 and $15.45 lower, respectively, for every dollar of circuit breaker losses they incur. For cities and towns, DRO is $15.91 lower while spending is $4.05 lower per dollar of circuit breaker losses. Townships see approximately $5 less for both spending and DRO per dollar of circuit breaker losses.

In summary, losses of revenue to the property tax caps are correlated with lower spending and DRO across the types of government in our study. This implies that local governments in Indiana respond to these revenue losses with reductions in services and infrastructure provision.

PROPERTY TAX COMPETITIVENESS

Thus far, the analysis reveals that property tax caps have resulted in service reductions from local governments in exchange for tax savings

that largely accrue to commercial and industrial property, particularly in areas with high poverty, low income, etc. It is worthwhile to consider, however, how property tax caps might affect Indiana's tax competitiveness. Improved tax competitiveness could attract economic development that mitigates factors revealed in this analysis.

Comparing property tax burdens among localities in different states is an incredibly challenging exercise. As a result there is limited information. The easiest and most commonly employed approach is to compare property tax collections per capita—a ranking produced by the Tax Foundation (The Tax Foundation, 2013). Indiana's property tax burden is below average according to this approach. The problem with such a method is that it depends on the actual amount of property investment that occurs, so states with low tax rates and high value investment might mistakenly appear to have high property tax burdens.

A better approach is to estimate the tax burden on different types of hypothetical investments in each state. This simulates the relevant decision process used in the private sector and does not punish states for having high levels of investment. Such a study was recently completed by the Minnesota Center for Fiscal Excellence and the Lincoln Institute for Land Policy in a comparison of property tax burdens in the 50 states for the largest cities (Lincoln Institute & MCFE, 2013).

Table 1 provides a summary of this study's findings for Indianapolis (the only Indiana city in the study). It lists the different types of hypothetical investments that were considered in each state, along with Indianapolis' effective tax rate and rank. The results indicate that Indianapolis is among the lowest tax burden cities for residential-type investments, particularly for homestead properties, relative to

Table 1. Indianapolis' rankings among large cities in the 50 states for hypothetical investments

50-State Property Tax Comparison Study	Indianapolis' rank (1=highest; 50=lowest)	Effective tax rate
Urban Industrial Property Taxes (60% Personal Property): $100,000 valued property	8	2.160%
Urban Industrial Property Taxes (60% Personal Property): $1 million valued property	8	2.160%
Urban Industrial Property Taxes (50% Personal Property): $100,000 valued property	8	2.250%
Urban Industrial Property Taxes (50% Personal Property): $1 million valued property	8	2.250%
Urban Industrial Property Taxes (60% Personal Property): $25 million valued property	9	2.160%
Urban Industrial Property Taxes (50% Personal Property): $25 million valued property	9	2.250%
Top 50 Industrial Property Taxes (60% Personal Property): $100,000 valued property	10	2.160%
Top 50 Industrial Property Taxes (60% Personal Property): $1 million valued property	10	2.160%
Top 50 Industrial Property Taxes (50% Personal Property): $100,000 valued property	11	2.250%
Top 50 Industrial Property Taxes (50% Personal Property): $1 million valued property	11	2.250%
Top 50 Industrial Property Taxes (60% Personal Property): $25 million valued property	12	2.160%
Urban Commercial Property Taxes: $100,000 valued property	13	2.853%
Top 50 Industrial Property Taxes (50% Personal Property): $25 million valued property	14	2.250%
Urban Commercial Property Taxes: $1 million valued property	14	2.853%
Urban Commercial Property Taxes: $25 million valued property	14	2.853%
Top 50 Apartment Property Taxes: $600,000 valued property	22	1.792%
Urban Apartment Property Taxes: $600,000 valued property	25	1.792%
Top 50 Commercial Property Taxes: $100,000 valued property	26	1.902%
Top 50 Commercial Property Taxes: $1 million valued property	28	1.902%
Top 50 Commercial Property Taxes: $25 million valued property	29	1.902%
Urban Homestead Property Taxes for a Median Value Home – Listed by Net Tax Payable 2013 – With Assessment Limitations	37	0.997%
Urban Homestead Property Taxes: $150,000 valued property	38	0.997%
Urban Homestead Property Taxes for a Median Value Home – Listed by Net Tax Payable 2013	38	0.997%
Top 50 Homestead Property Taxes for a Median Value Home – Listed by Net Tax Payable 2013 – With Assessment Limitations	38	0.997%
Urban Homestead Property Taxes: $300,000 valued property	40	0.997%
Top 50 Homestead Property Taxes: $150,000 valued property	41	0.997%
Top 50 Homestead Property Taxes for a Median Value Home – Listed by Net Tax Payable 2013	41	0.997%
Top 50 Homestead Property Taxes: $300,000 valued property	41	0.997%

the major cities in other states. The Indianapolis rankings rise near the middle of the country for commercial property investments and apartments. For industrial investment, Indianapolis is among the highest property tax burden cities in the nation. It would seem that the property tax caps have not resulted in particularly competitive rates of taxation for industry, at least in comparing Indianapolis to other large cities around the country.

SUMMARY AND POLICY IMPLICATIONS

The findings of this study support equity concerns for the consequences of the property tax caps. Revenue losses to local governments are disproportionately landing in economically distressed areas, and this cannot be explained by larger government tax levies. These losses represent largely tax savings for owners of class 3 property (commercial and industrial). These revenue losses are also correlated with lower levels of spending and debt-related obligations, suggesting that they are resulting in a reduction or discontinuation of services and infrastructure provision. Finally, while it is difficult to compare property tax burdens across states, the comparisons between Indianapolis and other capital cities suggest that Indianapolis is a surprisingly high property tax rate city when it comes to industrial property.

This research suggests that state aid to local governments in economically distressed areas might improve the equity of the current system.[1] This is a common feature of states that impose local tax limitations, but the only similar tactic Indiana has employed after the implementation of the tax caps was to move the remainder of school district operating budgets and county welfare levies into the state's general fund as part of the 2008 property tax reforms. A more targeted relief system might be warranted since this research indicates that disparities exist beyond what can be explained by the size of local government. Further research into other states' property tax equity aid formulas would provide a valuable source of information.

The implication of Indiana's lack of competitiveness in property tax burdens for industrial and commercial property is also a source of concern, as economic growth could be the ultimate solution to all of these challenges. The high rates of taxation, however, will only continue to put pressure on local governments to provide property tax abatements in highly speculative attempts to attract economic development. Abatements remove segments of the property tax base, resulting in higher property tax rates for the existing properties and discouraging economic development and reinvestments in other areas where local politicians are less likely to receive political credit. Reforms to the property tax system should address these issues to provide a more competitive overall environment that does not rest on uncertain ventures.

[1] This study is only examining one aspect of a larger tax system that has potentially different equity implications. For example, some taxpayers receive abatements, exemptions, and other special treatments that create inequities that are then offset by the circuit breaker tax caps.

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DATA AND METHODOLOGY

Full results are available upon request from authors. "Point estimate" is arguably a misleading term here. Regressions are more commonly done on samples of populations, and the point estimate is accompanied by a confidence interval to infer the potential importance of sampling error. In the case here, all counties, cities, towns, and townships are employed in the regression using data from 2013 and 2012. As a result, the population is fully employed and the concept of statistical sampling is no longer directly applicable.

Table A1 displays the source of data and variable definitions. Table A2 provides summary statistics for these variables according to each unit of government.

Figures 1-3 were created using multivariate regression analysis of 2013 data on circuit breaker distributions and levies against socioeconomic indicators from the 2008-2013 American Community Survey. Specifically, for each social indicator (X) and circuit breaker loss category (Y), a regression of the following type was estimated:

$$Y = \beta_0 + \beta_1 Levy + \gamma X$$

The estimation of this regression holds constant the amount of the local government's tax levy, so that social indicator effects are not directly explainable by the amount of spending by the unit. All observations were included in the regression, even in cases when the amount of circuit breakers was zero. The regressions provide a point estimate for γ that is generically interpretable as "the change in Y for a one unit change in X." Since the unit basis of the different indicators differs (e.g., percentages, dollars), as does the observable variation in these different indicators, each value of γ was multiplied by the standard deviation of X for that sample.

For example, the city and towns regression produced $\gamma=28,410.61$ when X was the poverty rate and Y was the total amount of circuit breakers. The standard deviation for poverty rate among cities and towns was 7.87. So the value appearing for total caps in Figure 2 on the poverty rate bar is $223,610 (=28,410.61 x 7.87).

For Figure 4, the multivariate regression model was estimated using 2012 data on spending, debt-related obligations, and levies from the Indiana Fiscal Benchmarking Data as the two alternative Y variables, controlling for both the levy and the total circuit breaker losses (CB):

$$Y = \beta_0 + \beta_1 Levy + \gamma CB$$

Figure 4 is the point estimate on the circuit breakers, γ. The interpretation of γ is that holding constant a government unit's property tax levy, increasing total circuit breakers by $1 will change the variable in Y (spending or debt-related obligations) by $ γ.

Table A1. Variable definitions and data sources

Variable	Source	Definition
Levy	Certified Budget Data prepared by the Indiana Department of Local Government Finance, 2012-2013	The levy is the amount of revenue a local government could potentially raise through property taxes prior to consideration of property tax credits. The levy is computed by multiplying the taxable assessed value of a local government by its property tax rate and adding total local option income property tax replacement credits.
Total Circuit Breaker Losses	Impact of the Property Tax Caps prepared by the Indiana Department of Local Government Finance, 2012-2013	The sum of all Indiana property tax caps including Cap1, Cap2, Cap3, and a more focused cap for low-income senior citizens to cap their year-over-year growth.
Total Cap1 and Cap2 Losses	Impact of the Property Tax Caps prepared by the Indiana Department of Local Government Finance, 2012-2013	Indiana property tax caps limit the amount of property taxes paid by taxpayers to: 1% of gross assessed value (GAV) for homestead properties, 2% of GAV for residential properties, 2% of GAV for agricultural land, 2% of GAV for long-term care facilities
Total Cap3 Losses	Impact of the Property Tax Caps prepared by the Indiana Department of Local Government Finance, 2012-2013	Indiana property tax caps limit the amount of property taxes paid by taxpayers to: 3% of GAV for nonresidential properties, and 3% of GAV for personal property.
Herfindahl-Hirschman Index (HHI)	Calculated using income information from the American Community Survey 2012 5-year Estimates	This is an indicator of income inequality calculated by squaring each income bracket percentage, adding those outcomes together, and then dividing that sum by 10,000. Lastly, we calculate 1 – that outcome. The final number falls between 0 and 1 for each unit, with the closer the outcome is to 0 the more equal their income.
Median Household Income (thousands)	American Community Survey 2012 5-year Estimates	The median family income (in 2012 inflation-adjusted dollars)
Percent Employed	American Community Survey 2012 5-year Estimates	Percent of the population who are employed in the civilian labor force
Percent with No Health Insurance	American Community Survey 2012 5-year Estimates	Percent of the population with no health insurance coverage
Percent with No High School Diploma	American Community Survey 2012 5-year Estimates	Percent of the population with an educational attainment of 9th to 12th grade with no diploma
Percent Rent	American Community Survey 2012 5-year Estimates	Percent of housing units that are renter-occupied
Percent SNAP	American Community Survey 2012 5-year Estimates	Percent of the population with Food Stamp/SNAP benefits in the past 12 months
Percent Vacant	American Community Survey 2012 5-year Estimates	Percent of housing units that are vacant housing units
Poverty Rate	American Community Survey 2012 5-year Estimates	Percentage of families whose income in the past 12 months is below the poverty level
Total Debt-related Obligations	A special data extract from the Indiana Gateway for Government Units, 2012	Total debt-related obligations includes only the remaining obligation; that is, the principal, interest from bond and loans, and outstanding payments on leases. Total debt-related obligations does not include debt with a term less than 12 months or tax-anticipation debt.
Total Spending	Indiana Gateway for Government Units, 2012	Total spending of a local government is determined by summing the total annual disbursements of a local government for the fiscal year, with the exception of disbursements related to short-term debt, interfund transfers, and transfer to other local governments.

Table A2. Summary statistics by sample

Variable	County		City and Town		Township	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Levy, 2013	$13,138,424	$21,155,876	$2,749,706	$8,753,758	$213,323	$1,082,154
Total Circuit Breaker Losses, 2013	$1,089,198	$2,714,561	$453,781	$2,303,646	$23,084	$255,379
Total Cap1 and Cap2 Losses, 2013	$797,407	$1,945,932	$298,723	$1,362,340	$14,769	$143,201
Total Cap3 Losses, 2013	$281,729	$903,447	$152,712	$1,047,598	$8,186	$116,068
Herfindahl-Hirschman Index (HHI)	0.7325	0.0130	0.7025	0.0418	0.6995	0.045
Median Household Income (thous.)	$59,218	$9,564	$53,684	$21,132	$62,518	$14,260
Percent Employed	57.52%	4.39%	56.82%	7.85%	59.32%	8.35%
Percent with No Health Insurance	14.07%	4.26%	15.08%	6.52%	13.55%	8.92%
Percent with No High School Diploma	9.62%	2.32%	10.87%	5.56%	9.09%	4.93%
Percent Rent	24.39%	5.82%	27.31%	11.60%	18.04%	10.75%
Percent SNAP	10.80%	3.10%	12.74%	7.84%	8.18%	6.10%
Percent Vacant	11.91%	4.47%	12.32%	7.20%	11.05%	9.06%
Poverty Rate	9.95%	2.88%	12.10%	7.87%	8.38%	6.77%
Total Debt-related Obligations, 2012	$19,355,225	$35,407,750	$17,757,611	$71,666,062	$145,070	$2,143,794
Total Spending, 2012	$98,099,344	$124,040,478	$14,353,454	$41,859,804	$331,906	$1,783,060

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