Housing Supply Expansion and Local Government Finances in the Indiana Uplands

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1 Summary

New housing development can induce a permanent long-term change in the public finances of a community. This analysis uses the *Local Development Public Finance Model* to consider the effect of a 1 percent increase in residential homestead housing supply on the levies, property tax revenues, and circuit breaker credits from property tax caps on the taxing units in the Uplands region of Indiana. Two scenarios are considered: 1) The taxing units all hold their property tax rates constant by increasing their budget levies; 2) The taxing units all hold their budget levies constant and reduce their property tax rates. Randomly selecting undeveloped residential parcels and developing them to their respective county median valuations is the assumed development strategy. The results demonstrate overwhelmingly positive public finance implications through new property tax revenues and less binding property tax caps.

2 Introduction

An appropriate housing stock complements the best virtues of community life. Attractive and affordable housing is a considerable asset for attracting a committed workforce and the employers who need them, and civic pride follows from those communities where people can live with dignity. Therefore, influence over the housing supply is one of the most powerful tools at the disposal of local government. Given its importance, housing has been identified (https://regionalopportunityinc.org/housing/) as an important piece of realizing the full potential of the Upland region in southern Indiana. Smart evaluation of proposed developments to the housing supply should entail a recognition of the new public service requirements and its contributions to the tax base. This report sheds light on the latter consideration by investigating the potential impact on property tax contributions of new housing developments in the Indiana Uplands, which are the primary source of tax revenue uncertainty for local governments in Indiana.

This report makes use of the *Local Development Public Finance Model* (LDPF), provided through the Center of Rural Engagement at Indiana University (https://rural.indiana.edu), to investigate the concerns over public finance implications of increasing the supply of single-family residential homes in the Indiana Uplands. This includes the consideration of all taxing local governments located in Brown, Crawford, Daviess, Dubois, Greene, Lawrence, Monroe, Orange, Owen, and Washington. Since development represents new property tax base growth in the area from new taxpayers, of primary interest is on the finances of the local governments and its pre-existing taxpayers. While the LDPF model is built for considering specific proposals, to provide general results the study randomly selects from currently undeveloped parcels and changes their hypothetical tax records to be treated as if they were single family residential homesteads valued at their respective county's median taxable value. Two sets of results are provided, one which assumes all the local governments maintain a constant tax rate (thereby increasing their budget size), and another which assumes they all maintain a constant budget size (thus reducing their tax rates).

It is understandable to think that a new dollar of property tax revenues paid by housing that did not previously exist would just represent a dollar that can be used for cutting tax rates or spending on services. However, Indiana's rather unique approach to regulating individual tax bills through the 1-2-3 Property Tax Caps (also known as "Circuit Breakers") makes it more difficult to determine how a particular property contributes to the tax base.[1] Most states restrict the amount of revenue a local government can raise through property taxes, whereas Indiana allows expenditure budgets to determine how much property tax revenue is required then uses the property tax caps to ensure that amount is not realized. Typically, a given property owner's share of a local government's tax levy is determined by their respective share of the net assessed value in the area. If this share, added up across all local governments providing services to the property taxpayer, exceeds their capped amount (1, 2, or 3 percent depending on property classification) then the taxpayer does not owe any excess beyond that cap. The unpaid excess is called a "circuit breaker credit" and represents a loss of revenue to a local government. These circuit breaker credits are distributed as losses to the local governments in proportion to their share of the taxpayer's bill.

Consequently, if a property is developed and becomes a larger share of the property tax base, it lowers the shared burden of taxation and potentially increases property tax revenues. At the same time, however, if this new property does not pay its full share of the property tax bill because of the property tax caps, then it is potentially increasing the losses to be distributed to the local governments through circuit breaker credits.

In the Uplands, the impact of the property tax caps differ considerably across the region and particularly across the individual local governments. **Figure 1** illustrates this by adding together all the circuit breaker credits distributed as losses to local governments and divides it by the sum of the tax levies for each county's Pay 2019 budget.

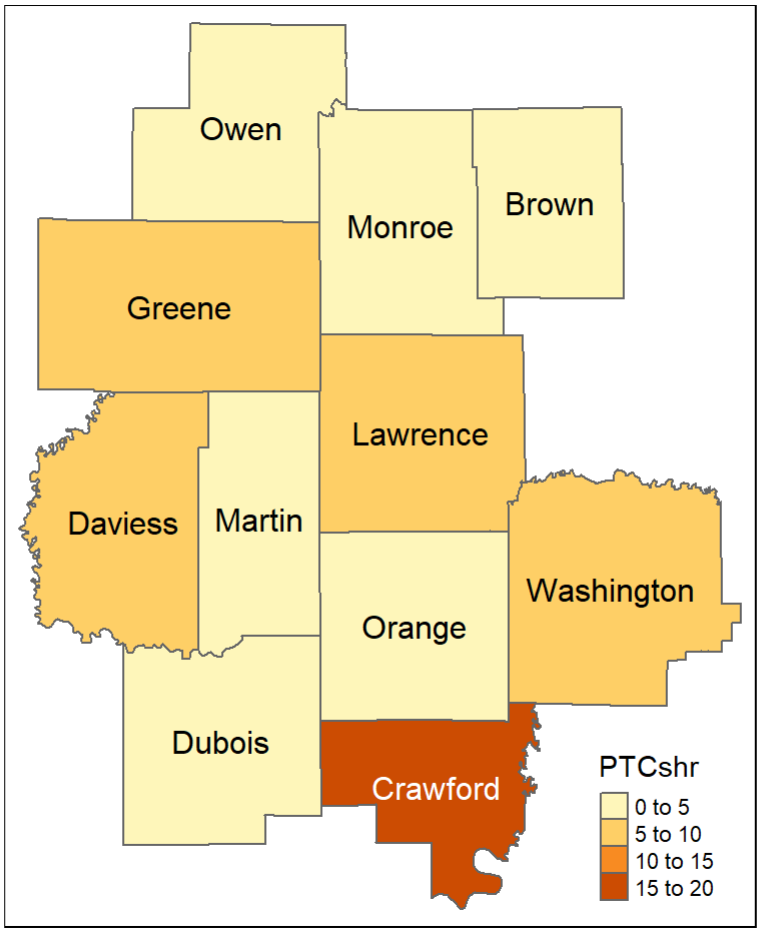

Figure 1: Total 1-2-3 Circuit Breaker Credits as a Share of Total Tax Levies

As the figure shows, local governments collectively lose less than 5% of their combined levies to the property tax caps in Brown, Dubois, Martin, Monroe, Owen, and Orange County, the lowest of which being Brown County at 0%. At the other end, collectively local governments in Crawford County lost 16.6% of their levies to the caps.

The impact of the property tax caps vary considerably across the 245 local taxing units found in the 11 Upland counties. As **Figure 2** reveals, a little over half of those units lose less than 2.5% of their levies through circuit breakers, but 12 experience losses in excess of 20% of their budget levies. The largest share of losses due to the property tax caps from 33.5% in Milltown Civil Town.

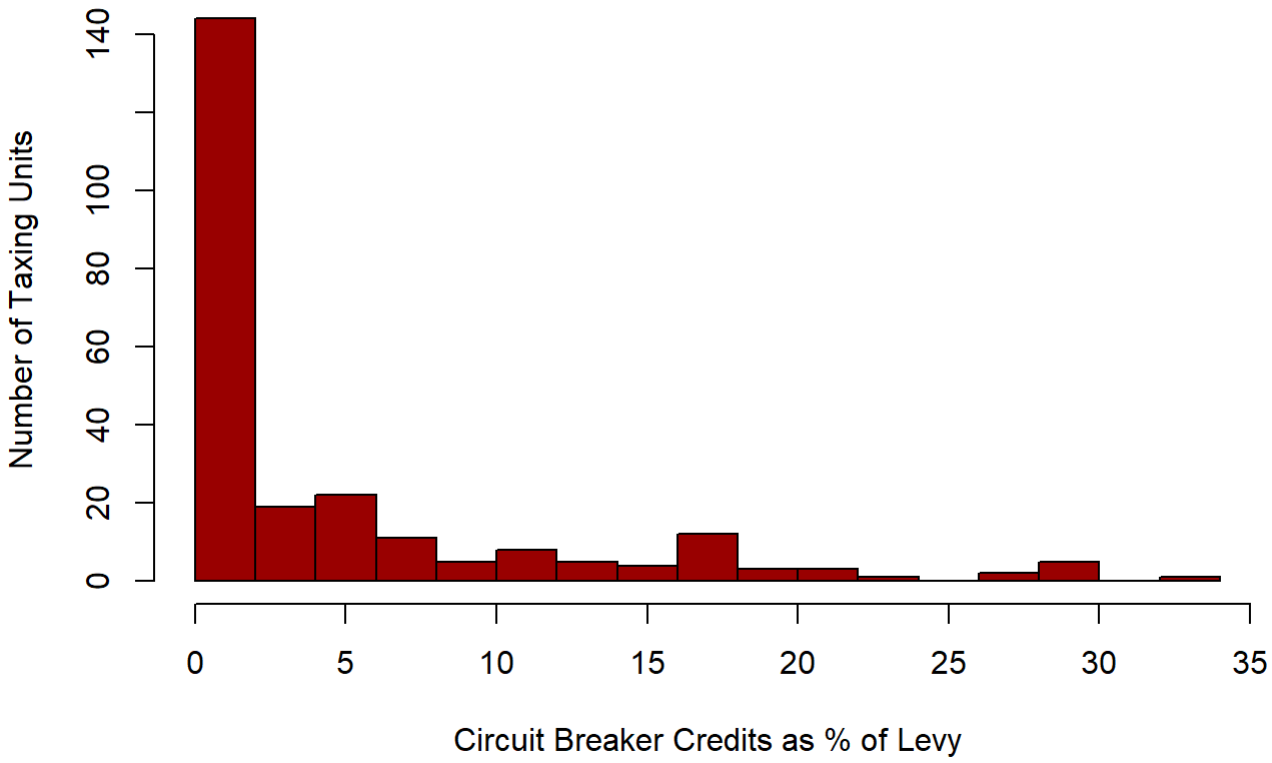

Figure 2: Number of Taxing Units in the UPlands by Property Tax Cap Losses

Previous research has indicated that incorporated areas such as cities and towns tend to have the greatest losses to property tax caps due to a greater number of overlapping taxing units.[2] The below interactive map allows an exploration of these 48 municipal units and their encompassing counties to see their property tax caps as a share of their budget levy by clicking on their area.

Figure 3: Circuit Breaker Credits as % of Levy for Municipal and County Governments (Interactive)

To understand the complications of the property tax caps for the public finances under new development, lets consider some examples. In the above **Figure 3**, Washington in Daviess County loses about 30 percent of its levy to the property tax caps, which means their budget approves expenditures backed by property taxes, and that only about 70 cents of every dollar of property taxes are going to actually arrive to pay those bills. If new properties are developed in Washington that have a high enough market value to cover more than 70% of their tax bill and the various local governments hold their budgets constant, then it is very likely that Washington would gain revenue and lose a smaller fraction of its budget to the property tax caps. By contrast, essentially no taxpayers are at their property tax cap in Brown County. So developing even a single new property in Brown County while maintaining a constant budget would result in revenue reductions to all the various overlapping local governments. Ultimately, the key to escaping the bite of the property tax caps is to produce housing with sufficient taxable value that it can help pay its own way for property tax caps.

In summary, the budget impacts of circuit breakers are very real but unevenly distributed throughout the Upland region. Property value growth is an obvious way to eliminate their influence, and improved housing development offers a prospect for escaping their budgetary impacts while benefiting its citizens through a more proportionate sharing of the cost of government.

3 Methodology for Simulating Development

Development plans reflect the deliberation of stakeholders with purpose, and therefore their impacts can be calibrated to produce desired outcomes. For that reason, it is difficult to make any sweeping claims of how a particular development strategy will affect the public finances of a specific set of communities. In order to make progress towards having a general expectation of expanded residential homestead housing, this paper assumes that each county sees a random selection of undeveloped properties improved to values of their respective median values. A specific proposal can differ from this in countless ways, and the public finance implications may be of more or less import to the motivations of the development. Yet, knowing how the communities would be affected by a random increase in residential properties of average value gives some reasonable starting basis for what to expect before specifics are laid out as well as something to which a specific proposal can be compared. The remainder of this section provides the technical details of this random development proposal before continuing to analyze the results of these proposals.

3.1 Technical Details

The use of the LDPF model requires four files to generate analysis. It requires budget data for the county, a crosswalk file that links taxing unit funds to taxing districts, and taxpayer bill data for both a baseline (pre-development) and after the development (post).

3.1.1 *Defining the Baseline*

For the baseline of the analysis, this report uses the budget and tax bills of Pay 2019.

The tax bill data from each county in the Indiana Uplands was downloaded from the Indiana Gateway (https://gateway.ifionline.org/public/download.aspx) Property Files for 2018 pay 2019.

The Certified Budget, Levy, Certified Net Assessed Value, and Tax Rate by Fund for 2019 was downloaded from the Indiana Department of Local Government Finance (http://in.gov/dlgf/8379.htm) (DLGF). The DLGF also shared the state's unit fund-by-tax district crosswalk file.

3.1.2 *Generating the New Post-Development Tax Bill Data*

The following steps were taken to generate the post-development tax bill data.

1. The number of properties in each county to be "redeveloped" are one percent of the number of individual records of the baseline pre-development tax bill data. For example, a county with 2,000 taxpayers would be assumed to have 20 parcels randomly selected for redevelopment.

2. The individual tax bill data was reduced to only those properties which met the following conditions:

- The parcel belonged to a Tax District (i.e. trusts were excluded).
- The parcel had $0 in Assessed Value Improvements (i.e. no structures or improvements to the land).
- The parcel had $0 in AV eligible for property tax cap classifications 2 or 3 (i.e. exclude mostly farmland, non-homestead residential, and commercial/industrial property).

3. From the remaining parcels after these exclusions, R was used to take random sample without replacement using the `sample` function. The size of the random sample in the county was determined in step 1. The sampling function used a seed of `12345` in order to select the specific properties for redevelopment.[3] The parcels of this list were the ones to be "redeveloped."

4. For each county, a median assessed value was identified by taking the median of the cap 1 land, improvements, and net assessed values from the list of parcels that had positive assessed values eligible for cap 1 properties.

5. The values obtained in step 4 were assigned as the new tax bill information to the properties identified in step 4.

6. The new post-development tax data consisted on the updated parcel records generated in step 5 plus all other parcels not drawn by the random sample in their same condition as in the baseline data.

The following *Table 1* summarizes the number of parcels to be redeveloped and the new gross assessed value they would receive.

Table 1: Features of Redeveloped Properties by County

County	Number of Parcels	New Assessed Value
Brown County	156	$139,800
Crawford County	120	$58,000
Daviess County	273	$101,400
Dubois County	399	$120,200
Greene County	332	$74,300
Lawrence County	357	$89,900
Martin County	132	$81,200
Monroe County	669	$163,900
Orange County	251	$74,300
Owen County	187	$87,900
Washington County	213	$79,300

3.2 Notes about the Randomization and the Selection of Properties

A few key facts about the random selection of properties is helpful to keep in mind when drawing inferences about the results in the next section.

- A different random sample may generate different results. Using a different seed (or no seed at all) will generate alternative results, though the author's experimentation suggests they are qualitatively similar to those presented here using `seed=12345`.
- Taxing units whose tax districts include the redeveloped properties will likely be most affected, but not exclusively so. Through the interactions of overlapping local taxing units, a given taxing unit may have its finances affected without having any redevelopment in its territory.
- While the properties to be developed are selected randomly, they are selected from the existing set of undeveloped properties and will geographically mimic where those properties exist. If these undeveloped properties were all concentrated in one area, then the entire random sample would be drawn from that same area.
- See the technical documentation for the LDPF model for other limitations and qualifications of the analysis. For instance, the model does not factor income taxes paid into the analysis, even though presumably these households would contribute as such.

4 Results: Constant Tax Rate Scenario

This section provides the LDPF model results for the constant property tax rate scenario. In this scenario, the pre-existing property taxpayers would observe no change to their property tax bills because all their respective taxing units would revise their budgets to maintain a constant tax rate. For the same tax rate, the growth in the tax base offers the potential for more government services paid for by the new development. A double benefit occurs if the increased assessed values on the developed properties fall below their property tax caps and reduce circuit breaker credit losses directly. On the other hand, if these newly developed units generate substantive circuit breaker credits, their new larger share of the property tax base could reduce property tax revenues.

The taxing units of the Uplands for this scenario would increase their levies by a collective $2.9 million in order to prevent their respective tax rates from falling. This results in a collective property tax revenue gain of $0.4 million, with the shortfall from the levy coming from new circuit breaker credits due to the property tax caps. Of course, as seen earlier in figures 1-3, the impact of the property tax caps varies considerably, and not necessarily in the areas where the development is occurring. To get a sweeping view of the impact across units **Figure 4** plots gains in property tax revenues against new circuit breaker credits for the region's 245 taxing units, with a blue break-even line plotted through the middle.[4] Bear in mind, however, that the largest percentage changes come from those taxing units that are starting from a very small base.

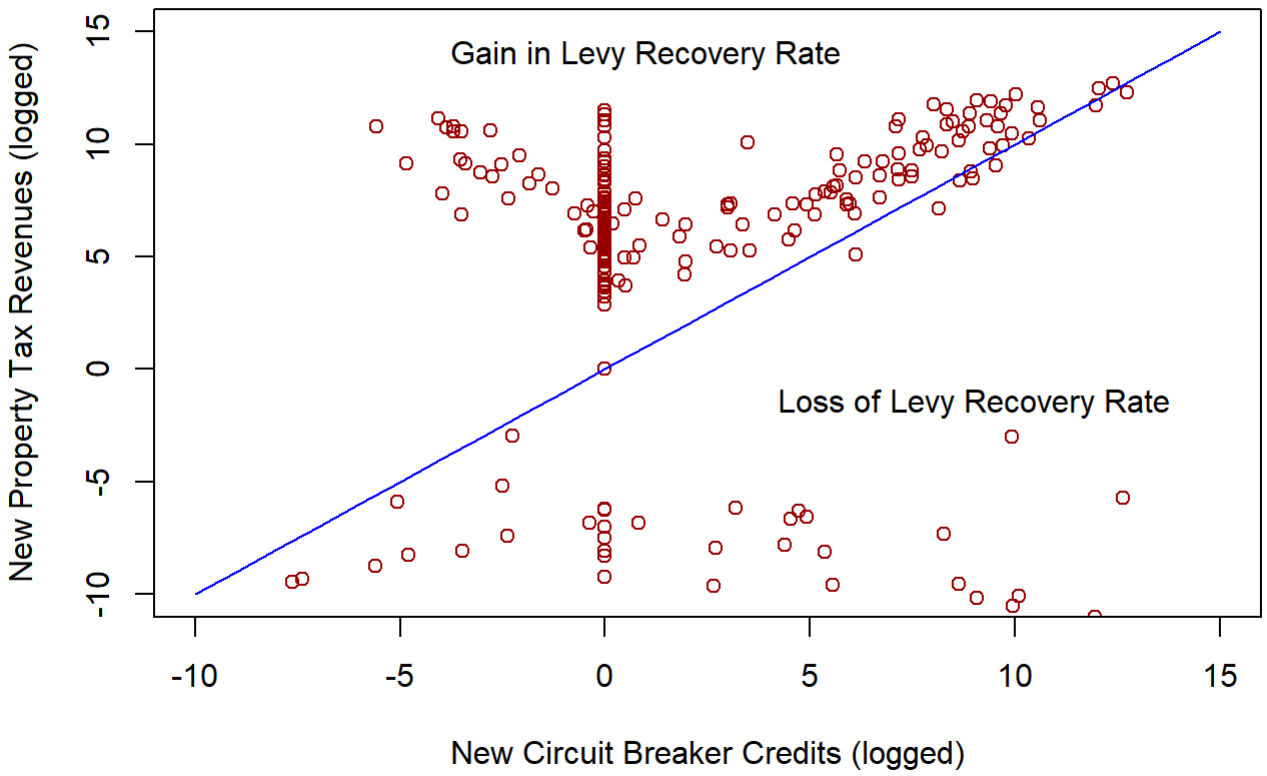

Figure 4: Revenue Analysis for Taxing Units in the Uplands (Constant Tax Rate Scenario)

The most positive budget position in **Figure 4** would be the top left corner, where the unit would see both a gain in property tax revenues as well as a reduction in circuit breaker credits. **Figure 4** shows most (191 of 245) units are at least as high as the blue line, implying that not only do local governments have more revenue to spend on services but that they will be collecting a larger share of their levies through a reduced impact of the property tax caps.

Figure 5 is an interactive map that allows further exploration of property tax revenue growth by county, city, and town governments. The largest gain in property tax revenue growth is in Birdseye at 5.8%, while the most significant loss in percentage terms is Oolitic at -11%.

Figure 5: Percent Change in Property Tax Revenues for Constant Rate Scenario (Interactive)

Because the property tax rates do not change by assumption in these results, there is no difference in property tax bills for those properties that were not part of the development. The next scenario considers the possibility that local governments use the growth in assessed values to instead lower the tax rates of their current citizens.

5 Results: Constant Budget Scenario

This section examines the results for the constant budget scenario from the LDPF model. In this scenario, the taxing units hold constant their budget levies, and use the gains in assessed value growth to lower their property tax rates. The property taxpayers whose properties are not redeveloped and are below the property tax cap will experience a reduced total tax bill with no effect on local government revenues. There is no change in the taxbill for those who are above and remain above the property tax cap threshold with the lower rates, but the taxing units might retain a larger share of their total budget levy as property tax revenue as a result. This is because each dollar of circuit breaker credit generated by a taxpayer is distributed to the governments in their tax district proportionally to their share of the rate. For instance, if half of a taxpayer's district rate is from the city, then half the circuit breaker credits will be attributed to the city. By lowering rates, there is not only a lower amount of circuit breakers to distribute, but the units lowering their rate receive a smaller share. This does have the potential to cause a reduction in property tax revenues for the units whose tax rates do not change, as they may be taking a larger share of a smaller amount of circuit breaker credits. If the newly developed properties generate circuit breakers under the property tax cap, then it is similarly possible that property tax revenues decline. For instance, if there were zero circuit breaker credits in an area until those generated by the newly redeveloped property, then with constant levies every overlapping local government would experience a reduction in property tax revenues.

Figure 6 demonstrates the aggregate amount of property tax revenue received by all taxing units increased by a small amount in 10 of the 11 counties. Orange County, where there were minimal circuit breaker credits before the development, manages to decline in aggregate property tax revenue by -0.12%. The overall average, however, is 0.17% without taxpayers paying higher taxes, with the largest gain in property tax revenue growth coming from Crawford County units at 1.78%, owing to their high level of circuit breaker credits that can be displaced (see *Figure 1*).

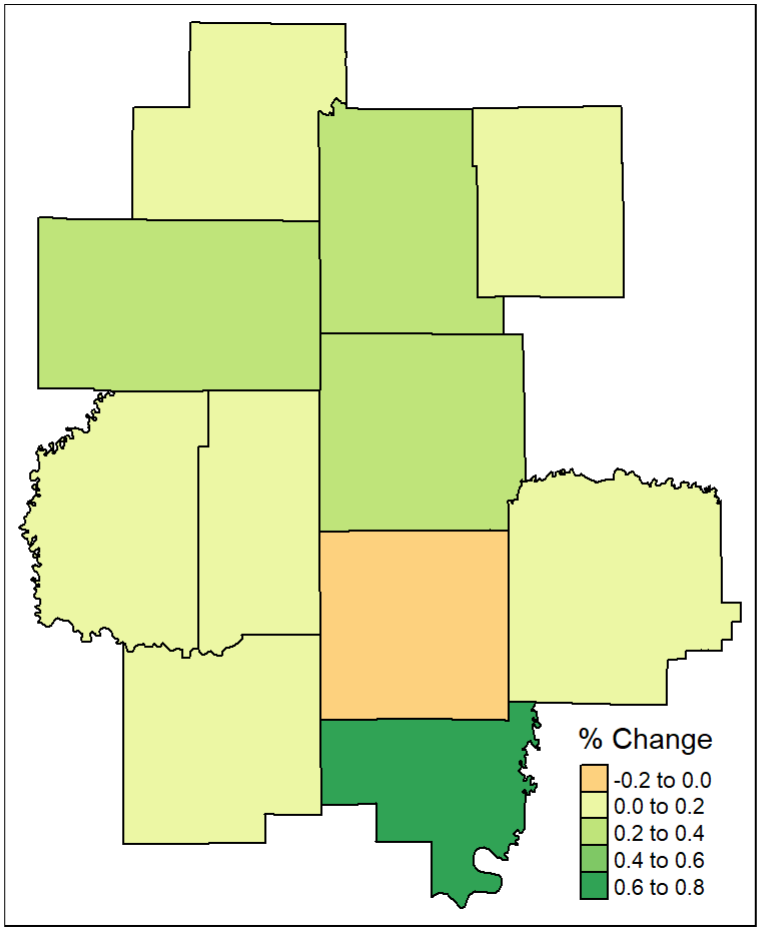

Figure 6: Percent Change in Total Property Tax Revenues under Constant Levy Scenario

Of course, the aggregates of *Figure 6* can mask considerable variability experienced by the individual units themselves, but this is not particularly true in this scenario. The kernal density plot of **Figure 7** shows that most local governments are just marginally positive to positive one percent. Effects larger than that in percentage terms, such as in Crane Civil Town's -6.43% is an artifact of their very small starting budget. The average of the 245 taxing units was a positive 0.13%, with the largest gain in property tax revenue growth in Jasonville Public Library at 1.78%.

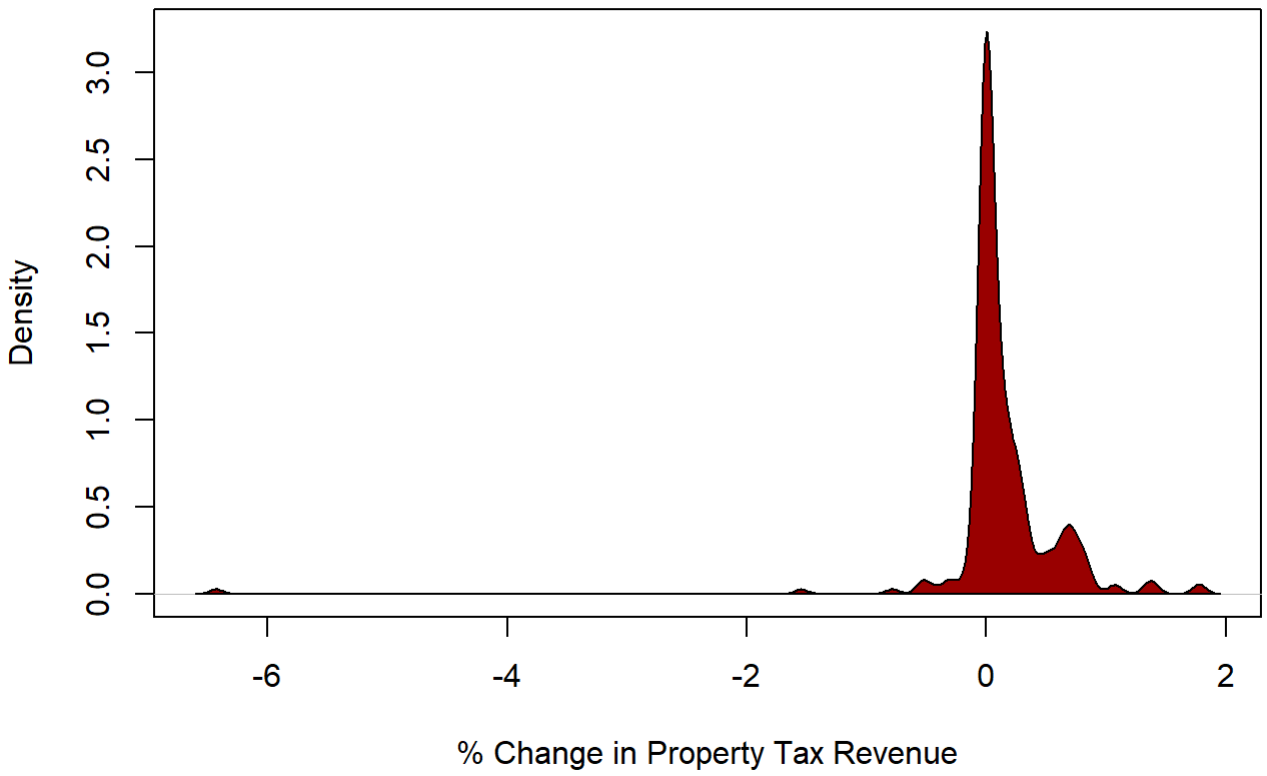

Figure 7: Property Tax Revenue Percent Change Constant Levy

To allow for exploration of the individual unit impacts on general purpose local governments, **Figure 8** provides an interactive map of the property tax revenue growth for the cities, towns, and counties of the Uplands.

Figure 8: Percent Change in Property Tax Revenues for Constant Levy Scenario (Interactive)

6 Summary of Findings

The importance of housing to communities is more than just its public finances, but public finances are often a concern over new housing development. Just how likely is it that housing supply expansion in the Uplands gains? Very likely, according to the results of this study that found a 1% increase in the residential homestead units at county-median value overwhelmingly produced positive property tax revenues and reduced losses to the property tax caps. In the scenario where local governments spend the proceeds from the new developments, their spendable property tax revenue increases by a collective $400,000 per year. In the scenario where local governments use these properties to lower their tax rates, pressure from the property tax caps is relieved and property tax revenues increase by a collective 0.17%.

It is worth nothing that there are two important ways in which this model deliberately underestimates the potential tax revenue impact. First, a deliberate planning approach would undoubtedly be capable of improving upon the results of this study since properties were redeveloped by random selection. Secondly, the model results did not consider tax revenue growth that might occur through additional income taxes paid by new residents or from resulting economic growth in the communities that might be associated with additional housing.

7 About the Author

Justin M. Ross is an associate professor of public economics in Indiana University's Paul H. O'Neill School of Public & Environmental Affairs. His research is featured in outlets like the *National Tax Journal, Journal of Public Economics, Land Economics, Journal of Environmental Economics & Management, Public Finance Review, Southern Economic Journal, Public Budgeting & Finance, Journal of Public Administration Research & Theory, Public Administration Review, State Tax Notes, Contemporary Economic Policy, Journal of Housing Economics, Public Finance & Management and the Journal of Real Estate and Finance Economics*. He has been with Indiana University since completing his doctorate in economics at West Virginia University in 2008.

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1. There are many good references on the unconventional Indiana Property Tax Cap System. Ross, Farrell, and Yang (2015) provide some interstate comparisons and outline the surprising fiscal consequences, economic incentives, and political implications of Indiana’s property tax cap system. DeBoer (2015) provides an excellent set of illustrations and fiscal facts about the property tax caps. Johnson and Ross (2018) provide fiscal history of Indiana’s local government public finance system, and characterize the state’s history as “before and after” the property tax caps. Ross and Cheek (2014) examine the efficiency and equity implications of the property tax caps, and find that the caps reduce revenues most for governments with low income households hardest while serving as tax breaks to mostly commercial and industrial properties in those states.↩
2. See Ross and Cheek (2014).↩
3. Setting a seed is done for the purpose of reproducibility. That is, a user wishing to replicate the analysis of this report can generate the same random sample by defining the same seed value. Leaving the seed undeclared will not identically replicate the random sample.↩
4. **Figure 4** is scaled by the inverse hyperbolic sine transformation to better fit the vastly different impacts onto a single figure.↩