Could Land-Only Taxation Save Local Government in Indiana?[1]

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This paper articulates a case for Indiana to exempt all non-land property from the taxable portion of the property tax base. This moves the state closer to a tax system that has great support among economists for its advantages in encouraging economic growth, progressivity, and reducing environmental damage from urban sprawl. Indiana might particularly benefit from a land only tax because of its unique system of property tax caps. The merits of this approach hinge on driving a wedge between gross assessed value and net taxable value. Future empirical research is needed to determine the distributional impact that would result from such a policy change.

Key Words: Property taxation, Land tax

Indiana employs the property tax in local government finance differently than any other state in the union. While many state and local governments impose limitations on the use of property taxes, Indiana indirectly limits how much property tax revenue will actually arrive with a series of taxpayer-level property tax caps. Since these revenue losses can only be calculated after spending decisions are completed, they represent structural deficits. Also, piecemeal exemptions from the property tax base, like those on business personal property, now have revenue-driven problems from property tax reforms in addition to the long-standing equity concerns.

This essay suggests that a potential improvement to the current Indiana system might be found in the very old idea of land-only taxation, or at least an imperfect version of it. While the land tax is seldom employed worldwide, its advantages have long been well understood and advocated by public finance experts. In fact, many tax economists regard the property tax to be a two-faced bundle of the "worst tax" and the "best tax" (Fisher, 1996). Intangible and tangible personal property, as well as land improvements, represent the worst side of the tax; taxation upon land only, however, is thought to represent the best. An ideally-structured tax on land is progressive, economically efficient, and friendly to both economic development and the environment.

A land-only tax may offer unique advantages under the existing Indiana property tax system that caps the tax bill as a percentage of market value. The creation of an exemption on all components except the land portion of property would generate a wedge between the "net" value used in calculating tax bills from the "gross" value that is used in calculating the taxpayer's maximum possible bill. The incentive to invest in property development would likely be no worse than current policy for taxpayers who are at the cap, but would be more attractive for taxpayers who are not. The equity implications are unclear until empirical analysis could review

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this issue, but the potential for incentivizing private investment that would represent a long-run solution to local government revenue shortages is clear.

The next section of this paper will review the general arguments for a land tax and what the current understanding is about the validity of land tax theory. Section 3 briefly overviews the history of the property tax caps in Indiana and explains their workings. Section 4 specifies a proposed land-only tax system and illustrates how it would impact the property tax calculations for government and taxpayers. The conclusion summarizes the arguments and provides direction for empirical work needed to analyze the actual impacts of the policy.

Land Tax Theory and Research

Overview of General Theory. Henry George's *Progress and Poverty* (1879) is widely regarded as the most seminal treatment of a land tax policy. George advocated a single tax on land values to finance all public services (p. 418): "The tax on land values is, therefore, the most just and equal of all taxes. It falls only upon those who receive from society a peculiar and valuable benefit, and upon them in proportion to the benefit they receive. It is the taking by the community, for the use of the community, of that value which is the creation of the community."

In its ideal form, the idea of a Georgist land tax (i.e. land value tax) is derived from the proposition that the present value of the potential profits of owning a piece of land is equal to the acquisition price in a competitive auction (i.e. the market price). Thus, the value of land is driven by its most profitable form of use, regardless of how it is actually used. The land value tax would similarly be based upon the best possible use rather than actual use. Taxing these land rents in this manner has a number of desirable features relative to other means of taxation. George was particularly fond of the idea that such a tax would discourage "land speculation" in the form of investors buying and holding property undeveloped and idle until it appreciated to a more lucrative price. A tax on possible land rents would incentivize more immediate development into its most valued form in order to cover the payments.

Economists find the model agreeable in that the land tax can potentially have significant efficiency and neutrality advantages. By taxing maximum use value, the choice of what to produce and how to produce on the land is not distorted by the tax. The impact of the tax is purely on land price and therefore the incidence of the tax is upon land owners. In addition to being economically efficient, presumably more valuable land will be held by wealthier taxpayers, causing the incidence of the tax to be progressive.

Finally, most existing property tax systems levy on the basis of both land and capital. Switching to a land tax would incentivize developers to build "vertically" rather than "horizontally" to economize on land consumption. The more conservative use of land is thought to represent a more environmentally friendly alternative to current-use property taxation.

Current State of Research. The general theory of land taxation has been further developed in the economics literature to consider how robust the theory is to underlying assumptions of markets and market participants. Most prominently, Feldstein (1977) challenged the tax neutrality conclusion by extending the analysis to include income effects. Namely, if the land tax reduces wealth, then some part of the tax burden would shift onto other assets that can no longer be acquired. Secondly, Feldstein pointed out that differences in asset risk can have the consequence of portfolio repositioning in response to the tax, particularly since land prices are more volatile than most other tradable assets. Many scholars (e.g., Fane, 1984; Eaton, 1988; Petrucci, 2005) have built upon Feldstein's important extension on wealth induced effects but arrived at the

original conclusion of tax neutrality. For example, Coulson and Li (2008) examined the relationship between land price volatility and risk tolerance to measure the neutrality of the tax. Through a simulation of the risk impacts of the tax on owner occupied households in New York City, the authors found that the amount of risk aversion is slight, and concluded that the land tax is quite neutral.

Much of the literature has advanced by studying the consequences of property tax (land plus its capital improvements) induced distortions, especially the phenomenon known as "urban sprawl." Urban economic theory identifies many forces that direct the spatial expansion of cities (e.g. expansion of population, an increase in household income, investment in transportation infrastructure, etc.) and the property tax is widely believed to be among the contributors. As Brueckner and Kim (2003) note: ". . . in the case of residential structures, a lower level of improvements per acre means that developers construct shorter buildings, containing less housing floor space per acre of land. If the size of dwellings within each building were to remain constant, then a shorter building height implies a decline in population density, with fewer households fitting on each acre of land. But if the city must accommodate a fixed population, lower densities mean that it must take up more space. Thus, by reducing the intensity of land development, the property tax would appear to encourage urban sprawl . . . the distortions generated by the property tax may include excessive spatial expansion of cities."

Some evidence of property_tax-induced-urban sprawl has come from studies of Pennsylvania. Pennsylvania allows for the use of split-rate taxation among local governments, which taxes structures at different rates than land. Land tax theory suggests that taxing capital at a lower rate than land should curb measures of sprawl. Most recently, Banzhaf and Lavery (2010) tested the impact of the split-rate tax across 18 Pennsylvania jurisdictions from 1970 to 2000. Their results indicate that the split-rate tax results in more efficient growth patterns: the lower the structure rate relative to land increased the capital/land ratio, and was positively associated with more housing units rather than bigger units consistent with the curbing of sprawl. These findings are consistent with older studies of Pittsburgh implementing the split-rate tax for the consequences on building activity (Oates and Schwab, 1997) and the number of issued permits (Plassmann and Tideman, 2000).

Studies of New Zealand, which offer similar cases to those found in Pennsylvania, have examined the distributional consequences of land versus property taxation. New Zealand local governments offer variations in the mixture of land taxes, capital value taxes, annual rental value taxes, and a uniform general charge. Kerr, Aitken, and Grimes (2004) found that the New Zealand land tax is more likely to be progressive than is the capital value tax. Also, they indicate that land tax can "offset the effect of exempting capital gains on residential properties and the flow of services from owner occupied homes from taxation."

Compared to most other tax instruments, empirical evidence on land taxation is relatively sparse, partly because it is not very commonly employed. Nevertheless, the theory is robust to complex assumptions, and what empirical evidence does exist is supportive of the theoretical propositions.

The Indiana Property Tax Cap System

Background and History of Property Tax Caps. Indiana has a long history of property tax limit legislation that dates back to the 1930s (Bennett and Stullich, 1992). In the 1970's and 80's, the state adopted and refined a number of limits aimed at the growth of property tax levies that support the different funds controlled by local governments. The property tax caps were phased

into policy in 2009 and 2010, and their origins are widely recognized as a consequence of major reforms in property assessment that created a political demand for taxpayer protections from large changes in property taxes. In brief, the 1998 Indiana Supreme Court determined that the previous assessment system based on the replacement cost of property was unconstitutional, and was to be replaced with a system that more appropriately reflected market value.

The multi-year process of implementing a new assessment system resulted in significant changes in the property tax bills for many taxpayers. The Indiana General Assembly passed the property tax caps in 2008, seemingly in response to homeowners' anger at abruptly changing property tax bills. The property tax caps limit property taxes to a maximum of 1 percent of the assessed value on homesteads, 2 percent of the assessed value on rental properties such as apartments, agricultural land, and long-term care facilities, and 3 percent of the assessed value on business properties. The current Indiana property tax caps were fully implemented in 2010 after partial implementation in 2009. In 2010, Indiana voters approved of amending the state constitution to include the new property tax caps with 72 percent of the vote.

The passing of the property tax caps were bundled with other changes in the division of fiscal responsibilities between states and local governments. This was motivated by the fact that the property tax caps, as will be explained in the next section, result in savings to taxpayers but revenue losses to governments. Perhaps the most significant change was that the operating budgets of schools would be funded by state general funds rather than local property taxes. [4] To finance this new state charge, the lawmakers raised the state sales tax from 6% to 7%. Despite these restructurings, as Figure 1 demonstrates, there have been significant revenue losses in some areas of the state.[5]

The Mechanics of the Property Tax Caps. Unlike the tax rate limits of other states, Indiana's tax caps allow all local property taxing units to change their tax rates independently. A binding property tax cap results in "circuit breaker credits" that are savings for the individual taxpayer, and a loss of revenue to every property taxing unit of government. This can be problematic for planning because Indiana property taxing units are overlapping, and the revenue losses of taxing units depend partially on the aggregate tax rate of all units. Additionally, when these caps are binding, this creates an incentive for each taxing unit to cannibalize revenues from one another by raising their own tax rate.

In Indiana, each local government submits its budget to the Department of Local Government Finance for fund-level levy approval. After approval, net assessed values (NAV) are combined with this levy information to produce a property tax millage rate (τ) that represents the sum of all local government tax rates serving the property.

It is important to note that the tax rate calculated on the basis of net assessed value (NAV), is a property's taxable value which is found by subtracting various applicable deductions from the gross assessed value (GAV).

$$NAV = GAV - (\text{deductibles and exemptions})$$

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[4] Capital funds and special voter referendums continue to result in property tax reliance by the schools.
[5] The property tax caps are arguably the key difference between the state efforts in the 2000's to remove business inventory and the 2013-2014 effort to eliminate the business personal property tax. Both policies represented a shift in the tax burden, but the property tax caps added to the challenge of eliminating the business property tax because it also represented revenue losses to local governments.

Figure 1: 2012 Local Government Revenue Losses to Property Taxes as Percent of Levy, Aggregated by County
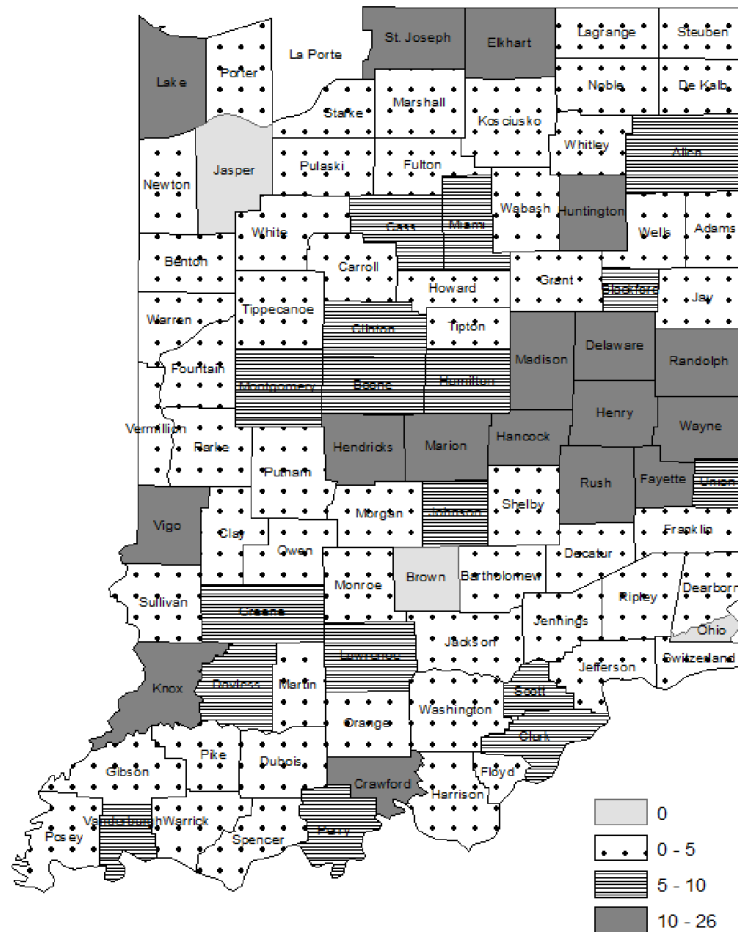
Source: Data provided by Indiana Department of Local Government Finance (2012). Data missing for LaPorte County.

Separately, a maximum tax bill (MAX) is determined as a percentage of gross assessed value. [6] Letting X = 1 for homestead, 2 for non-homestead residential, and 3 for all other property,

$$MAX = X\% \times GAV.$$

Finally, the net tax bill for a property is the smaller of the GPTB and the MAX.

$$Net\ Tax\ Bill = Min\ \{GPTB,\ MAX\}$$

If the property's gross tax bill exceeds the maximum tax bill, the owner of the property is said to receive a "circuit breaker credit" (CB) in the amount of the difference.

$$CB = GPTB - MAX \quad if\ GPTB > MAX;\ else\ zero.$$

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[6] This is simplification of how the MAX is determined. In actuality, some properties have a mix of property classifications, and consequently the maximum is weighted by the property's share in each tax cap class.

Table 1. Hypothetical Distribution of Revenues and Circuit Breakers

Taxing Unit	Millage	Gross Tax Bill	Net Tax Bill	Circuit Breakers
City	$3	$2,550	$1200	$1,350
County	$2	$1,700	$800	$900
Total	$5	$4,250	$2,000	$2,250

Table 1 and 2 is used to illustrate how the circuit breaker works across local government taxing units. Suppose, for instance, a single property is subject to two taxing units, city and county government. Assume the property is a homestead with GAV of $200,000, and after all deductions, the NAV is $85,000. The maximum property tax bill would be 1% of the GAV, or $2,000. If the millage rates per $100 of NAV of these units were $3 for city and $2 for county, the GPTB would be $5×$85,000 = $4,250. This GPTB exceeds the maximum bill, so the property owner pays $2,000 and "receives a circuit breaker credit" for the $2,250 difference. The $2,000 paid is distributed as revenue to the two units in proportion to their millage rate (60% to the city and 40% to the county). These figures are displayed in Table 1.

Suppose the county government were to increase it's millage rate by $1 while the city's remains unchanged. The total millage rate increases by $1 to $6, and consequently results in a GPTB of $5,100. The maximum bill remains at (1% of GAV) $2,000, so there is no change in the taxpayer payment. However, the distribution of the $2,000 among the two governments does change as the city and county each receives one-half ($1,000). As Table 2 demonstrates under the net tax bill column, this represents a revenue gain of $200 for the county that was lost by the city.

This hypothetical demonstration shows the degree of complexity the property tax caps have added to the local budgeting process in Indiana. Whereas other states might limit the amount of revenue drawn from the property tax, Indiana uses the adopted budgets to determine the amount of spending to be backed by property tax. As a result, these circuit breakers are revenue losses determined ex-post to the budgeting process for the taxing units so that they represent structural deficits. By allowing all local governments to adjust their property tax rates independently while also using them to jointly determine the circuit breakers, the amount of revenue losses from these caps can be very difficult to predict. For example, Ross and Dinges (2014) demonstrated that if the city of Gary in 2012 were to raise their levy by $1.67 million,

Table 2. Hypothetical Distribution of Revenues and Circuit Breakers When County Increase Millage by $1

Taxing Unit	Millage	Gross Tax Bill	Net Tax Bill	Circuit Breakers
City	$3	$2,550	$1,000	$1,550
		[0]	[-200]	[+200]
County	$3	$2,550	$1,000	$1,550
		[+850]	[+200]	[+650]
Total	$6	$5,100	$2,000	$3,100
		[+850]	[0]	[+850]

80% of that increase would be lost to the property tax caps despite the fact that, at current property tax rates, they were losing only 52% of their property tax levy to the caps.

In addition, the implementation of the tax caps presents some clear incentives for local governments to raise tax rates. For a taxpayer at their maximum tax bill, an increase in the rate from a single local government has no effect on their net tax bill, but instead, redistributes the division of the net bill among local governments to the units which raise their rates. The more local governments raise their rates, the greater the incentive for the other local governments to respond with simultaneous rate increases to protect their share of revenues.

Short of eliminating the property tax caps, the only permanent solution to these problems is going to come from economic growth. Therefore, it is unfortunate that property tax caps encourage rate increases, as this is a counterincentive to investment in property development.

Previous Research on Property Tax Cap Impacts. Faulk (2013) calculated the impact of the circuit breakers on government finance in the policy's inaugural three years. Faulk finds the circuit breakers generally had more impact on counties in metropolitan areas than rural counties in the state where population growth spurred demand for public services. On the other hand, in 2012 the circuit breakers reduced property tax revenue in urban counties where the manufacturing sector had been in decline. Delaware County, one of the counties most affected by the caps, experienced a 36 percent decrease in property tax revenue in 2012 from the previous year. The largest cities in the state, and their overlapping school districts, were also among the most affected by circuit breakers as measured by revenue losses. The author also found that owners of business properties were the most significant beneficiaries of the tax savings from the property tax caps.

A potential virtue of the property tax caps identified by its supporters is the potential for economic growth via reduced property tax caps. While this will ultimately be an empirical question of future research, some early evidence of the theoretical potential has been produced by Thaiprasert, Faulk, and Hicks (2013) using a computable general equilibrium (CGE) model. This model sought to produce an estimate of the aggregate economic and fiscal impact of the local property tax reductions that accompanied the increase in the state's sales tax rate. This model applies predicted relationships between economic activities and the tax code, which is then applied to real data to produce what represents the best timely evidence on the topic.

The CGE model developed by Thaiprasert, Faulk, and Hicks (2013) found the short-run impact on aggregate economic indicators was relatively small even if it contained large effects on individual households. Specifically, the caps were estimated to produce a small, positive effect on household income that would grow over the long run. The model also indicated that higher income households would benefit from the tax caps more than lower income households as the increase in terms of the total dollars of income. If the savings was expressed as a percentage of their labor income, lower income households enjoyed a greater share than did the higher. The property tax payment effects were similar across the income groups. The increased sales tax rate was regressive in terms of the tax's distributional burden on labor income share.

Ultimately, the combined policy changes were estimated to produce a decrease in short-run revenue for both state and local governments, but would produce a long-run revenue increase because of the long-run positive impacts on the Indiana economy.

An Indiana Land-Only Tax

To speculate on how an Indiana Land-Only Tax (ILOT) would operate, we must make some assumptions about policy design. It is assumed here that Indiana retains most of the current property tax system by passing an exemption that applies to any tangible personal property or structure that represents an improvement upon land. We will assume that it is in-lieu of other exemptions, such the homestead or supplemental homestead. We also do not assume any change in assessment practices, so Indiana assessors continue to produce valuations of non-land property that are separate from their estimates of land value. [7]

As already explained in Section III, net assessed values (NAV) are used for calculating tax rates for local governments and tax bills for individual taxpayers; gross assessed value (GAV) is for determining a property's maximum tax bill allowable under the tax caps. Homeowners, for example, have many exemptions that separate gross assessed value from net assessed value (e.g. Homestead, supplemental homestead, mortgage). The ILOT would be initiated with a tax exemption equal to the value of any non-land property, which would simultaneously increase tax rates by lowering the taxable portion of property. For any given owner, the effect on their tax bill would depend on the ratio of land-to-improved value relative to all other property taxpayers in the same tax district.

In principle, any development or improvement to land would have no effect on the net assessed (taxable) value. Said development would, however, increase the gross assessed value that is used for determining the maximum allowable property tax bill. In transitioning from the current system to the ILOT system, the property tax caps would protect individual taxpayers from large changes in their tax bills. In the longer term, eliminating non-land property taxation lifts a barrier to economic development and property values grow local governments out of the property tax caps.

To make clear how the policy impacts taxpayers and local government, some illustrations are provided:

1. A simple demonstration of how the proposed exemption would work in a case where a government had only one residential taxpayer.
2. A simple extension of the first illustration using two taxpayers (one residential and one commercial).
3. A demonstration of the effects of the policy on a single industrial property over time.

Illustration 1. For simplicity, imagine a single local government with only one residential homestead property taxpayer. The "Current Policy Column" of Table 3 demonstrates a gross assessed value of $200,000 and assumes the taxpayer takes the standard, homestead, and homestead supplemental exemptions in order to arrive at the net assessed value of $85,000. In order to finance a $5,000 property tax levy, a property tax rate of 5.88% is required. The resulting tax bill is in excess of the maximum allowable under the property tax caps. Hence, the local government collects only 1% of the gross AV ($2,000), which is less than 5.88% of the net

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[7] This is arguably the most significant difference that the ILOT would carry from the idealized Georgist land tax that has been advanced in the economic literature. Presently, there is no reason for assessors to accurately separate land values from non-land values in calculating the total gross AV. Extensive resources for training and policy development on land value taxation have already been developed by third parties, including the Lincoln Institute for Land Policy. In any case, Chapman, Johnston, and Tyrrell (2009) have suggested that land value taxation would have "at most the distortion effects of a property tax, even with the worst possible land value assessment errors."

Table 3. Illustrated Fiscal Analysis of Exempting All Development

	Current Policy	Land Tax Policy
Taxpayer Property Info		
Land	$40,000	$40,000
Improvements	$160,000	$160,000
Gross AV	$200,000	$200,000
Exemptions	$115,000	$160,000
Net AV	$85,000	$40,000
Taxpayer Property Tax Bill		
Gross Property Tax Bill	$5,000.00	$5,000.00
Max Tax Bill	$2,000	$2,000
Circuit Breaker Credits	$3,000	$3,000
Net Tax Bill	$2,000	$2,000
Local Government Finance		
Property Tax Levy	$5,000	$5,000
Total Net AV	$85,000	$40,000
Rate	5.88%	12.50%
Circuit Breaker Losses	$3,000	$3,000
Property Tax Revenue	$2,000	$2,000

AV ($5,000), with the $3,000 in circuit breakers serving as the difference. Again, this $3,000 is a tax saving to the taxpayer and a revenue loss to the local government.

The "Land Tax Policy" of Table 3 demonstrates the effects of the proposed policy changes under these assumptions. Exempting all land improvements reduces the net AV to $40,000 which automatically causes the tax rate to increase from 5.88% to 12.5%. The maximum allowable tax bill is unchanged because that is 1% of the gross AV. Likewise, there is no effect on net tax bill or circuit breakers. This will be true for any taxpayer whose tax bill is in excess of the tax bill. There is no impact from the policy change. For the local government, there is also no effect of the policy on revenues, and this effect would generalize in a case where all taxpayers are identical. With this simple illustration of how the proposal is designed, we now consider a slightly more complex example.

Illustration 2. Consider another example in which a single local government has only two types of taxpayers – the residential homestead identified in the previous illustration, plus the commercial type, with $0 in exemptions whose land and improvements are worth 10 times that of residential. Assume that the local government is financing an $80,000 property tax levy, resulting in a rate of 3.84% under current policy. Table 4 provides these assumptions and calculates the key variables for each property under the two policy regimes.

Once again, the exemptions have increased for both taxpayers so the shrinking net AV has caused the tax rate to increase from 3.84% to 18.18% without fiscal implications for local governments or taxpayers. The move to the land tax causes no change in the property tax

Table 4. Illustrated Fiscal Analysis of Exempting All Development

	Current Policy		Land Tax Policy	
	Residential	**Commercial**	**Residential**	**Commercial**
Taxpayer Property Info				
Land	$40,000	$400,000	$40,000	$400,000
Improvements	$160,000	$1,600,000	$160,000	$1,600,000
Gross AV	$200,000	$2,000,000	$200,000	$2,000,000
Exemptions	$115,000	$0	$160,000	$1,600,000
Net AV	$85,000	$2,000,000	$40,000	$400,000
Taxpayer Property Tax Bill				
Gross Property Tax Bill	$3,261.39	$76,738.61	$7,272.73	$72,727
Max Tax Bill	$2,000	$60,000	$2,000	$60,000
Circuit Breaker Credits	$1,261	$16,739	$5,273	$12,727
Net Tax Bill	$2,000	$60,000	$2,000	$60,000
Local Government Finance				
Property Tax Levy	$80,000		$80,000	
Total Net AV	$2,085,000		$440,000	
Rate	3.84%		18.18%	
Circuit Breaker Losses	$18,000		$18,000	
Property Tax Revenue	$62,000		$62,000	

revenue, individual net property tax bills, or circuit breakers. The distribution of the gross property tax bill does change in favor of the commercial property because of the preexisting homestead exemptions resulted in a larger percent change in net AV for the commercial property. If these two taxpayers were not bound by the tax cap, there would be a more significant change in the distribution of the net tax bills. How significant of a change would be realized in reality is a question requiring analysis of all relevant data in the state?

These first two examples are simply meant to demonstrate how circuit breaker calculations and property tax bills would be calculated under the proposed and current policy. Estimations using actual state-wide taxpayer data would be extremely useful in considering the effects of the policy.

Illustration 3. The concluding example demonstrates the dynamic incentives created under the land policy. The following illustration is an industrial establishment with $50,000 in land and $500,000 in improvements, both under current policy and under the proposed land tax policy. For the purpose of the illustration the new higher tax rate (44%) will be ten times what would occur under current policy (4%), matching the improvement-to-land ratio so that "Year 1" will be the same under both policies in the tax bill and circuit breaker calculations. Deviations occur over time because it is naively assumed that land improvements grow at 15% per annum.

Table 5. Industrial Development with 15% Annual Investment in Land Improvements

	Current Policy			
	Year 1	**Year 2**	**Year 3**	**Year 4**
Land	$50,000	$50,000	$50,000	$50,000
Improvements	$500,000	$575,000	$661,250	$760,438
Gross AV	$550,000	$625,000	$711,250	$810,438
Exemptions	$0	$0	$0	$0
Net AV	$550,000	$625,000	$711,250	$810,438
Max Tax Bill	$16,500	$18,750	$21,338	$24,313
Gross Property Tax Bill (4%)	$22,000	$25,000	$28,450	$32,418
Circuit Breakers	$5,500	$6,250	$7,113	$8,104

	Land Tax Policy			
	Year 1	**Year 2**	**Year 3**	**Year 4**
Land	$50,000	$50,000	$50,000	$50,000
Improvements	$500,000	$575,000	$661,250	$760,438
Gross AV	$550,000	$625,000	$711,250	$810,438
Exemptions	$500,000	$575,000	$661,250	$760,438
Net AV	$50,000	$50,000	$50,000	$50,000
Max Tax Bill	$16,500	$18,750	$21,338	$24,313
Gross Property Tax Bill (44%)	$22,000	$22,000	$22,000	$22,000
Circuit Breakers	$5,500	$3,250	$663	$0

Under current policy, investments cause gross AV to increase the maximum tax bill and the circuit breaker losses to the government. In other words, the percent of levy collected on this taxpayer is only 25% in all years, and the growing tax bill serves as a disincentive to invest, and therefore discourages growth in the economy. If this property were the only source of growth in assessed values, the current policy also results in steadily increasing revenue losses to the local government.

Under the land tax policy, the 15% investment has no effect on the calculated tax bill, but does increase the maximum allowable tax bill. In years 1-3, the land tax policy is no worse of a disincentive for the owner to invest than current policy, but after year 4, there is no tax disincentive for investing in land improvements. Although it is not assumed in this illustration, presumably the rate of investment would grow faster than the 15% imposed by assumption. Simultaneously, the local government is collecting a larger percentage of its levy, eliminating circuit breakers altogether by year 4. The contrast here in Table 5 between the two examples also help to highlight the usefulness of growing gross assessed value at a rate faster than net assessed value. In the first case where net grew because of gross investment, circuit breakers actually increased when holding the tax rate constant.[8] This also reveals a practical limitation that would arise if assessors simply revised land values on the basis of gross assessment, undermining the effect by mimicking the growth in net assessed value.[9]

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[8] In practice of course, the growth could help lower rates that bring them back under the cap.
[9] We thank an anonymous referee for pointing this out.

Conclusions and Further Discussion

Indiana's system of property tax caps has generated several areas of concern. First, when caps are effective, they have the consequence of generating systematic deficits in the local budgeting process. The ultimate solution to this problem is for economic development to grow the value of Indiana property to such an extent that the caps are no longer binding. A second concern is that the property tax caps encourage taxing units to raise tax rates to protect their revenue shares, which consequently discourages capital investment. Unfortunately, because the property taxes create revenue shortfalls from expenditures, the piecemeal reforms Indiana has historically taken to reduce capital burden in the property tax base now faces the added challenge of fiscal stress to local governments.

A much broader set of exemptions may provide a better opportunity to improve the property tax base and incentivize property investment which is needed to ultimately grow property values to the point where the caps no longer cause fiscal distress to local governments. The specific proposal here is to exempt all non-land property. Structured correctly, exempting all non-land property could be more equitable and efficient than continuing the piecemeal property exemptions of the past. Such an exemption would create a larger wedge between net and gross assessed values where net assessed values would no longer increase with capital improvements to property, and hence, there would be no associated tax increase that would discourage economic investment. Investment would, however, increase the gross assessed values used to calculate the property tax caps.

It is also worth noting that such a proposal would move Indiana closer in the direction of a land tax system, which economists generally regard as "the best tax." The popularity of this tax is partially driven by the economic growth advantages a land tax has over the traditional general property tax, as the choice to develop is undistorted by a tax on land. The ability to develop, however, is capitalized into the market value of land, so land owners have an incentive to develop land into its most valuable form. This makes the tax pro economic growth and progressive in tax incidence. Last, a land tax incentivizes development to use land more conservatively, "building-up" rather than "building-out." This reduces the progression of urban sprawl, which makes a land tax a more environmentally friendly tax than the property tax.

Further study of Indiana data is required to more fully assess the potential impacts on taxpayers and local governments. Specifically, a distributional analysis of classes of property and property uses is needed to assess how the land-only property tax proposal would affect local government revenue losses due to property tax caps in the short-run. This would also be necessary to see which groups of taxpayers might gain or lose from changes to their tax bills under the policy. There are other complementary choices to the exemption, such as whether or not this exemption would replace other existing exemptions. Furthermore, there could be potential improvements made in the practice of land value assessment, which would be another optional policy change to simultaneously implement. How political considerations in responses to any of these changes would affect the analysis is also an open question.

Finally, although there is substantive potential in a land-only tax, ours is more a recommendation for long-term alleviation and does not address other immediate concerns of operating local government under the existing system of property tax caps. First, as discussed earlier, the loss of government revenue to the property tax caps is determined after the budgeting process is completed and therefore represent structural deficits. The purpose of a budget is to make determinations such as "should the last dollar of spending be on fire or criminal justice." Under the property tax caps, the funds within every governments' budget is

reduced in proportion to its supporting tax rate as a share of all property tax-supported funds across every government, which effectively undermines the original budget deliberations. Prior to the completion of the budget process, the amount of lost revenue to each fund is difficult to predict because of this interdependence. The most visible aspects of the local budgeting processes were developed in an era where property tax revenues were nearly 100% of expected collections, but the property tax caps require a much greater reliance on less formal rebudgeting after the circuit breaker credits are calculated. Rethinking the local budget process, and perhaps creating a data infrastructure at the DLGF that would allow for quick feedback on circuit breaker consequences of budget choices represent directions that may better facilitate improved financial management and budget planning.

The second problem for which the land-only tax provides no immediate relief is the strategic incentive for overlapping local governments to protect revenue shares by raising rates. This will continue to be the case so long as the property tax caps are binding. Timely feedback on circuit breaker consequences of budget choices could be another source of improvement, as it could help local policy makers identify the most pertinent areas where collaboration between units could aid in reducing circuit breaker losses. The central concern will likely be to find a means of determining the degree of autonomy local governments should have under a system in which they are pitted against one another for a common tax base.

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