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ASSESSING THE IMPACT OF LOCAL INCENTIVES ON CAPITAL COST: THE CASE OF THE INDIANA ERA PROGRAM

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Public policy makers and administrators around the world recurrently face the question of whether to grant tax privileges to businesses in order to promote investment, jobs, or economic development in general. This article analyzes a very popular form of local incentive, the property tax abatement, and its ability to reduce capital cost. The research question is: By how much do property tax abatements reduce the capital cost of business and homes? Results show that abatements can account for quite a large range of possible percentage reductions in the price of investment for firms. The findings provide public administrators and policy makers with data and a tool to assess the benefits that firms derive from abatements. This in turn can contribute to more informed abatement decisions and to an overall assessment concerning the suitability of this tool to promote economic development.

Public policy makers and administrators around the world recurrently face the question of whether to grant tax privileges to businesses in order to promote investment, jobs, or economic development in general. As long as taxes are used to finance public expenditures, one can rest assured that businesses will be standing in line in the halls of legislatures and agencies waiting to make the case, or even issue ultimatums for tax incentives or privileges of one sort or another. Moreover, public policy makers and administrators may actually aggressively pursue an agenda of promoting economic development through tax incentives. The problem faced by decision makers can be reduced to the basic question of should or shouldn't abatements be awarded, given public objectives and the effects that can reasonably be expected from abatements. Researchers have spent the better of 70 years exploring different aspects of these questions without reaching definitive conclusions. Readers interested in a summary of the different aspects of the debate are referred to Bartik (1991), Wasylenko (1997), Fisher and Peters (1997), and Anderson & Wassmer (2000).

This article explores the relatively unresearched area of local incentives and their ability to influence inter-local location decisions. In particular, the analysis focuses on a very popular form of local incentive, the property tax abatement, and its ability to reduce capital cost. The research question is: By how much do property tax abatements reduce the capital cost of business and homes? This topic has received some minor attention in the work of other researchers.

*Transylvanian Review
of Administrative Sciences,
16 E/2006, pp. 5-11*

Wolkoff (1985), for example, estimated that a one-year full abatement reduces the price of capital by 4 percent. The purpose here is to make a more general analysis of the topic and to provide a range of reduction rates for different levels of property taxes and asset types. This research provides decision makers with useful information to consider in their abatement decisions and, in addition, with a simple method that can be easily adapted to different programs and regulatory frameworks to determine the impact of abatements on cost. The abatement program in existence in the State of Indiana is used as a benchmark for the analysis.

First, background information on the Economic Revitalization Area Program in the State of Indiana is provided. This includes information on how the program works in practice, using information from Monroe County. Second, the impact of abatements on capital cost is assessed. Finally, results are discussed and conclusions are provided.

Background¹

Section 6-1.1-12.1 of the Indiana Code contains the statutory provisions governing Indiana's central property tax abatement program for property located in economic redevelopment areas (ERA). The program has been subjected to a number of major changes since its inception in 1977 (Chang 2001). First, the scope of the abatement program has expanded over the years. Under the original legislation, local entities could award abatements to real property only. However, in 1983 abatements were allowed for new manufacturing equipment, and the scope of the program was further expanded in 2000 to include new research and development equipment.

Second, restrictions on the duration of abatement benefits have been relaxed since the program began. In 1977 legislation required that the benefits from property tax abatements be spread over a 10-year period. In 1986, additional flexibility was granted allowing local entities to award abatements for 3, 6, or 10 years in duration. In 2002 this flexibility was extended even further by granting local entities the right to approve abatements with durations anywhere between 1 and 10 years.

Third, accountability checks, which were omitted in the 1977 legislation, were instituted in 1991. Accountability was achieved by requiring applicants to file a "statement of benefits" which, once approved by local bodies, could be used to hold businesses accountable for investments offered in exchange for abatements.

Award and evaluation process

Indiana has a local, discretionary award process. The first step is for a local "designating body" to identify and designate an "economic revitalization area (ERA)." An ERA can also be designated specifically as a "residentially distressed area (RDA)."

The definition of "designating body" is contingent on the structure of local government in a county. In a county that does not contain a consolidated city, the fiscal body of the county, city, or town is the designating body. However, in a county that contains a consolidated city, the metropolitan development commission created by the city-county legislative body is the designating body.

The resolution identifying and designating an ERA may limit the type of deductions, dollar amounts of the deductions, and the duration of the designation. The designating body then publicizes the proposed resolution and conducts a hearing. Final action is taken after considering objections. An aggrieved person may appeal, but the only ground for an appeal is whether a project meets the qualifications of the economic revitalization law.

The next step is for an individual or an entity to present an application and a "statement of benefits" before the designating body. The ex-parte application can be filed before the designation and actually

¹ This section is taken from Mikesell, Zorn, and Dalehite (2003)

functions as a driver of the designation, or it can be filed after the designation, as an application for a particular deduction. The statement of benefits must include a description of and estimated value or cost of the project, and the number and salaries of people to be employed or retained. The designating body judges whether the information provided by an applicant is reasonable and whether the benefits justify the deduction. If the answer is in the affirmative, the designating body either designates the area or, if the area already exists, it allows the deduction. At the end of every year, the designating body must publish a list of the authorized deductions, including name of beneficiary, amount and years of the deduction. A statement of benefits may not be approved after December 31, 2005 (Indiana Code 6-1.1-12.1-9). In order for abatements to be awarded after this date, legislative reauthorization will be required.

Certain provisions of the Indiana Code refer to implementation, oversight, and evaluation of abatement agreements. First, the property owner must provide information showing compliance with the statement of benefits each year before the abatement deduction is allowed. If the designating body finds that compliance with the statement of benefits has not been substantial, then it may terminate the tax abatement. The corresponding resolution may be appealed by the owner. Additionally, if the voluntary claw-back clause established in the Indiana Code is included in the designating resolution, and if the owner ceased operations at the facility and provided false information regarding plans for continuing operations at the facility, the owner will also be assessed an amount equivalent to the benefits received plus a 10 percent penalty.

Second, relocation of abated personal property can only take place within an ERA, or to another ERA that lies within the jurisdiction of the designating body. If the designating body allows the relocation, the deduction continues uninterrupted.

Finally, a state level review of the effectiveness of the program must be conducted every four years. A central issue that must be considered in this evaluation is whether the program has been instrumental in creating new jobs or in increasing income or the tax base in the jurisdiction of the designating body. It may also include impacts on tax burdens borne by various classes of property owners.

Eligibility and scope of the abatement program

The property owner is entitled to an abatement if the property has been rehabilitated or the property is located in an area, which has been redeveloped. Redevelopment means the construction of new structures in ERAs, while rehabilitation refers to the remodeling, repair, or betterment of property in any manner, or any enlargement or extension of property.

Abatement on real property may be offered to industrial, commercial and residential property, subject to the following qualifications. Land is explicitly excluded from the abatement programs, as are facilities such as retail premises, golf courses, country clubs, massage parlors, tennis clubs and the like. In a RDA only residential property qualifies for a deduction. Residential abatements are otherwise limited to RDAs, to economic development target areas, or to multifamily facilities where at least 20 percent of occupancy is made available to low and moderate-income individuals. Personal property abatements are limited to industrial property, specifically new manufacturing and new research and development equipment. Inventory property may not be abated.

The property tax abatement takes the form of a deduction from the assessed value of the property. The amounts and schedules depend on the nature of the property and the type of designated area. In the case of a RDA, the abatement is granted for 1 to 5 years, and the deduction is for the full assessed value of the improvement, subject to dollar caps. These caps depend on type of dwelling (e.g. \$36,000 for a one family dwelling, \$51,000 for a two family dwelling etc.). In the case of designated property in other ERAs, the abatement may be granted for 1 to 10 years. The 10-year deduction or abatement schedule for real and personal property is provided in Appendix 1.

Methodology

The methodology for calculating the percentage reduction in capital cost (%ΔK) is relatively straightforward. We divide total tax savings (TS) from the typical 10-year abatement in Indiana by the assessed value of eligible investment (I). This can be formalized as follows:

$$\% \Delta K = \frac{TS}{I} \quad (1)$$

This fraction can be interpreted as the percentage reduction in the market or assessed value of assets at the time of purchase or start of operations. Total tax savings is calculated as the present value of tax savings for each year in the 10-year abatement period. This can be formalized with the following equation:

$$TS = \sum_{t=1}^{10} \frac{I \delta_t \alpha_t \tau_t a}{(1+r)^t} \quad (2)$$

where δ_t is the fraction of investment that has not been depreciated for tax purposes in year “t”, α_t is the fraction of un-depreciated investment that is abated in a particular year, τ_t the total property tax rate for a tax district in a given year, “a” is the after-tax fraction of tax savings and, lastly, “r” is the discount rate.

The depreciation schedule δ_t is applicable to personal property but not to real property. Thus $\delta_t = 1$ for all years in the case of real property. Both the depreciation and abatement schedules (δ_t and α_t) are provided in Appendix 1. The after tax fraction of tax savings “a” is equal to $1 - .35 - .085 = .565$ for business, where .35 and .085 are the federal and Indiana corporate income tax rates. For homes, $a = 1$. This is because property taxes are deductible from the federal income tax for business, but not for residential homes. Given that the federal and state corporate income tax rates are .35 and .085, businesses recuperate 43.5 percent of their property tax liability via the deduction from the corporate and state income taxes. This means that property tax abatements awarded to firms only provide an additional or marginal benefit equivalent to 56.5 percent of tax savings, given that the remaining 43.5 percent was already in their possession.

To simplify the analysis we make the assumption that the tax rate for each year equals the average tax rate over the 10-year period ($\tau_t = \bar{\tau}$). This allows us to focus on one number rather than ten numbers. The effect of this assumption on the results is negligible except for wide swings in the property tax rate in one direction over the 10-year abatement period. This would be a rare occurrence considering, on the one hand, the many tax and expenditure limitations in place and, on the other, and the importance of the property tax as a revenue source for local jurisdictions. With this simplifying assumption, substituting equation (2) into (1) and rearranging factors yields the following:

$$\% \Delta K = \frac{\sum_{t=1}^{10} \frac{I \delta_t \alpha_t \bar{\tau} a}{(1+r)^t}}{I} = \frac{I \bar{\tau} a \sum_{t=1}^{10} \frac{\delta_t \alpha_t}{(1+r)^t}}{I} = \bar{\tau} a \sum_{t=1}^{10} \frac{\delta_t \alpha_t}{(1+r)^t} \quad (3)$$

Equation (3) shows that ultimately the percentage reduction in capital cost is not a function of the amount of eligible investment (I), but rather of the average tax rate, corporate income tax rates, depreciation and abatement schedules, discount rate, and number of years. Equation (3) is used to calculate the percentage reductions in capital cost presented in the following section. The values used as average tax rates are the actual 2005 minimum, maximum, median, and mean total tax rates for Indiana taxing districts; the remainder are simply hypothetical tax rates between the minimum and maximum, rounded to the nearest hundredth. The depreciation and abatement schedules used are

those found in Appendix 1. Finally, a discount rate of 5 percent is used given that it approximates long term borrowing costs for Indiana cities.

Results

Table 1 presents the results of the calculations for different average tax rates and types of property.

Table 1: Percentage reduction in capital cost for eligible property by average tax rate and type of asset

Average 10-year Tax rate ($\bar{\tau}$)	% Reduction in eligible capital cost		
	<i>Residential</i>	<i>Business</i>	
	<i>Real</i>	<i>Real</i>	<i>Personal</i>
Min: 0.011	4.7%	2.6%	1.2%
0.020	8.3%	4.7%	2.2%
Median: 0.023	9.7%	5.5%	2.5%
Mean: 0.025	10.4%	5.8%	2.7%
0.030	12.5%	7.1%	3.3%
0.040	16.7%	9.4%	4.4%
0.050	20.9%	11.8%	5.5%
0.060	25.0%	14.1%	6.6%
0.070	29.2%	16.5%	7.7%
0.080	33.4%	18.9%	8.7%
Max: 0.083	34.7%	19.6%	9.1%

As one can see, the effect of abatements on the price of eligible capital can vary considerably, depending on the 10-year average tax rate ($\bar{\tau}$) and the type of property. The reduction is greatest for residential property, followed by business real and personal property. Business property receives a lower reduction because of the deductibility of property taxes from corporate income taxes. In fact, the difference between the reduction rates for residential and business real property can be considered a subsidy of local entities to state and federal governments. For the case of real property, the residential/real column can be seen as the revenue loss to local entities due to abatements, and the business/real column as the part of revenue losses that actually benefit firms (the actual magnitude of the incentive). The difference goes to the state and federal governments whose revenues increase because abated property tax liabilities are no longer deducted from the corporate income taxes. Finally, the reduction rates for personal property are lowest because of the added effect of the depreciation schedule.

The two business columns are most relevant to policy makers and public administrators, given that impact on firms is more important from the standpoint of promoting economic development. These columns show that the cost of business real property can be reduced by as little as 2.6 and as high as 19.6 percent, depending on the 10-year average tax rate ($\bar{\tau}$). However, for jurisdictions that are centrally located in the distribution of average tax rates, the reduction in eligible capital cost will be somewhere between 5 and 6 percent. The relative reductions in capital cost are lower for personal property because of depreciation schedules. Here, the reduction can vary from a low of 1.2 percent to a high of 9.1 percent, although firms in centrally located districts (in terms of the average tax rate) experience a reduction between 2 and 3 percent.

Discussion and Conclusion

The calculations presented in the previous section show that abatements can account for quite a large range of possible percentage reductions in the price of investment for firms. The results provide public administrators and policy makers involved in abatement decisions with useful information regarding the possible impact and overall suitability of this tool as an instrument to promote economic development. Wolkoff (1985) and Rubin & Zorn (1985) have expressed the need for public administrators to make informed case-by-case decisions regarding whether and in what amount to award abatements. This is considered necessary to make sure that abatements are indeed required to influence firm decisions, and that benefits to the community ultimately exceed cost. This is the area in which the information and method provided herein can be put to practical use.²

However, the exercise presented here must be taken in context. First, the results consider the impact of abatements on one portion of firm costs (eligible investment) and not total costs. Investment made by firms can include a mix of real and personal property, eligible and non-eligible assets, as well as capital and non-capital costs. It might be useful to think of a continuum for each average tax rate that goes from the largest possible reduction in total cost, to the smallest possible reduction. At one end of the spectrum one would find capital-intensive firms that invest mainly in real property, and specifically in improvements. These hypothetical firms would receive the greatest reduction in total cost, resembling the percentages contained in the business/real column of Table 1. As the percentage of personal property, non-eligible, and non-capital cost increases, the effect of abatements on total cost will decrease. At the other end of the continuum one would find labor-intensive firms that invest mostly in ineligible personal property. The reduction in capital cost for these hypothetical firms may well be below those of the business/personal column. The method presented here can easily be extended or modified to calculate reductions in total costs considering a diverse mix of assets and costs.

Second, even if abatements can account for a relevant reduction in capital costs or even total cost, this does not necessarily imply that they influence the investment or location decisions of firms. At most, as expressed above, it provides additional information to decision makers that may contribute to sound abatement awards. Some researchers have pointed out in the past that the effect of abatements on profits may be a more powerful indicator of the potential of abatements to influence investment and location decisions (Oakland 1974). An avenue of future research would be to translate these cost reductions into profit margin increases under different scenarios.

Lastly, the calculations performed in this article consider the structure of the abatement program in the State of Indiana. To extend these findings one would have to consider the differences between this program and those contained in other states or countries.

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² For literature on other factors to consider in the abatement decision, the reader is referred to Dalehite (2006)

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Appendix

Schedule for real and personal property 10-year abatement

Year of abatement	% Eligible investment deducted	
	Real	Personal
1 st	100%	100%
2 nd	95%	90%
3 rd	80%	80%
4 th	65%	70%
5 th	50%	60%
6 th	40%	50%
7 th	30%	40%
8 th	20%	30%
9 th	10%	20%
10 th	5%	10%

Depreciation schedule for personal property (useful life=10 years)

Year of use	Taxable percentage of original cost
1 st	40%
2 nd	60%
3 rd	55%
4 th	45%
5 th	37%
6 th	30%
7 th	25%
8 th	20%
9 th	16%
10 th	12%