Effects of Property Tax Abatements on Tax Rates and Capital Costs: The Case of Monroe County, Indiana

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Abstract

Research on property tax abatements has focused mostly on the determinants of abatements, and on the effectiveness of abatements in influencing relocation, jobs, investment and other outcomes. Two questions that have not been addressed in the literature are the effect of tax abatements on tax rates, and the effect of tax abatements on capital cost savings for individual taxpayers. This paper provides the first systematic look at the effects of property tax abatements on tax rates and capital costs. Due to the high degree of variation among abatement programs in the United States, this analysis is best performed as a case study. Therefore, the effect of property tax abatement programs in Monroe County, Indiana is analyzed in this study.

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Effects of Property Tax Abatements on Tax Rates and Capital Costs: The Case of Monroe County, Indiana[1]

Research on property tax abatements has focused mostly on the determinants of abatements, and on the effectiveness of abatements in influencing relocation, jobs, investment and other outcomes. Scholars have found that abatements are awarded both irrationally, i.e. automatically upon request (Wolkoff, 1983), and rationally as localities award abatements to firms with better credit ratings and to those that offer to create (versus retain) jobs (Reese, 1991). Researchers have also reported that abatement awards are further explained by the need to compensate for a community's profit reducing characteristics (Wassmer, 1992), by a simple emulation effect, low median income or low public service property tax prices (Anderson and Wassmer, 1995), or by population size, a growing economy, competitive mayoral races and the presence of an independent economic development department (Byrnes, Marvel and Sridhar, 1999).

With regards to effectiveness, some public finance academicians have shown that abatements may be effective tools to increase revenues (Beck 1985, 1993), approximate permanent reductions in tax rates (Severn, 1992), slow down the exodus of firms from the inner city (Coffin, 1982), create jobs (Royse, 1994; and Chang 2001a, 2001b), reduce expenditures (Wassmer, 1991), or achieve net benefits for the community (Morgan and Hackbart, 1974; Morse and Farmer, 1986). Others, however, have found that abatements are rather ineffective tools for inducing actual investment. (Ross, 1953; Wolkoff, 1985).[2]

Two questions that have not been addressed in the literature are the effect of tax abatements on tax rates, and the effect of tax abatements on capital cost savings for individual taxpayers. This paper provides the first systematic look at the effects of property tax abatements on tax rates and capital costs. Due to the high degree of variation among abatement programs in the United States, this analysis is best performed as a case study. Therefore, the effect of property tax abatement programs in Monroe County, Indiana is analyzed in this study.

First, background information on property tax abatement programs in the State of Indiana and Monroe County is provided. Second, the pattern of abatements in Monroe County over a twelve year period is discussed. Third, the impact these abatements have had on local jurisdictions is identified. Fourth, the effect abatements have had on the capital costs of property owners receiving abatements is discussed. Finally, a concluding section is provided.

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1 We would like to acknowledge the generous support of the Monroe County Auditor's Office which graciously provided access to their abatement files and took time to answer our questions.

2 See Mikesell, Zorn, Dalehite and Park (2002) for a more detailed literature review on property tax abatements and a summary of the structure and features of abatement programs in various states.

Abatement Programs in the State of Indiana and in Monroe County, Indiana

Background

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 choose among abatements 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.

The abatement program operates in an environment that requires, by state constitution, "a uniform and equal rate of property assessment and taxation" (Article 10, Section 1). It therefore presents virtually the only means for differentiating the property tax rate between land and improvements on the land.

The Current ERA Abatement Program

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 and in a county that contains a consolidated city, the metropolitan development commission created by the city-county legislative body is the designating body.[3]

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 all remonstrances and 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 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% penalty.[4]

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.

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[3] Indianapolis, in Marion County, is the only consolidated city in the state. Powers of a city-county legislative body to create a metropolitan development commission can be found in Indiana Code 36-3-4-23.

[4] Claw-back provisions both terminate the abatement agreement and require beneficiaries to return previously acquired tax benefits.

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.[5]

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[6], or to multifamily facilities where at least 20% 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 to10 years. The deduction is equal to 100% of the increase in value realized in the first year and depreciates thereafter in a straight line fashion depending on the number of years in the abatement award. For example, the deduction amount in the nine-year abatement would be the increase in value multiplied by the following factors:

Year of deduction	Factor

5 Contact was established with the Indiana General Assembly (legislative Services), the Indiana Department of Commerce, the Indiana Department of Local Government Finance and the Indiana Economic Development Council in order to ascertain whether such an evaluation has been performed. Unfortunately, it appears that this has not been the case at least in a public, published fashion.

6 Under Indiana Code 6-1.1-12.1-7, the fiscal body of a city or town may designate as an economic development target area a specific geographic territory that has become undesirable or impossible for normal development and occupancy, or that is of historic importance.

1st	1.00
2nd	0.88
3rd	0.77
4th	0.66
5th	0.55
6th	0.44
7th	0.33
8th	0.22
9th	0.11

The abatement schedules for personal and real property are the same, except in the case of the ten-year abatement where. In this instance, the abatement amount for personal property is depreciated in a straight-line fashion as described above. However, the abatement schedule for real estate is slightly front-loaded meaning the overall abatement amount (for equal amounts of investment) is considerably less than the ten-year personal property abatement, and roughly equivalent to the nine-year abatement.

The 322A Abatement

In addition to the major ERA program described above, Indiana has a minor abatement program for rehabilitated property erected at least 50 years prior to the abatement application date (Indiana Code, Section 6-1.1-12-22). Abatements that take place under this section are commonly known as "322As," named after the number of the form used to apply for the program.

Under the 322A program, the owner must invest at least $10,000 in the rehabilitation and, in exchange, may deduct 50% of the increase in assessed value for a period of five years. The deduction cannot exceed $60,000 for a single family dwelling unit or $300,000 for any other type of property. This form of abatement is relatively unimportant in Monroe County as compared with the ERA program, representing 6% of all applications received over the last 15 years, with relatively small deductions ranging from $50 to $17,800 in 2002 (true tax value).[7]

[7] A major change in Indiana assessment policy must be borne in mind when reading this paper. Through 2001 assessed value was determined by multiplying 1/3 times "true tax value," the standard of value in the State of Indiana. True tax value roughly is equivalent to the property's replacement cost. (Actually the definition of true tax value is very involved and beyond the scope of this paper. In the early 1990s the Indiana Civil Liberties Union filed a lawsuit against the State of Indiana, contending that the true tax value standard and the assessment process in the state was unconstitutional). Beginning in 2002, assessed value is equal to true tax value, meaning the assessment ratio of 0.33 is no longer applied to derive assessed value. This is another step in the transition to a system of property valuation based on the market value standard.

The ERA program in Monroe County

During the past fifteen years, Monroe County has actively participated in the ERA program, making it a good example of how the program is applied in practice. First, in Monroe County there is an interesting division of labor with respect to what entity approves property tax abatements. For property that is within the limits of the City of Bloomington (the major urban area in the county), the City Council approves property tax abatements. For property that is outside the city limits the County Council approves the abatements. Personal property abatements are approved either by the City or County Councils, yet the Indiana Department of Local Government Finance, a state agency, determines the actual deduction amounts received by the property owner.

The Bloomington City Council does not have a specific policy on abatements other than what is provided in state statute. However, the County Council issued a resolution in 1996 requiring that an applicant business must provide average compensation and benefits that total $12.00 or more an hour per employee, and that a business expansion must add four or more employees. In addition, the County Council resolved not to award abatements to residential property. Hence, residential abatements are only awarded by the City Council for property within city limits.

With regards to accountability, the evidence is mixed in Monroe County. A review of the standard 322 ERA application forms indicates that they do not contain the optional claw-back provision that is provided for in statute. Because the 322 ERA form is generated by the state, this suggests that the claw-back clause generally is not utilized in the state. However, there is evidence that both the Bloomington City and Monroe County Councils have terminated previously awarded abatements due to non-compliance.

Wolkoff (1983) has questioned whether local governments are rational in awarding abatements, given that they are virtually always awarded and that local officials fail to differentiate between applicants. He suggests that abatement awards should be proportional to the value of the proposed development although he recognizes that this may be difficult to implement due to the expertise that would be required and the potential conflict with political and policy priorities.

In this regard, Monroe County appears to grant deductions under the abatement program uniformly and generously. An analysis of applications filed over the last 15 years found that all ERA real estate applications were awarded for the maximum amount of 10 years. Interestingly, all residential abatements were awarded for 10 years, which leads us to conclude that the RDA modality has not been put into practice. Also, all 322A abatements were similarly awarded for the maximum duration of five years. With regards to personal property, according to information provided by the Department of Local Government Finance most abatements are likewise awarded for 10 years, though there is some variation due to differences in asset useful life.

In addition to abatements being awarded invariably for the maximum duration, the vast majority of deduction applications have been resolved in favor of applicants. Of all 322 ERA and 322A application forms reviewed for this paper, only two cases of 322A applications were denied on grounds that the rehabilitation had not increased the value of the property.

Patterns in the Amount Abated

There are two general sources for abatement information in the State of Indiana. Information on real estate property abatements is available from the county auditor's office and information on personal property abatements, which are ultimately approved at the state level, is available from the Indiana Department of Local Finance (formally the Indiana State Board of Tax Commissioners). For this study data on both real and personal property abatements was generously provided by the Monroe County Auditor's Office.

According to data for Monroe County, a total of 126 applications for real estate abatements have been approved since 1987, most of which benefit a single taxpayer.[8] In the case of personal property, a total of 31 businesses have been awarded abatements, some of which for a one-shot investment, others for several, rolling investments.

The pattern of actual property tax abatements awarded by Monroe County for real and personal property over the last twelve years is presented in Figure 1. Two general patterns are discernible. The first is that personal property abatements have been more important than real estate abatements in terms of impacts on the property tax base. The second pattern is that whereas real estate abatements show a relatively stable upward growth pattern, personal property abatements are much more volatile and vary to a greater degree with economic cycles, firm relocation, or the investment decisions of large firms.

Real estate abatements went from $1,312,210 in 1990[9] to $10,127,927 in 2002[10], growing at an average annual rate of 18.6%. Personal property abatements, on the other hand, went from $4,801,300 in 1990 to $17,609,740 in 1996, growing at an annual rate of 24.2% during this 6-year period, but then dropped to $7,928,150 in 2002[11], averaging an annual growth rate of 4.3% for the entire 12-year period.[12]

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[8] Some businesses naturally are beneficiaries of two or more applications and approvals.

[9] 1990 means "1989 Pay 1990" in Indiana public accounting terminology. This, *mutatis mutandi*, goes for any other fiscal year cited in this paper.

[10] Starting in 2002 Indiana went from fractional assessment to an assessment method known as "true tax value." In practice, this meant multiplying property values and abatements times three. Therefore, in order to maintain comparability between year 2002 data and prior data, we divided year 2002 data by three.

[11] Actual personal property abatements for year 2002 were not available. Therefore the estimated amount contained in the "sheets" was used for both Figure 1 and the growth rate calculations.

[12] All numbers are expressed in current dollar terms.

The fact that personal property abatements have exceeded real estate abatements has important implications for the determination of whether the benefits of property tax abatements outweigh the costs. Abatements imply a tradeoff between job creation or retention, increased revenue sources, and economic multiplier effects (assuming investments would not have taken place without the abatements) on the one hand, and increased tax rates, inequity, and expenditures (from increased demand for public services brought by new development) as well as possible revenue losses on the other hand.

In view of this tradeoff, the case for real estate abatements is, ceteris paribus, comparatively stronger given that the useful life of structures exceeds the abatement period and structures are immovable. Therefore there is a long lasting increase in the tax base. In contrast, the case for personal property abatements is not as strong. Personal property's useful life does not necessarily exceed the abatement period and it tends to be movable. Thus, the benefits of an increased tax base are temporary or smaller in comparison.

Figure 2 shows patterns in abatements by use of property—manufacturing, commercial or residential.[13] Clearly manufacturing abatements constitute the largest portion of total abatements, dwarfing the contributions from commercial and residential abatements. As of 2002, manufacturing awards represented 81.1% of total abatements in the county, whereas commercial abatements represented 16.9%, and residential abatements 2.0%.[14]

The challenge of balancing benefits and costs appears to be compounded in Monroe County because, in addition to the above concerns, a hefty part of total abatements, which are mostly for manufacturing and commercial enterprises, are located in rural, more sparsely populated Richland Township (see Tables 1 through 5). The inhabitants of such an area will surely bear the tax rate increases derived from abatements but, given its rural nature, may actually be exporting the jobs created to neighboring urban jurisdictions or other counties.

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[13] Monroe County data shows a rather informal and overlapping classification of property uses. It is common to find property classified under several usages. For the purposes of this study, if property was classified as having manufacturing and other usages, it was classified as manufacturing. Under the commercial property heading, property that was classified as commercial was included in addition to that which was classified as warehousing, office and apartments (commercial housing). Lastly, the following typologies found in the county records were included under residential: single family housing, condo, and duplex.

[14] From a historical perspective, manufacturing abatements are—not surprisingly—the oldest in Monroe County. In fact, data not shown in this paper reveals that the first personal property abatement took place in 1987 and the first real estate abatement took place in 1988. Interestingly, residential abatements first appear in 1993, before commercial abatements which first appear in 1995, but soon they become a more important recipient category of abatements.

Impact of Abatements on Local Tax Rates

Another rich source of data on abatements is the annual Abstract of Property Valuations and Amount and Kind of Taxes Levied Thereon, commonly known as the “abstract” or the “sheets” given that it is contained in long paper sheets. This resource presents comprehensive annual information on the base of the property tax and all deductions taken on this base. The result is the net property tax base which is used to determine property tax rates for each tax district in the county during the annual budget making process. Because the “sheets” information is used in the budget process to determine tax rates, it is used in this analysis to determine the effects of abatements on tax rates.[15] Our calculations assume that investment would have taken place even in the absence of abatements.

Research on property tax abatements has focused predominantly on determinants and effectiveness of abatements. The effect of these on tax rates has not heretofore been researched. Tables 1 through 5 present the effect that abatements have had on tax rates in Monroe County, Indiana taxing units from 1998 to 2002.[16] This includes the tax rates of Monroe County, its eleven townships (Benton, Bloomington, Clear Creek, Indian Creek, Perry, Polk, Salt Creek, Van Buren, Washington, Bean Blossom, and Richland), its three incorporated cities and towns (Bloomington, Stinesville, and Elletsville), its two school corporations (Monroe County Community School Corporation and Richland Bean Blossom Community School Corporation), and its four special districts (Solid Waste District, Library, Bloomington Transit, and Perry Clear Creek Fire). Statewide levies are included as well.[17] Tax rate increases due to abatements are expressed in absolute numbers as well as percentages. Both are important though the absolute numbers convey a better sense of the direct effect of abatements on taxpayer’s pocketbooks.

Property Tax Rate Increases in Absolute Numbers

The results in Tables 1 through 5 suggest a number of things with regard to the effect of abatements on tax rates in Monroe County. First, with one exception, the annual impact that abatements have had in each of the last five years on tax unit tax rates is small, ranging from zero to five cents for every $100 of assessed value. This implies that for

[15] The information in the “sheets” differs from the aforementioned sources in that it is based on estimates of abatements, not actual abatements. In reality, the difference between actual abatements and estimates of abatements generally is small.

[16] The calculations are shown in the appendix and assume that abatements do not result in a reduction in expenditures but rather an upward adjustment in the tax rate. Several public officials have corroborated that this assumption is in fact realistic. The tax rate increases in each year should not be added together to arrive at a cumulative 5-year effect on tax rates. This is incorrect since it implies counting the effect of abatements several times. As mentioned in this paper, abatements are given over a period of 1 to 10 years, and hence the amount of abatements in any given year is composed mostly of abatements granted in previous years.

[17] The statewide levy is minimal at one cent per $100 of Assessed Value.

housing valued at the county median housing unit value of $113,100,[18] the increase due to abatements in the tax bill received from a particular tax unit has ranged between $0.0 and $56.5, depending on the year and the tax unit.[19] This finding—assuming it is generalizable to abatements in other localities and states—explains the contradiction between the conceptual unpopularity of property tax abatements among taxpayers and academics on the one hand and, their popularity among public officials. It also may help explain the lack of significant opposition to this economic development tool among taxpayers and its rapid spread across the United States over the past thirty years.

Second, the common assertion that school corporations are hardest hit by property tax abatements receives mixed support from the data. On one hand, the tax rate for the Monroe County Community School Corporation increased a relatively small amount during the 1998-2002 period, between two to three cents per $100 assessed value. On the other hand, the tax rate of the Richland Bean Blossom Community School Corporation increased between 32 and 55 cents per $100 of value.[20] The annual increase in the tax bill received from this school corporation ranged between $361.9 and $622.1 for the median value home during this five year period, a marked contrast to the increases from other tax units.

Third, the effect of abatements on the tax rate does not depend on the nature or functions of the tax unit. The change in the tax rate is a function of the tax rate, and the ratio of abatements to assessed value.[21] A close inspection of the data for school corporations in Tables 1 through 5 reveals that the reason the Richland Bean Blossom Community School Corporation is so negatively impacted is that its ratio of abatements to assessed value is much larger than that of the other school corporation. In fact, the tax rates of the two school corporations are comparable. Therefore, school corporations are not necessarily more negatively impacted than other taxing units by tax abatements; rather, any taxing unit will experience a larger effect on its tax rates from abatements the greater its tax rate and the greater the ratio of abatements to assessed value.

To illustrate the point further, take the row in Tables 1 through 5 that corresponds to Richland Township-Richland Township.[22] In this case, the ratio of abatements to base is greater than that of the Richland Bean Blossom Community School Corporation;

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[18] The Monroe County median housing unit value was retrieved from the US Census website on December 4, 2002 at http://quickfacts.census.gov/qfd/states/18/18105.html.

[19] Richland Bean Blossom Community (R.B.B.C) School Corporation has experienced a more sizable tax rate effect during this time period.

[20] The declining effect of abatements on the Richland Bean Blossom Community School Corporation tax rate is probably due to the declining amount of personal property tax abatements awarded over the same years as shown in Figure 1.

[21] See the appendix for details.

[22] Richland Township-Richland Township denotes the portion of Richland Township that is neither within the limits of the City of Bloomington or Ellestsville.

however, the absolute tax rate increases are smaller given that the tax rate for Richland Township-Richland Township is also much smaller.

Four, given the determinants of changes in the tax rate described above, a policy to expand the base—such as Indiana's move from fractional assessment to fair market value—will make the impact of abatements on tax rates much smaller. In the case of Indiana, this is a rather convenient byproduct of full assessment for proponents of property tax abatements.

Five, the case of the Richland Bean Blossom Community School Corporation shows a vivid example where it is the tax rate of a taxing unit with no say in the award process that is hardest hit by abatements.

Property Tax Rate Increases in Percentages

Absolute and relative tax rate increases should differ as each is explained by different variables. Whereas absolute tax rate increases—as noted above—are explained by the tax rate and the ratio of abatements to assessed value, percentage increases are determined solely by the ratio of abatements to net assessed value.[23]

However, tax rate increases expressed in percentages confirm generally the conclusions made in the previous section, though differences are less marked. First, with the exceptions of Richland Township and the Richland Bean Blossom Community School Corporation, relative tax rate increases due to abatements, have been small and range between 0% and 4.8%, with a positively skewed distribution (i.e. most observations falling on the lower end of the distribution).

Second, school corporations are not necessarily hardest hit by abatements. Whereas the Monroe County Community School Corporation has only increased its tax rate by a negligible 0.6% for each year of the 1998-2002 period, the tax rate for the Richland Bean Blossom Community School Corporation shows starker increases during the same period, ranging from 7.3% to 14.4%. This finding is consistent with the conclusions of the previous section.

However, it is in fact Richland Township that has experienced the greatest tax rate increases in relative terms. The tax rate applied by Richland Township to the portion of its jurisdiction that is within the limits of the City of Bloomington increased by 35.8% in 1998 and 21.3% in 1999. Thereafter, no additional abatements have been awarded in this area. Also, the tax rate applied by Richland Township to the portion of its jurisdiction that is not within the limits of the City of Bloomington experienced increases that ranged between 11.1% and 19.7% during the 1998-2002 period.

All other points made in the previous section are equally applicable here. The relative impact of abatements on rates is not a function of the activities performed by a particular

[23] See the appendix for details.

tax unit, but rather of the ratio of abatements to net assessed value. Also, the relative impact on rates will be smaller under full assessment policies. Lastly, tax units with no say in the decision to award abatements have experienced the greatest tax rate increases in percentage terms.

Impact of Abatements on Capital Costs

Another question that has not been addressed in the literature is how property tax abatements impact the tax costs or capital costs of the recipient property owners. Capital cost savings are not only important from the perspective of the investor, but also from the perspective of the awarding governmental entity. Comparing capital cost savings to assessed value shows, ceteris paribus, the tradeoff between savings offered by government, and assessed value received in return.

Actual, Illustrative Cases

In this subsection, actual, illustrative cases are presented. These cases are, however, not comparable for several reasons, and caution is advised in making comparisons or generalizations. First, the cases selected received abatements at different times, have therefore benefited differently from their abatement award as of 2002, and are also located in different tax districts with different tax rates. In addition, whereas the first four cases are one-shot investments, the fifth case is a manufacturer that makes investments in both real and personal property on a rolling basis. Lastly, the first three cases deal with real estate investment only, whereas the last two are cases where both real and personal property investments are made. In order to make up for these circumstances, in the following subsection two hypothetical cases are analyzed that allow us to make more general statements about capital cost savings and give more flexibility for purposes of generalizing.

In an attempt to measure capital cost savings, an average or representative case was selected for the single family housing, apartment, and commercial categories.[24] Discounted amounts are calculated using a rate of 5%, which approximates the long term borrowing costs for the City of Bloomington. Tables 6, 7, 8, and 9 show tax or capital cost savings for actual recipients of property tax abatements in Monroe County. For manufacturing abatements, which showed considerable variance, small and large cases are shown in order to better illustrate savings.

Capital cost savings are naturally a function of invested amounts. Not surprisingly, residential abatements show the smallest savings, followed by commercial and manufacturing abatements. An owner of an average eligible single family house with an abatement in place from 1998 to 2002 and an initial investment of $38,790, saved or recuperated $6,247 in 2002 dollars. By contrast, an owner of an average sized apartment property with an abatement in place over the same period and an initial investment of

[24] It should be noted that all three categories displayed little variance in abatement amounts.

$176,490 saved $28,431 in capital costs. In relative terms, both of these properties have recuperated 12.6% of their initial investment in five years, given that both are located in the same district and both abatements have been in place for the same time period.[25] However, both still have five years of decreasing benefits remaining.

Commercial abatements tend to be larger in size. An average commercial property owner, with an initial investment of $918,480, and an abatement in place over the 1997-2002 period (six years) has recuperated $168,413 of his initial investment. With four year of benefits remaining, this property owner has recuperated 13.7% of his investment thus far.[26] This percentage is greater than the previous one mainly as a result of one year of additional benefits.

The three previous cases depict situations in which abatements have been granted on one parcel of real estate. Savings for manufacturers are slightly more complex since personal property and depreciation schedules come into play (see the Appendix). Table 9.a. shows savings for a small manufacturer with one investment in real estate and also one investment in personal property. Savings in this case have amounted to $59,551 over an 8-year period, considering an initial investment of $385,393. In relative terms, this property owner has recuperated 10.5% of initial investment, with two years of benefits remaining.[27] This percentage is lower than the previous two, mainly on account of the lower tax rates in Van Buren Township.

Table 9.b shows a complex case where investments in real estate and personal property take place on a rolling basis and where savings have amounted to $9,876,880 over a 13-year period (calculating an initial investment is impossible given that personal property data is aggregated).

Hypothetical, General Cases

Tables 6 through 9 presented savings of actual cases which illustrate differences in the absolute and relative amount of savings across uses of property, invested amounts, time spans and tax districts. In this subsection, with the aid of hypothetical cases that have received the full 10 years of benefits, more general statements are made about capital costs savings, independent of use of property and of invested amounts, and a clear contrast between the benefits of real estate abatements vis-à-vis personal property abatements in Monroe County, Indiana is offered

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[25] To calculate this percentage, savings are discounted to 1997 dollars, which is also the year in which the investment is assumed to have been made. Total savings are then divided by $38,790, our best approximation of initial investment. The quotient is then multiplied times 100.

[26] This percentage is calculated using the same procedure as in the previous example. Total savings are divided by $918,480.

[27] This percentage is calculated using the same procedure as in the previous example. Total savings are divided by $385,393. Initial investment was calculated in the following way: ($127,789*3)+($270*3/0.4)=$385,393. Dividing by 0.4 reverses the effect of depreciation.

Table 10 exhibits a hypothetical investment in real estate and Table 11 exhibits a hypothetical investment in personal property (machinery). Both are for a $300 amount, both assumed to have received a 10-year abatement and both are located in Richland Township Taxing District (same tax rates). In these tables savings are discounted back to 1992 in order to compare them with invested amounts, which are assumed to have taken place in 1992.

Comparing the difference in the ratio of savings to investment and, more importantly, of savings to average assessed value in the case of personal property reveals some interesting results. Whereas real investment recuperated 10% of initial investment through the abatement, the personal property investment recuperated only 5%. This difference is, however, misleading due to the fact that —over and above fractional assessment— depreciation schedules are applied to personal property and not to real estate property, and thus only a fraction of personal property investment is considered for abatement purposes. I.e., for equal amounts of investment, the abatement deduction (and savings) will be smaller for personal property relative to real estate.

In order to get a better evaluation of the relative savings of real estate versus personal property investments, a comparison of ratios of savings to assessed value is more meaningful. According to this comparison, savings in the case of personal property are 42% of average assessed value, whereas savings in the case of real estate are only 31% of assessed value. This means that personal property abatements are more generous than real estate abatements which, in turn, compounds the earlier statement on balancing benefits and costs of abatements in the case of personal property. These percentages will be larger in tax districts with greater tax rates.[28]

Conclusions

This paper presents a micro analysis of the property tax abatement program in Monroe County, Indiana, focusing on the effects of abatements on tax rates and on capital savings for beneficiaries, both of which have not received attention in the literature. The findings offered here are specific to Indiana and the decisions taken in Monroe County and caution is advised in making generalizations.

A review of the program from an operational standpoint reveals that, even though flexibility is afforded in statute, abatements are invariably awarded for the maximum duration, without distinguishing between applicants. This finding is consistent with what has previously been reported by Wolkoff (1983).

Historical patterns show that total abatements have been relatively modest in Monroe County. However, in contrast to previous studies that typically distinguish abatement by use of property (manufacturing, commercial, residential), this paper also distinguishes

[28] The percentages shown in Tables 10 and 11 cannot be generalized across tax districts or time periods given that they depend on tax rates.

abatements by type of property and contrasts the pattern of personal and real estate property abatements. A rather unexpected finding was that personal property tax abatements historically have been larger than real property abatements. This result is salient given that personal property only temporarily increases the property tax base and that, personal abatements —as the analysis in this paper shows— represent a more generous proposition to property owners than real estate abatements. Notwithstanding, of 35 states offering tax abatements, Indiana in only one of seven states that tax personal property.

Effects on property tax rates have also been modest, ranging between zero to five cents per $100, or between 0% and 4.8% in most cases. Previous research has most often emphasized revenue losses as the main negative outcome of abatements. This however does not appear to be the case in Indiana, where abatements are generally accommodated by increasing tax rates. Thus modest rate increases may stand as one reason why abatements —despite their unpopularity in academic and popular circles— are quite popular among public officials and have proliferated dramatically in the United States over the last thirty years.

However, some tax units have experienced quite dramatic rate increases. For example, the Richland Bean Blossom Community School Corporation experienced rate increases ranging between 32 and 55 cents per $100 during the 1998-2002 period, or between 7.3% and 14.4% in relative terms. Richland Township experienced modest increases in absolute terms that, however, were quite substantial in relative terms. For example, the rate for “Richland City”[29] increased by one cent per $100 in 1998 and 1999. This same increase, in relative terms, was a 36% increase in 1998 and a 21.3% increase in 1999. Absolute and percentage increases may not be consistent given that each has different determinants. Absolute rate increases are a function of the tax rate and the ratio of abatements to assessed value. Relative rate increases are a function solely of the ratio of abatements to net assessed value.

Lastly, abatements in one tax district of Monroe County have offered over the last 10 years savings of 10% of investment for the case of real estate and 5% of investment for the case of personal property, and of 31% of net assessed value for the case of real estate and 42% of average net assessed value for the case of personal property. The latter comparison is the most meaningful given that it teases out the effect of depreciation schedules for personal property. These percentages would be higher in tax districts with higher tax rates.

[29] “Richland City” denotes the portion of Richland Township that is within the limits of the City of Bloomington.

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Appendix for Calculations

1. Annual growth rates were calculated using the following equation:

$$\left(\frac{FV}{PV}\right)^{1/n} - 1 = r$$

Where *FV* is future value, *PV* present value, *n* the number of years in the period, and *r* the annual growth rate.

2. The effect or change in property tax rates was calculated using the following equation:

$$\Delta\tau = \frac{L}{NAV} - \frac{L}{NAV + PTAs} = \frac{L}{NAV} * \frac{PTAs}{NAV + PTAs}$$

Where $\Delta\tau$ is the change in the property tax rate, *L* the levy, *NAV* the net assessed value and *PTAs* the abatements. In essence we are subtracting a hypothetical rate without the abatement deductions from the rate that considers the deductions. This equation shows that the change in the rate is the result of multiplying the tax rate times the ratio of abatements to assessed value (*NAV+PTAs*), assuming no other deductions.

In addition, the relative change ($\%\Delta\tau$) in the property tax rate is given by the following equation:

$$\%\Delta\tau = \left(\frac{L}{NAV} \div \frac{L}{NAV + PTAs}\right) - 1 = \frac{PTAs}{NAV}$$

3. Tax or capital cost savings calculations for Tables 6, 7 and 8 are relatively straight forward since these do not contain personal property abatements. AV is multiplied times the tax rate to arrive at the hypothetical tax liability. To calculate the actual tax liability, we subtract the abatement from the AV (assume no other deductions) and multiply the result times the tax rate. Lastly, we subtract the actual liability from the hypothetical liability to arrive at tax savings. The previous procedure can be summarized in the following equation:

$$Savings = AV * \tau - (AV - PTA) * \tau$$

These calculations assume no reassessments, which take place in Indiana every five years. However, as long as the levy is constant, reassessment has no effect on tax savings since they affect AV, abatements and the rate proportionately. Changes in savings would not be due to reassessments but rather to the changes in the levy and its influence on the tax rate.

Table 9 adds complexity by including personal property abatements. Calculations are similar to what is described above except for the AV estimate, where depreciation of personal property is factored into the computations. We performed depreciation according to what is known as “Old Reg. 16,” i.e. the rules for valuation of depreciable tangible personal property issued by the State Board of Tax Commissioners for equipment installed before 3/2/01. Depreciating personal property entailed the following steps. First, we assumed that personal property fell in “Pool 2” for property of useful life of 5 to 8 years. The Department of Local Government Finance confirmed that most abated property does in fact fall within this category. Second, the AV of the investment was attained by dividing the first-year abatement amount by 0.4, considering that 100% of true tax value is abated the first year. This reversed the depreciation performed on the first year (adjusted cost times 0.4 equaled true tax value for the first year, under the old rules). Third, we applied the old “Pool 2” depreciation schedule for each year of the useful life of the investment. Fourth, after eight years of useful life, the investment was dropped out of the AV calculation. This procedure was confirmed by the Department of Local Government Finance. There could be some margin of error due to property being sold before the end of its useful life, or retained in operation beyond such time, but overall the calculations should be accurate. Table 10 adds more difficulty in that several real estate properties and several personal property investments made at different times are considered. The basics of the calculation are, however, the same. The details of depreciation are left out of the tables for purposes of clarity.

Table 1: Effect of Property Tax Abatements on Tax Rates in Monroe County, Indiana, 1998

Taxing Unit	NAV	Rates $100	PTAs	Rates W/Out PTAs $100	PTA Tax Inc. $100	% Inc.
Benton Township	23,970,190	0.2380		0.2380		
Bloomington Township						
Bloomington Township	48,008,210	1.1182	209,010	1.1134	0.00	0.4%
Bloomington City	152,405,499	0.0965	1,452,040	0.0956	0.00	1.0%
Clear Creek Township	35,989,565	0.2093		0.2093		
Indian Creek Township	7,696,895	0.2447		0.2447		
Perry Township						
Perry Township	64,067,829	0.1021		0.1021		
Perry City	267,374,784	0.1021	1,186,180	0.1016	0.00	0.4%
Polk Township	1,897,860	1.3081		1.3081		
Salt Creek Township	15,283,360	0.1043		0.1043		
Van Buren Township						
Van Buren Township	72,638,295	0.6751	1,618,260	0.6604	0.01	2.2%
Van Buren City	18,424,940	0.1286		0.1286		
Washington Township	14,587,325	0.1691		0.1691		
M.C.C. School Corp.	722,344,752	4.4520	4,465,490	4.4246	0.03	0.6%
Bean Blossom Township						
Bean Blossom Township	12,704,330	0.2683		0.2683		
Stinesville	(see below)	0.0384		0.0384		
Elletsville	23,831,245	2.3238		2.3238		
Richland Township						
Richland Township	87,648,433	0.3210	17,296,225	0.2681	0.05	19.7%
Richland City	3,291,190	0.0366	1,176,900	0.0270	0.01	35.8%
Ellettsville	(see above)	0.0366		0.0366		
Stinesville	399,045	1.9154		1.9154		
RBBC School Corp.	127,874,243	4.3608	18,473,125	3.8103	0.55	14.4%
County	850,218,995	2.0268	22,938,615	1.9736	0.05	2.7%
State levies	850,218,995	0.0100	22,938,615	0.0097	0.00	2.7%
Solid Waste District	850,218,995	0.0891	22,938,615	0.0868	0.00	2.7%
Library	850,218,995	0.5213	22,938,615	0.5076	0.01	2.7%
City of Bloomington	441,496,413	3.7766	3,815,120	3.7442	0.03	0.9%
Bloomington Transit	(Was not yet created)					
Perry Clear Creek Fire	100,057,394	0.5198		0.5198		

Table 2: Effect of Property Tax Abatements on Tax Rates in Monroe County, Indiana, 1999

Taxing Unit	NAV	Rates $100	PTAs	Rates W/Out PTAs $100	PTA Tax Inc. $100	% Inc.
Benton Township	25,402,715	0.2344		0.2344		
Bloomington Township						
Bloomington Township	48,506,815	1.1685	155,580	1.1648	0.00	0.3%
Bloomington City	156,717,305	0.0999	1,557,765	0.0989	0.00	1.0%
Clear Creek Township	38,105,005	0.2146		0.2146		
Indian Creek Township	8,081,165	0.5767		0.5767		
Perry Township						
Perry Township	73,045,360	0.0790		0.0790		
Perry City	275,082,226	0.0790	1,106,070	0.0787	0.00	0.4%
Polk Township	1,936,105	1.2890		1.2890		
Salt Creek Township	15,864,295	0.1191		0.1191		
Van Buren Township						
Van Buren Township	75,314,285	0.6545	1,481,025	0.6419	0.01	2.0%
Van Buren City	19,022,090	0.1379		0.1379		
Washington Township	15,515,770	0.2083		0.2083		
M.C.C. School Corp.	752,593,136	4.5996	4,300,440	4.5735	0.03	0.6%
Bean Blossom Township						
Bean Blossom Township	13,336,885	0.2769		0.2769		
Stinesville	(see below)	0.0402		0.0402		
Elletsville	24,668,390	2.3618		2.3618		
Richland Township						
Richland Township	101,314,279	0.2994	14,101,685	0.2628	0.04	13.9%
Richland City	4,226,600	0.0344	900,000	0.0284	0.01	21.3%
Ellettsville	(see above)	0.0344		0.0344		
Stinesville	392,565	1.9256		1.9256		
RBBC School Corp.	143,938,719	4.0634	15,001,685	3.6799	0.38	10.4%
County	896,531,855	2.0651	19,302,125	2.0216	0.04	2.2%
State levies	896,531,855	0.0100	19,302,125	0.0098	0.00	2.2%
Solid Waste District	896,531,855	0.0846	19,302,125	0.0828	0.00	2.2%
Library	896,531,855	0.5070	19,302,125	0.4963	0.01	2.2%
City of Bloomington	455,048,221	3.7245	3,563,835	3.6956	0.03	0.8%
Bloomington Transit	(Was not yet created)					
Perry Clear Creek Fire	111,150,365	0.4172		0.4172		

Table 3: Effect of Property Tax Abatements on Tax Rates in Monroe County, Indiana, 2000

Taxing Unit	NAV	Rates $100	PTAs	Rates W/Out PTAs $100	PTA Tax Inc. $100	% Inc.
Benton Township	26,422,770	0.3237		0.3237		
Bloomington Township						
Bloomington Township	51,426,436	1.0915	476,320	1.0815	0.01	0.9%
Bloomington City	159,807,302	0.1011	787,185	0.1006	0.00	0.5%
Clear Creek Township	39,818,689	0.2168		0.2168		
Indian Creek Township	8,600,425	0.5499		0.5499		
Perry Township						
Perry Township	78,231,725	0.1258	298,900	0.1253	0.00	0.4%
Perry City	280,458,602	0.1258	772,505	0.1255	0.00	0.3%
Polk Township	1,907,015	1.3300		1.3300		
Salt Creek Township	16,536,910	0.1242		0.1242		
Van Buren Township						
Van Buren Township	76,094,075	0.6611	1,031,580	0.6523	0.01	1.4%
Van Buren City	21,867,910	0.1526	1,059,810	0.1455	0.01	4.8%
Washington Township	16,365,168	0.2885		0.2885		
M.C.C. School Corp.	777,537,027	4.7216	4,426,300	4.6949	0.03	0.6%
Bean Blossom Township						
Bean Blossom Township	13,871,500	0.2849		0.2849		
Stinesville	(see below)	0.0414		0.0414		
Elletsville	26,190,510	2.3375		2.3375		
Richland Township						
Richland Township	99,035,105	0.3263	11,396,370	0.2926	0.03	11.5%
Richland City	7,263,560	0.0358		0.0358		
Ellettsville	(see above)	0.0358		0.0358		
Stinesville	399,810	2.0853		2.0853		
RBBC School Corp.	146,760,485	4.7731	11,396,370	4.4292	0.34	7.8%
County	924,297,512	2.0569	15,822,670	2.0223	0.03	1.7%
State levies	924,297,512	0.0100	15,822,670	0.0098	0.00	1.7%
Solid Waste District	924,297,512	0.0871	15,822,670	0.0856	0.00	1.7%
Library	924,297,512	0.5181	15,822,670	0.5094	0.01	1.7%
City of Bloomington	469,397,374	3.7233	2,619,500	3.7026	0.02	0.6%
Bloomington Transit	469,397,374	0.1531	2,619,500	0.1523	0.00	0.6%
Perry Clear Creek Fire	118,050,414	0.5545	298,900	0.5531	0.00	0.3%

Tables and Figures

Table 4: Effect of Property Tax Abatements on Tax Rates in Monroe County, Indiana, 2001

Taxing Unit	NAV	Rates $100	PTAs	Rates W/Out PTAs $100	PTA Tax Inc. $100	% Inc.
Benton Township	27,569,705	0.3417		0.3417		
Bloomington Township						
Bloomington Township	54,495,316	1.4613	450,600	1.4493	0.01	0.8%
Bloomington City	162,187,022	0.1026	855,915	0.1021	0.00	0.5%
Clear Creek Township	41,335,755	0.2197		0.2197		
Indian Creek Township	8,923,015	0.5293		0.5293		
Perry Township						
Perry Township	73,820,790	0.1067	289,990	0.1063	0.00	0.4%
Perry City	299,314,158	0.1067	411,860	0.1066	0.00	0.1%
Polk Township	2,001,770	1.3739		1.3739		
Salt Creek Township	16,793,277	0.1270		0.1270		
Van Buren Township						
Van Buren Township	77,629,040	0.6757	1,406,180	0.6637	0.01	1.8%
Van Buren City	21,882,920	0.1560	904,900	0.1498	0.01	4.1%
Washington Township	16,672,548	0.2816		0.2816		
M.C.C. School Corp.	802,625,316	4.6495	4,319,445	4.6246	0.02	0.5%
Bean Blossom Township						
Bean Blossom Township	14,664,956	0.2734		0.2734		
Stinesville	(see below)	0.0392		0.0392		
Elletsville	27,031,190	2.3297		2.3297		
Richland Township						
Richland Township	95,807,577	0.3395	10,659,180	0.3055	0.03	11.1%
Richland City	8,072,355	0.0370		0.0370		
Ellettsville	(see above)	0.0370		0.0370		
Stinesville	491,990	1.7331		1.7331		
RBBC School Corp.	146,068,068	4.6344	10,659,180	4.3192	0.32	7.3%
County	948,693,384	1.6087	14,978,625	1.5837	0.03	1.6%
State levies	948,693,384	0.0100	14,978,625	0.0098	0.00	1.6%
Solid Waste District	948,693,384	0.0878	14,978,625	0.0864	0.00	1.6%
Library	948,693,384	0.4967	14,978,625	0.4890	0.01	1.6%
City of Bloomington	491,456,455	3.6472	2,172,675	3.6311	0.02	0.4%
Bloomington Transit	491,456,455	0.1492	2,172,675	0.1485	0.00	0.4%
Perry Clear Creek Fire	115,156,545	0.5171	289,990	0.5158	0.00	0.3%

Table 5: Effect of Property Tax Abatements on Tax Rates in Monroe County, Indiana, 2002

Taxing Unit	NAV	Rates $100	PTAs	Rates W/Out PTAs $100	PTA Tax Inc. $100	% Inc.
Benton Township	29,121,960	0.3546	11,417	0.3545	0.00	0.0%
Bloomington Township						
Bloomington Township	55,790,888	1.4655	365,983	1.4559	0.01	0.7%
Bloomington City	166,723,616	0.1053	954,555	0.1047	0.00	0.6%
Clear Creek Township	43,446,100	0.2208	5,933	0.2208	0.00	0.0%
Indian Creek Township	9,351,487	0.5151		0.5151		
Perry Township						
Perry Township	81,046,732	0.1116	246,257	0.1113	0.00	0.3%
Perry City	305,987,905	0.1116	314,148	0.1115	0.00	0.1%
Polk Township	2,121,703	1.3683		1.3683		
Salt Creek Township	17,284,072	0.1632		0.1632		
Van Buren Township						
Van Buren Township	80,022,196	0.7146	2,600,207	0.6921	0.02	3.2%
Van Buren City	22,558,383	0.1671	735,670	0.1618	0.01	3.3%
Washington Township	18,060,453	0.2679		0.2679		
M.C.C. School Corp.	831,515,496	4.7178	5,234,171	4.6883	0.03	0.6%
Bean Blossom Township						
Bean Blossom Township	14,907,215	0.2784		0.2784		
Stinesville	(see below)	0.0408		0.0408		
Elletsville	27,629,190	2.4354	102,100	2.4264	0.01	0.4%
Richland Township						
Richland Township	101,486,112	0.3222	12,654,252	0.2865	0.04	12.5%
Richland City	8,330,757	0.0351		0.0351		
Ellettsville	(see above)	0.0351		0.0350		
Stinesville	411,067	1.9683		1.9683		
RBBC School Corp.	152,764,341	4.5777	12,756,352	4.2249	0.35	8.4%
County	984,279,836	1.6155	17,990,522	1.5865	0.03	1.8%
State levies	984,279,836	0.0099	17,990,522	0.0097	0.00	1.8%
Solid Waste District	984,279,836	0.1098	17,990,522	0.1078	0.00	1.8%
Library	984,279,836	0.4935	17,990,522	0.4846	0.01	1.8%
City of Bloomington	503,600,662	3.6261	2,004,373	3.6117	0.01	0.4%
Bloomington Transit	503,600,662	0.1506	2,004,373	0.1500	0.00	0.4%
Perry Clear Creek Fire	124,492,832	0.4896	252,190	0.4886	0.00	0.2%

Note: In order to make 2002 numbers comparable with prior years, NAV, PTAs and rates have been adjusted to reverse the shift from fractional assessment to true tax value.

Tables and Figures

Table 6: Tax (Capital Cost) Savings—Average Single Family Housing Property Location: Perry Township-Bloomington City

		1998	1999	2000	2001	2002
AV (on investment)		12,930	12,930	12,930	12,930	38,790
Abatement		12,930	12,280	10,340	8,400	19,400
Tax Rate ($100)	x	10.9779	11.0698	11.3959	10.7558	3.6116
Hypothetical Tax Liability		1,419	1,431	1,473	1,391	1,401
Actual Tax Liability		-	72	295	487	700
Annual Saving		**1,419**	**1,359**	**1,178**	**903**	**701**
Total Savings						
PV_{2002}, r=.05						**6,247**

Notes: (1) The sharp rise in AV and abatements, and the sharp drop in tax rates in year 2002 are due to the statewide change from fractional assessment to true tax value. (2) The discount rate of 5% is chosen because it approximates long term borrowing costs for the City of Bloomington.

Table 7: Tax (Capital Cost) Savings—Average Apartment Property Location: Perry Township-Bloomington City

		1998	1999	2000	2001	2002
AV (on investment)		58,830	58,830	58,830	58,830	176,490
Abatement		58,830	55,890	47,060	38,240	88,250
Tax Rate ($100)	x	10.9779	11.0698	11.3959	10.7558	3.6116
Hypothetical Tax Liability		6,458	6,512	6,704	6,328	6,374
Actual Tax Liability		-	325	1,341	2,215	3,187
Annual Saving		**6,458**	**6,187**	**5,363**	**4,113**	**3,187**
Total Savings						
PV_{2002}, r=.05						**28,431**

Notes: (1) The sharp rise in NAV and abatements, and the sharp drop in tax rates in year 2002 are due to the statewide change from fractional assessment to true tax value. (2) The discount rate of 5% is chosen because it approximates long term borrowing costs for the City of Bloomington.

Tables and Figures

Table 8: Tax (Capital Cost) Savings—Average Commercial/Warehousing Property Location: Bloomington Township -Bloomington City Taxing District

		1997	1998	1999	2000	2001	2002
AV (on investment)		306,160	306,160	306,160	306,160	306,160	918,480
Abatement		306,160	290,850	244,930	199,000	153,080	367,390
Tax Rate ($100)	x	10.9241	10.9723	11.0907	11.3712	10.7517	3.6095
Hypothetical Tax Liability		33,445	33,593	33,955	34,814	32,917	33,153
Actual Tax Liability		0	1,680	6,791	12,185	16,459	19,892
Annual Saving		**33,445**	**31,913**	**27,164**	**22,629**	**16,459**	**13,261**
Total Savings							
PV_{2002}, r=.05							**168,413**

Notes: (1) The sharp rise in AV and abatements, and the sharp drop in tax rates in year 2002 are due to the statewide change from fractional assessment to true tax value. (2) The discount rate of 5% is chosen because it approximates long term borrowing costs for the City of Bloomington.

Tables and Figures

Table 9: Tax (Capital Cost) Savings—Small and Large Manufacturing Property

a. *Small Manufacturing Property, Location: Van Buren Township Taxing District*

		1995	1996	1997	1998	1999	2000	2001	2002
AV (on investment)		128,059	128,167	128,073	128,005	127,951	127,911	127,891	383,672
Per. Prop. Abatement		270	260	240	220	200	160	120	270
Real Estate Abatement		127,789	121,400	102,230	83,060	63,900	51,120	38,340	76,680
Tax Rate ($100)	x	7.7266	7.4876	7.734	7.7743	7.9208	8.0548	7.5284	2.5537
Hypothetical Tax Liability		9,895	9,597	9,905	9,952	10,135	10,303	9,628	9,798
Actual Tax Liability		0	487	1,980	3,477	5,058	6,172	6,733	7,833
Annual Saving		**9,895**	**9,109**	**7,925**	**6,474**	**5,077**	**4,131**	**2,895**	**1,965**
Total Savings									
PV_{2002}, r=.05									**59,551**

Notes: (1) The sharp rise in AV and abatements, and the sharp drop in tax rates in year 2002 are due to the statewide change from fractional assessment to true tax value. (2) The discount rate of 5% is chosen because it approximates long term borrowing costs for the City of Bloomington.

Tables and Figures

b. *Large Manufacturing Property, Location: Richland Township Taxing District*

	1990	1991	1992	1993	1994	1995	1996
AV (on investment)	2,480,610	3,338,842	3,574,739	5,645,044	10,122,547	15,002,175	20,520,315
Personal Prop. Abatement	2,145,580	1,886,300	2,222,950	3,600,940	7,507,800	9,472,040	14,872,360
Real Estate Abatement							
Property 1						1,063,800	1,308,560
Property 2				537,120	510,265	429,700	348,940
Property 3	335,030	318,278	268,025	217,770	167,515	134,010	105,740
Tax Rate ($100) x	6.4375	6.1936	6.7584	6.9525	7.4270	7.6800	7.0836
Hypothetical Tax Liability	159,689	206,795	241,595	392,472	751,802	1,152,167	1,453,577
Actual Tax Liability	-	70,252	73,245	89,633	143,859	299,722	275,178
Annual Saving	**159,689**	**136,543**	**168,350**	**302,839**	**607,943**	**852,445**	**1,178,399**

	1997	1998	1999	2000	2001	2002
AV (on investment)	20,451,098	15,295,095	12,466,590	11,155,694	9,771,459	20,960,489
Personal Prop. Abatement	14,098,920	11,006,510	7,043,760	7,797,600	6,181,450	18,544,350
Real Estate Abatement						
Property 1	1,101,940	895,330	688,715	550,970	413,230	826,460
Property 2	268,415	214,732	161,049	107,370	53,680	80,520
Property 3	70,490	35,250	17,620			
Tax Rate ($100) x	7.6499	7.3590	7.0295	7.7715	7.1771	2.3762
Hypothetical Tax Liability	1,564,489	1,125,566	876,339	866,965	701,307	498,063
Actual Tax Liability	375,712	231,313	320,225	209,811	224,148	35,861
Annual Saving	**1,188,776**	**894,253**	**556,114**	**657,153**	**477,159**	**462,203**
Total Savings						
PV_{2002}, r=.05						**9,876,880**

Notes: (1) The sharp rise in AV and abatements, and the sharp drop in tax rates in year 2002 are due to the statewide change from fractional assessment to true tax value. (2) The discount rate of 5% is chosen because it approximates long term borrowing costs for the City of Bloomington.

Tables and Figures

Table 10: Tax (Capital Cost) Savings for a Hypothetical Real Estate Investment of $300 in Monroe County IN, Richland Township Taxing District.

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
AV		100	100	100	100	100	100	100	100	100	300
Abatement		100	95	80	65	50	40	30	20	10	15
Tax rate ($100) x		6.95	7.43	7.68	7.08	7.65	7.36	7.03	7.77	7.18	2.38
Hypo. Tax Liability		6.95	7.43	7.68	7.08	7.65	7.36	7.03	7.77	7.18	7.13
Actual Tax Liability		0	0.37	1.54	2.48	3.82	4.42	4.92	6.22	6.46	6.77
Savings (current $)		6.95	7.06	6.14	4.60	3.82	2.94	2.11	1.55	0.72	0.36
Savings PV (r=.05)	30.54										
Savings/Investment	10%										
Savings/AV	31%										

Note: For purposes of calculating the Savings/AV ratio, the AV for year 2002 was adjusted to reverse the shift from fractional assessment to true tax value (since such a reversal also implies correspondent modifications to abatements and rates, the adjustment does not affect savings).

Tables and Figures

Table 11: Tax (Capital Cost) Savings for a Hypothetical "Pool 3" (useful life of 9-12 years) Personal Property Investment of $300, in Monroe County IN, Richland Township Taxing District, Depreciated under "Old Reg. 16"

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Depreciation Schedule		40%	60%	55%	45%	37%	30%	25%	20%	16%	12%
AV		40	60	55	45	37	30	25	20	16	36
Abatement Schedule		100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Abatement		40	54	44	31.5	22.2	15	10	6	3.2	3.6
Tax rate ($100)		6.95	7.43	7.68	7.08	7.65	7.36	7.03	7.77	7.18	2.38
Hypo. Tax Liability		2.78	4.46	4.22	3.19	2.83	2.21	1.76	1.55	1.15	0.86
Actual Tax Liability		0	0.45	0.84	0.96	1.13	1.10	1.05	1.09	0.92	0.77
Savings (current $)		2.78	4.01	3.38	2.23	1.70	1.10	0.70	0.47	0.23	0.09
PV (r=.05)	14.21										
Savings/Investment	5%										
Savings/Av. AV	42%										

Note: For purposes of calculating the Savings/Av. AV ratio, the AV for year 2002 was adjusted to reverse the shift from fractional assessment to true tax value (since such a reversal also implies correspondent modifications to abatements and rates, the adjustment does not affect savings).

Tables and Figures

Figure 1: Monroe County IN Property Tax Abatements by Type of Property

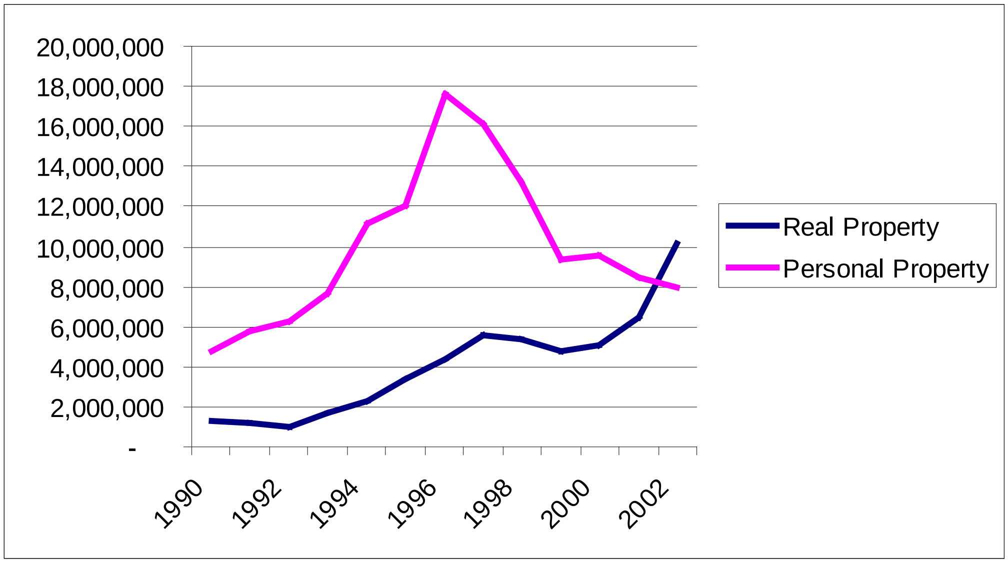

Figure 2: Monroe County IN Property Tax Abatements by Use of Property