

**TAX INCREMENT FINANCING
THE TIF ADOPTION DECISION
FOR LOCAL GOVERNMENT**

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Abstract: This research paper addresses the question of the adoption decision by municipalities of tax increment financing (TIF) and what factors motivate municipalities to create TIF districts. TIF is a tool for economic development used by local governments. The public expenditures in a TIF district are financed from the increment in property taxes that result from the increased property valuations in the district. The intent of the state statutes is that the public expenditures will result in growth in property values through new construction of projects by the private sector. TIF incentive packages have taken on a significant role and use by local governments to attract business expansion. This paper examines tax increment financing in local communities and provides research into the adoption decision of TIF districts by local governments. The research project chose eleven independent variables to ascertain their value in predicting the adoption of TIF districts by municipalities in the Chicago metropolitan region. The intent is to determine the relationship between the existence of TIF districts and the financial condition of local governments. The hypothesis is that communities experiencing greater fiscal stress are more likely to adopt TIF.

Introduction

The question addressed in this paper is the adoption decision by municipalities of tax increment financing (TIF) and what factors motivate municipalities to create TIF districts. Tax increment financing is a tool for economic development used by local government. It is a tool that is financed on a local basis without direct subsidy from higher levels of government. The expenditures in a TIF district are financed from the increment in property taxes that result from increased property valuations in the district. The policy intent of the legislation creating tax increment financing is that the public expenditures in the district will result in growth in the property valuation through new construction of projects by the private sector.

The policy relevance of the fiscal impact of tax increment financing has become significant for taxpayers and governments in many states in the United States. In the 1980's, the federal government's role in aiding local units of government in economic development efforts was reduced and virtually eliminated under the Reagan administration. Local governments were left with one major financial tool for economic development efforts, the creation of tax increment financing districts. TIF incentive packages have taken on a significant role and use by local governments to attract business expansion. The initial utilization of TIF began in California in the early 1950's. However, wide spread use of this financial tool in most states did not take place until the 1970's. As of 2000, forty-eight states have adopted legislation authorizing local governments to create TIF districts. The use of TIF varies from minimal in some states and localities to a significant percentage of the market value being captured in many local governments. Municipalities in California have up to seventeen percent of the tax base captured by TIF districts (Chapman, 1998). Tax increment districts in Minnesota received \$279 million in taxes payable in 1993 that constituted nine percent of the total property value of the

cities and towns containing property tax increment districts (Johnson, 47). In some states, the captured value in districts exceeds the original base value of the district (Johnson, 48). In northeastern Illinois, the growth in TIF districts has been significant. In 1984, there were ten districts in the six county region. That number had risen to 194 by 1994 (Calia, 1997) and 385 by 2002 (Illinois Tax Increment Association, 2002). With the tremendous increase in the use of TIF, the potential for abuse in the adoption decision also increases. The research question that will be addressed is whether any specific fiscal stress factors are more predominant in municipalities that make the decision to adopt TIF districts as an economic development incentive for private developments as compared to the municipalities that do not adopt TIF districts.

State governments are impacted through their transfer payments to local governments, primarily to school districts, to equalize the expenditures for education of children across the state. The level of state transfer payments to schools are determined by the level of equalized assessed value in the local district. The state makes higher payments to school districts with lower equalized assessed valuations per student to ensure more equality in educational opportunities in these districts with lower financial capacity. If an inappropriate use of TIF exists in the local government, removing the assessed valuation from the taxing authority of the school district, the state may be providing greater levels of transfer payments for expenditures on education than justified on an equity basis. In this instance, the city government has captured the total tax rate on the new assessed valuation for developmental expenditures with the state replacing some of the lost revenue through transfer payments. Additionally, the federal government and taxpayers are affected by the use of tax-free interest bonds in TIF districts. The federal treasury foregoes income taxes on the interest paid on TIF bonds affecting the federal

budget and the taxpayers on the federal level. Between 1990 and 1995, there were over \$10 billion of tax-exempt tax increment revenue bonds issued for 819 projects in 27 states (Johnson, 50). While seven states accounted for 96 percent of the total dollar amount of TIF bonds sold, California was, by far, the most active constituting 80 percent of the market (476 issues for \$8.2 billion) with Minnesota in second place with 97 issues and a total over \$487 million.

TIF legislation differs from state to state in the specifics of the criteria needed to meet the requirements to create a district. Amendments to the original legislation have been undertaken in many states to prevent alleged abuses of TIF. Even with the attention given to this subject in many states and localities, the debate continues as to the fiscal impact of TIF on all units of government. Many states continue to consider amendments to TIF legislation to further refine the laws to implement the intentions of the policy makers. It is important that the analysis of the use of TIF is comprehensive so that legislation eliminating abuse is enacted and so that unwarranted restrictive legislation thwarting economic development is not enacted. Evaluation must be able to measure the true impact of the use of this financing program along with its impact on other units of government. The results of future analyses will undoubtedly be used for additional initiatives to amend tax increment financing laws. This paper examines the relationship between fiscal stress and the decision by the municipality to create tax increment districts to ascertain if there is any relationship between the adoption of TIF districts and eleven independent variables measuring economic and financial condition of municipalities. The independent variables were selected after a review of the existing literature on the TIF adoption decision by municipalities to build upon the research that has taken place in the field. In addition, the selection of the variables was based on factors that would help to show that TIF adoption is occurring in concert with the policy objectives of the TIF legislation or that potential

abuse of the utilization of TIF may exist. A review of the literature is presented in the next section and then the framework for the model utilized in this regression analysis is further explained in the following section.

Literature Review

While there is a great deal of literature that exists on the subject of tax increment financing, only a few pieces of literature directly address the issue of the adoption decision of a tax increment district by a municipality. A review of this literature will be undertaken in this section.

A study of 255 Michigan cities of which 63 had established TIF districts found that population growth was a significant predictor of TIF adoption (Anderson, 1990). The adoption of a TIF plan was also associated with a faster growth in property value that appeared related to the population growth. However, the property tax rate did not have a predictive value on the likelihood of the adoption of a TIF district. The impact of growth on the adoption of TIF district does not address the direction of causality of the adoption. The question remained as to whether the TIF caused the growth or whether the growth caused the adoption of the TIF districts by municipal officials to help finance the costs of infrastructure.

Another research project developed a model to examine the direct effect of TIF programs on property value growth by comparing pre-TIF to post-TIF property value changes in Indiana communities (Man and Rosentraub, 1998). Their study provided empirical evidence that supported the premise that the adoption of a TIF program stimulated property value in the TIF district and the surrounding community. The project utilized independent variables to project the adoption of TIF districts in cities in Indiana. The independent variables that were statistically significant in the adoption decision were declining per capita state aid, total population size of a

community and concentration of service industries in a particular city. The degree of reliance on property taxes, the level of the property tax rate and variables measuring the extent of blight in the community (poverty rate, unemployment rate, vacancy rate and rental occupied units) were not related to the adoption decision by the municipality. In Indiana, “median owner-occupied housing value in TIF-adopting cities was 11% greater than in non-TIF-adopting cities” (Man and Rosentraub, 1998:541).

Man (1999) later expanded upon this study using a probit model of municipal adoption decisions drawing from the data set of 150 cities in Indiana of which 29 cities had created at least one TIF district. The model further expanded upon the data set with information relating to fiscal stress, economic conditions, neighboring cities use of TIF, existing economic development programs and city/median voter characteristics. Once again, the data indicated that cities with declining real per capita state aid over the years prior to the adoption of a TIF district and those with a higher level of service industries were more likely to adopt the TIF. In addition, the existence of increasing property tax liability per capita in the years prior to the TIF adoption was statistically higher in cities that adopted TIF districts. The share of property taxes paid by the median value homeowners had a negative effect on the TIF adoption decision. TIF appeared to be an alternate to additional increases in property taxes by the municipality. Cities that had higher per capita incomes and greater percentages of senior citizens were less likely to adopt TIF than cities with lower incomes. Also, cities that were located adjacent to other TIF adopting cities were more likely to adopt their own TIF district(s). Mann (1999:1165) suggests that this lends support for the “competitive adoption theory that cities mimic their neighbors’ behavior to remain competitive in their bidding for private capital investment.” The model made positive conclusions about the impact of TIF on growth of property values.

Dye and Merriman (2000) created a TIF adoption model in their study of the Chicago metropolitan area. While the main focus of their study was the effect of TIF on growth, they created variables to measure their theory that TIF adoption was a function of pre-adoption growth rates, fiscal structure, municipality type and location. Their data set encompassed 93 TIF adopting municipalities out of the 247 municipalities in the region and measured thirteen variables linking property tax, sales tax, population, and other information for each municipality, each TIF district, and all other local governments in the region. The municipal tax rate had a positive influence on TIF adoption, as did the variable of population. In addition, the cities with a larger share of non-residential property were significantly more likely to adopt a TIF district. They also found that location played a role only in that cities in the most distant two counties from the central city were unlikely to adopt TIF districts. None of the other variables such as poverty, per capita income, non-municipal tax rates, or home rule status had a statistically significant impact on the adoption decision.

A recent study of catalysts of TIF adoption looked at the adoption in the state of Maine (LaPlante, 2001). Cities in Maine have adopted 72 TIF districts within the nine-year period studied by the researcher while the preceding 11 years had resulted in the adoption of only nine districts. This study found that municipal tax burden was a significant predictor of TIF adoption by a city. The total tax rate was a strong predictor. In addition, the business share of the property tax base was a significant predictor of TIF adoption. This would be similar to the findings by Dye and Merriman of the predictive nature of non-residential assessed value. The presence of a high percentage of elderly also served to a negative predictor of TIF adoption in the Maine study as it was in Indiana (Man, 1999). The Maine study indicated that fiscal pressures were significant predictors of the TIF adoption decision.

While the research on the TIF adoption decision by municipalities has been diverse, there are some similarities in the findings in the five studies addressed in this section. A summary of the findings is presented in the following table. The variables, which have an impact on the adoption decision in a positive or negative direction, are shown as a Yes while those variables, which the authors identified as not having an impact on the adoption decision, are shown as a No.

Variable	Anderson	Man& Rosentraub	Man	Dye& Merriman	LaPlante
Population		Yes		Yes	
Population Growth	Yes				
Property Value Growth	Yes				
Property Tax Rate		No		Yes	Yes
Degree of Property Tax Reliance		No			
Lower Residential Tax Share			Yes	Yes	Yes
Increasing Tax Liability			Yes		
Declining State Aid per Capita		Yes	Yes		
Service Industry Concentration		Yes	Yes		
Blight		No		No	
Income per Capita			Yes	No	
% Senior Citizens			Yes		Yes
Home Rule Status				No	
Neighboring TIF Cities			Yes		

The results of these research efforts were taken into consideration in the development of the independent variables in the following framework and model.

Framework and Model

This research project addresses the TIF adoption decision by municipalities in the Chicago metropolitan area. Eleven independent variables are utilized to study the propensity to adopt tax increment financing districts by municipalities. The independent variables were developed after

review of the literature on the TIF adoption decision in the previous section, a review of other TIF studies and further refinement of the variables to make them applicable to the Chicago region (Anderson, 1990, Man and Rosentraub, 1998, Man, 1999, Dye and Merriman, 2000, Dardia, 1998, LaPlante, 2000 and Hendrick, 2001). Dardia and Hendrick did not specifically analyze TIF adoption decisions but did utilize independent variables in their analyses of TIF issues. The model created in this paper provides a framework to help address the central question for this project outlined above. The intent is to determine if the creation of TIF districts can be predicted based on other financial information available on the municipality.

The following table gives a full definition for each of the independent variables and a hypothesis as to its impact on the decision whether to adopt a TIF district by a municipality.

Table 1
Variables for Tax Increment Financing Adoption Decision

Dependent Variable

* TIF Adoption Status (TIF Status) – This dummy variable is a dichotomous variable that describes whether a city/village has created a tax increment-financing (TIF) district. The variable is listed as a 1 if the city/village has adopted a TIF district and a 0 if they have not as of 1998.

External Environment Variables

* Population Density per Square Mile (DENS90) – This variable measures the degree of population density in the city/village. It is expected that the greater the density, the more likely a municipality would be to create a TIF district due to pressures for redevelopment and rehabilitation in the city.

* Income per Capita in 1989 (INCMPC89) – This variable is a measurement of the level of income in the community per capita as differentiated from their neighboring communities. It is expected that a low-income community would be more likely to create TIF districts due to fewer alternatives available for financial resources to the community.

* Equalized Assessed Valuation/Density (EAVDENS) – This is a measure of the amount of equalized assessed value (EAV) per square mile. It measures the level of property development as measured by assessed valuation of the property already in place in a community. It is anticipated that a higher level of EAV density would create a greater incentive to create a TIF district in order to redevelop the aging infrastructure of the area. High levels of EAV density are usually attributable to commercial/industrial properties since expensive residential properties are also in low-density areas outside the central city.

* Collapsed Region with South, Southwest and West Cook County = 1, Rest of Metro = 0 (DUM3) - There is greater level of poverty and need for rehabilitation in the parts of the metropolitan area noted above so it is anticipated that there would be greater propensity to create tax increment districts in those areas.

Internal Municipal Variables

* Home Rule Communities (HOMERULE) – The attainment of home rule status in Illinois gives a city/village a greater financial degree of discretion in the raising of taxes and fees for services. A home rule community faces less fiscal stress than a non-home rule community if all other factors are equal. Less fiscal stress would result in less pressure to utilize TIF for developmental purposes.

* Average Unrestricted Fund Balance as a Percent of Governmental Revenues (AVGUFBP1) – Cities and villages with higher levels of fund balances as a percentage of revenues have more fiscal flexibility to meet emergencies and changes in economic conditions. Usually, it also reflects a greater capacity to raise revenues for services and less fiscal stress. It is expected that a lower percentage of fund balances as a percent of governmental revenues will result in greater TIF utilization.

* Average Sales Tax Revenue per Capita (AVG202PC) – There may be a greater level of initiative by communities that have low sales taxes per capita to create TIF districts to receive a greater share of sales taxes. However, low sales tax per capita communities may not recognize the benefits that this revenue source yields or prefer to be without the side effects of the commercial impacts of the generators of these taxes.

* Total Expenditures per Capita (AVG270PC) – The level of total expenditures per capita is an indicator of fiscal stress in a city or village. The greater the level of expenditures, the more pressure on the municipality to find alternative sources of revenue to finance the expenditures such as tax increments.

* Average General Obligation Debt per Capita (AVG419PC) – The level of general obligation (GO) debt per capita is another measure of fiscal stress in a community. The GO debt levy increases the overall tax levy and creates an incentive to stimulate growth to spread the levy across greater assessed valuation. In addition, there is an incentive to create a TIF district to issue debt that can be paid for from TIF revenues rather than GO levies.

* Non-Residential Equalized Assessed Valuation (NORESEAV) – The greater impact of most tax increment financing districts is the creation of industrial and commercial valuation. The cost benefit ratio of industrial/commercial property is normally more beneficial than residential property. Communities with a low non-residential EAV have an incentive to create more industrial/commercial property. Alternatively, a residential community may desire to exclude all industrial and commercial development to preclude the environmental effects of the properties.

* City Manager Government =1, all others =0 (FORMGOV4) – City manager forms of government have a higher level of professionalism and a greater level of knowledge of the availability of development and redevelopment tools. The initiative to create a TIF district along with the knowledge base of how to do so would be more prevalent in a city management form of government.

Previous research has shown population and population growth to be a predictor of the TIF adoption decision. While population by itself was explored for this model, it did not prove to have any statistically significant impact in this database. The variable of population density per square mile was used as a further refinement of the impact of population on the TIF adoption decision. Income per capita had a positive impact on the adoption decision in one of the previous studies and was not significant in another study so it was included in this analysis to determine its impact in this region. The variable related to the percentage of residential and non-residential assessed valuation was significant in three of the studies and was included in this analysis with an expectation that it would be significant. Equalized assessed value per square mile is included in this analysis to assess the impact of assessed valuation concentration that has not been addressed in the other studies.

The collapsed region included in this analysis is both a measure of blighting (found not to be significant in two other studies) common to this area of Cook County and the use of TIF by neighboring cities that was found to be significant in one of the other research efforts. This analysis includes the variable of home rule status even though the other study on the Chicago region indicated that home rule was not a predictor variable. The issue of reformed government is also measured by this analysis and it does not appear in the other studies. Finally, this analysis goes into greater depth than any of the other research efforts on the internal fiscal pressures facing municipalities through the use of four variables measuring that level of fiscal stress (average unrestricted fund balance as a percent of governmental revenues, average sales tax revenue per capita, total expenditures per capita, and average general obligation debt per capita). This internal fiscal stress area has not been examined in other studies in this level of depth probably due to the database needed for the analysis.

The model used in this research project utilizes a quantitative approach to compare recent data on financial conditions of local governments for municipalities that adopt TIF districts to those municipalities that do not adopt TIF districts in the northeastern Illinois region (excluding the City of Chicago). An existing data set developed by Dr. Rebecca Hendrick at the University of Illinois-Chicago encompasses comprehensive financial information on all the local governments in northeastern Illinois. It is possible with this data to review the levels of fiscal stress experienced by those local governments over a time series from 1988 through 1997. The model used in this analysis compares the fiscal stress of local governments adopting the TIF tool for economic development to the level of fiscal stress in the non-adopting municipalities.

The TIF Adoption Decision

The decision whether to adopt a TIF district or not is hypothesized to be a function of the combination of independent variables from the environment in which the municipality operates and others which are more internally related to the municipality as described in the previous section. The environmental variables are those that the municipality has little control over in the short term. The internal independent variables are the factors that are the results of financial and other decisions made within the municipality. The data utilized is for two hundred and sixty-one municipalities in the six county Chicago metropolitan area for the years 1988 through 1997. The direct source of the data is the Controller's Office of the State of Illinois as reported by the individual municipalities to that office. In general notation, it is hypothesized that:

$$***TIF Adoption = f(external environmental factors, internal municipal factors).***$$

The descriptive statistics for the independent variables are shown in Table 2.

Table 2**Descriptive Statistics**

	N	Minimum	Maximum	Mean		Std.	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error
Density: Pop90 / landarea	255	12.4	14610.0	3113.637	145.331	2320.754	5385901	1.623	.153
Income per capita in 1989	256	4,660	70,925	20,381.59	689.82	11,037.09	1.2E+08	2.219	.152
EAV density	255	689.90	239470.54	44307.35	2061.3007	32916.33	1.1E+09	1.583	.153
South, SW and West Cook=1, rest of metro=0	261	.00	1.00	.3257	2.906E-02	.4695	.220	.748	.151
Home rule communities	258	0	1	.29	2.83E-02	.45	.207	.927	.152
Avg. UNRES FB as % of govt rev- calc, 88-92	243	-8.0	273.6	56.314	2.673	41.673	1736.607	1.757	.156
Average sales tax rev per capita- corrected	259	.00	643.76	78.9141	5.6914	91.5941	8389.484	3.223	.151
Average expenditures per capita- corrected- 260	259	51.6	1,911.5	355.977	12.478	200.819	40328.397	2.807	.151
avg GO debt per capita,corr	261	.0	1711.1	195.241	13.736	221.916	49246.739	2.229	.151
Non-residential EAV	255	-413.46	97.86	55.2064	2.0319	32.4473	1052.826	-11.901	.153
Manager=1,all other=0	260	.00	1.00	.4769	3.104E-02	.5004	.250	.093	.151
Valid N (listwise)	234								

A binary logistics regression was run using the eleven independent variables included in the hypothesis as described above. The binary logistic regression was used rather than a linear regression due to the dependent variable being dichotomous. The logistics model transforms the dependent variable into one that has linear relationships with a set of independent variables. These models “estimate the linear determinants of the logged odds or logit rather than the nonlinear determinants of probabilities.” It is a required transformation in order to analyze the impact of these independent variables on the decision whether or not to adopt TIF by municipalities in the Chicago metropolitan region.

One of the outputs of a logistic regression model is the model of coefficients. The omnibus tests of model coefficients show whether or not all of the variables entered into the regression equation have a significant effect on predicting the dependent variable. The Chi-Square of 34.857 shown in Table 3 is significant at .000 with the eleven variables in the regression equation. This indicates that the total of the eleven variables used in this analysis are significant in predicting the adoption of TIF by a municipality.

Table 3

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	34.857	11	.000
	Block	34.857	11	.000
	Model	34.857	11	.000

In the logistic regression model, a Classification Table compares the predicted values for the dependent variable with the actual observed values in the data. As can be seen in the Classification Table shown as Table 4, the regression equation of eleven independent variables predicts the adoption or non-adoption of TIF correctly 68.3% of the time. Specifically, 69 of the 110 adopters and 88 of the 120 non-adopters were predicted correctly. These results indicate that the eleven variables taken as a whole have a significant predictive capability on the decision by the municipality whether or not to adopt a TIF district.

Table 4

Classification Table^a

Observed			Predicted		Percentage Correct
			TIF Status =1 for adoption		
			0	1	
Step 1	TIF Status =1 for adoption	0	88	32	73.3
		1	41	69	62.7
Overall Percentage					68.3

a. The cut value is .500

The results of the Model Summary in Table 5 show the -2 Log likelihood and the R Square for two different tests (Cox & Snell and Nagelkerke). These tests are used to indicate how well the model fits the data. Smaller -2 Log likelihood values indicate that the model fits the data better; a perfect model has a value of zero. The R Square indicates that between 14.1% and 18.8% of the dependent variable (adoption of TIF) can be accounted for by all the predictor variables in the equation. The R Square is not a high number but is adequate for the evaluation in this regression model.

Table 5**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	283.556	.141	.188

The effects of each of the individual independent variables on the decision to adopt TIF by a municipality are shown in Table 6. The constant variable is the intercept term in the equation and is not significant to the results in this model. The table shows the values for B (a weighting value used in the equation), the standard error of the dispersion of B and the Wald score. The Wald score is a measure of significance for the given variable; higher values in combination with the degrees of freedom indicate significance. The statistical significance of the Wald is also shown in the table. The final column Exp (B) is used in interpreting the meaning of the regression coefficients.

Table 6**Variables in the Equation**

Step		B	S.E.	Wald	df	Sig.	Exp(B)
1	DENS90	.000	.000	.323	1	.570	1.000
	INCMPC89	.000	.000	1.593	1	.207	1.000
	EAVDENS	.000	.000	8.220	1	.004	1.000
	DUM3	1.251	.318	15.472	1	.000	3.494
	HOMERULE	-.855	.395	4.693	1	.030	.425
	AVGUFBP1	-.007	.004	3.458	1	.063	.993
	AVG202PC	.003	.002	2.230	1	.135	1.003
	AVG270PC	-.002	.001	2.859	1	.091	.998
	AVG419PC	.002	.001	3.102	1	.078	1.002
	NORESEAV	-.004	.004	.736	1	.391	.996
	FORMGOV4	-.072	.310	.054	1	.816	.930
	Constant	-.564	.584	.934	1	.334	.569

a. Variable(s) entered on step 1: DENS90, INCMPC89, EAVDENS, DUM3, HOMERULE, AVGUFBP1, AVG202PC, AVG270PC, AVG419PC, NORESEAV, FORMGOV4.

The results of the logistic regression equation show that three of the predictor variables have Wald scores large enough with one degree of freedom to show significance at the .05 level

on the decision to adopt or not to adopt a TIF by the municipality. Three additional variables reach significance at the .10 level.

The most significant predictor of the TIF adoption decision is the dummy variable (DUM3) for the Collapsed Region. The South, Southwest and West areas of Cook County were given a value of 1 while the remainder of the metropolitan area was given a value of 0. These areas of Cook County are older and have lower levels of income than the remainder of the region. They have a greater need for redevelopment, which is the main policy goal for the creation of tax increment districts. The significance level of this independent variable is .000 with a Wald score of 15.472. The Exp (B) score of 3.494 can be interpreted to mean that the TIF adoption decision is 3.494 times as likely to occur in a municipality in the South, Southwest and West areas of Cook County as in a municipality outside of that area.

The second most significant predictor variable is that of Equalized Assessed Value Density. This independent variable measures the amount of assessed value per square mile of land within a municipality. As such, it is a measure of the intensity of development already existing in the community. The hypothesis of the variable is that the higher the concentration of assessed value, the greater would be the need for redevelopment and incentive for redevelopment in the area. With a Wald score of 8.220 and a significance of .004, this predictor variable rates very high on predicting the decision whether a municipality will adopt a TIF district.

The variable for Home Rule showed a negative relationship with the adoption of TIF and a Wald score of 4.693 with a significance of .030. The level of significance is high for this variable that is an indicator of a local government's ability to exert independent authority beyond that specifically given to it by State law. The hypothesis is that home rule municipalities are less likely to have fiscal stress due to the use of their proactive authority generated from home rule

powers. Home Rule is a predictor variable when included with the eleven variables in the regression equation. However, when a logistic regression is run for the top six variables, the Wald score for Home Rule drops to 3.315 with a significance of .069 and dropped further to a Wald score of 2.183 with a significance of .140 when the model was reduced to four variables. This is an indicator that the predictor quality of Home Rule by itself is not as great as the Collapsed Region and Equalized Assessed Value Density.

The predictor variable of Average Unrestricted Fund Balance as a Percentage of Governmental Revenues (AVGUFBP1) comes close to being significant at the .05 level in the overall regression model. It has a negative relationship with the adoption of TIF as was hypothesized. The Wald score of 3.458 has a significance of .063. It was hypothesized that the level of fund balance served as a measure of fiscal stress. Those municipalities with lower fund balances as a percentage of governmental revenues have a greater level of fiscal stress and were more likely to look to alternative funding sources for capital improvements such as tax increment financing. The variable drops to a Wald score of 2.047 and a level of significance of .153 when the model was reduced to six independent variables. In the overall model, it shows some moderate levels of significance.

The predictor variable of General Obligation (GO) Debt per Capita (AVG419PC) comes the next closest to being significant in the overall regression model. It has a Wald score of 3.102 with a significance of .078. Communities with a high level of GO debt were expected to utilize tax increment financing as a means of financing improvements that may be financially or politically infeasible because of their debt load. This variable dropped to a Wald of 2.8 for a significance of .089 when the regression model was reduced to six variables and it dropped further to a Wald of 2.445 with a significance of .118 when the model was reduced to four

variables. It is a predictor variable with moderate levels of significance when included in the larger regression equation.

The sixth predictor variable is Total Expenditures per Capita (AVG270PC) with a Wald score of 2.859 and a significance of .091. It is significant at the .10 level of significance. However, the relationship is a negative one with the higher levels of expenditures per capita being a negative predictor of the adoption of tax increment financing. The variable was thought to be a predictor of fiscal stress within a municipality since the higher the level of expenditure for each resident, the greater the level of tax effort that would be needed to support the services. This factor would be an indicator of need for additional development and the indication of a concentration of population requiring services provided by the developments. This would result in an incentive for the city or village to pursue development strategies that would include the use of tax increment financing. The negative relationship of this variable with the adoption decision does not fulfill the original hypothesis. When the six most significant variables are run in a separate model of logistic regression, the Wald score for Total Expenditures per Capita drops to 1.296 with a significance of .255. The significance in the total model is a factor of its relationship with other variables. When Tax Effort is substituted in the regression model in place of Total Expenditures per Capita, the overall prediction ability of the model drops slightly. Neither Tax Effort nor Total Expenditures per Capita are significant predictors of the adoption decision when examined independent of the other variables.

One of the predictor variables that were expected to be significant in the adoption decision was Non-Residential Equalized Assessed Valuation. It was expected that the higher the level of non-residential assessed value, the greater the concentration of industrial and commercial property that would result in the greater need for redevelopment over time. However, this

variable resulted in a Wald score of only .736 with a significance of .391 proving the hypothesis to be wrong.

Summary

While three of the predictor variables show significance in the logistic regression model at .05 significance and three additional at .10 significance when all eleven variables are included, only two of the variables show significance when they stand on their own. These two variables shown in Table 7 are Equalized Assessed Valuation Density and the Collapsed Region of South, Southwest and West Cook compared to the rest of the metropolitan area. The Chi-Square for the

Table 7
Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	EAVDENS	.000	.000	8.561	1	.003	1.000
	DUM3	1.001	.280	12.764	1	.000	2.720
	Constant	-1.005	.253	15.796	1	.000	.366

a. Variable(s) entered on step 1: EAVDENS, DUM3.

regression of the two variables compared to the eleven variables is 22.878. (compared to 34.857) with a significance of .000 but the R Square reduces to .087 and .116 (from .141 and .188) for the two different measures of the R Square. The Wald scores and significance remain very high as shown in the table. The level of significance remained below .05 and even below .01

The significance of the impact of Equalized Assessed Valuation Density and the location impact in the South, Southwest and West Cook County region on tax increment adoption are robust in this model. In addition, the significance of Home Rule, Average Unrestricted Fund Balance as a Percent of Governmental Revenues, Total Expenditures per Capita and General Obligation Debt per Capita should be considered in the total picture. The results show that TIF adoption by a municipality can be predicted based on the independent variables in the model. The association between the independent variables and the dependent variables does exist as

evidenced by the regression model; the independent variables occur prior to the adoption decision for TIF; and the relationship between the independent variables and the dependent variable is not spurious. There is some degree of causality between the predictor variables and the adoption decision for TIF. In reviewing the correlations table between the variables, there is some degree of multicollinearity between the eleven variables. This has a result of reducing the significance of the independent variables.

The results in this regression modeling differ from those reported in other articles on the adoption decisions of TIF in municipalities (Anderson, 1990, Man and Rosentraub, 1998, Man, 1999, Dye and Merriman, 1999, LaPlante, 2001). The tax burden proved to be significant predictors of TIF adoption in two of the studies (Man, 1999 and Dye & Merriman, 2000) and not significant in three studies (Anderson, 1990, Man and Rosentraub, 1998, LaPlante, 2001). The results of this study used expenditures per capita as a measure of tax effort and this variable was not significant in predicting TIF adoption. As previously noted, when a variables for tax effort was used in the model in replacement for total expenditures per capita, the predictability of the model was even less significant. Income per capita was significant in the Indiana study (Man, 1999) while it proved not significant in these findings as well as the other study of the Chicago region (Dye and Merriman, 2000). Location in the South, Southwest and West Cook County region proved significant predictors of TIF adoption in this study while the other study of the Chicago region showed that the location variable of the most outlying counties of Kane and McHenry were significant in the opposite direction.

The levels of blight proved not to be significant predictors in the Indiana and other Chicago region studies (Man and Rosentraub, 1998 and Dye and Merriman, 2000), yet these findings show the South, Southwest and West Cook County region where there is a greater

poverty level and a need for rehabilitation to be a significant predictor. The level of non-residential assessed valuation proved to be a significant predictor in the other Chicago region study while it was not in these findings. Finally, while population was a predictor in the Indiana study (Man And Rosentraub, 1998), the population density did not prove to be a predictor in these findings. An effort was made to utilize actual population in the model and it proved to not be significant which is also consistent with the findings of a third Illinois study (Redfield, 1995). Additional exploration of the respective databases would add insight to the differences in findings especially at it relates to the impact of municipal tax effort.

Further research into tax increment financing will require individual case studies in order to refine the reasons for adoption of tax increment financing districts. While quantitative analysis is a good means of predicting the overall reasons for adoption of TIF districts, a conclusive analysis should include qualitative research on representative case studies. It is only with this additional research that the issues surrounding the utilization of tax increment financing can be addressed in their entirety. The results of this regression model indicate that internal fiscal stress variables are not by themselves predictors of the TIF adoption decision. Municipalities do not adopt TIF solely because their internal financial conditions are in fiscal stress. The external variables measuring equalized assessed valuation per square mile and the region of Cook County experiencing more blighting influences are the stronger of the predictor variables. These results would be consistent with the original public policy objectives of the enabling legislation for tax increment financing in Illinois.

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