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A STUDY ON RELATIONSHIP BETWEEN LOCAL UTILIZATION OF MANUFACTURING PROPERTY TAX ABATEMENT AND LOCAL CONDITIONS IN MICHIGAN CITIES

By

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ABSTRACT

A Study on the Relationship between Local Utilization of Manufacturing Property Tax Abatement and Local Conditions in Michigan Cities

By

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This dissertation focuses on an evaluation of the property tax abatement system as a planning tool, one of the most widely practiced tax instruments designed to stimulate economic development and productive land use. These tax abatements are especially prevalent in large central cities and some suburban communities that surround them. Local officials hope to reverse their city's relative fiscal decline by exerting a measurable influence on a firm's location. Tax abatements reduce the price of land and capital for industry and thereby make investment opportunities in urban areas more attractive.

The purpose of this study is to discover the relationships between the use of property tax abatements and local fiscal and economic conditions. Given significant variation among cities in levels of economic development, it is reasonable to examine the use of tax abatement across a wide group of municipalities. Previous studies examining the tax abatement policy and its effectiveness have offered little discussion about why communities choose certain economic development policies over others and at what levels. In this study, I examine the relationship between local utilization of property tax abatement and local fiscal and economic conditions in Michigan cities. I also analyze the relationship of such factors as governmental structure, spatial variation, local policy, and social and structure conditions on local utilization of property tax abatement. This study

uses a multiple regression model to determine how local fiscal and economic performance levels relate to the utilization of property tax abatements in Michigan cities. A panel data set is used because a single cross-section of Michigan cities results in too small of a data set. The panel consists of four pooled cross sections beginning in 1977 and continuing in five-year increments up to 1992.

In the model, the dependent variable is the degree of local utilization of property tax abatement, which is measured in two ways: 1) per capita amount of cumulative real market value of manufacturing property tax base abated away (KTAP) and 2) numbers of manufacturing property tax abatement issued (TANO). Independent variables include local fiscal condition variables, local economic condition variables, and other environmental variables surrounding local governments.

The results of the empirical analysis show that communities with the greater revenue and tax base tend to use more the property tax abatement program whereas tax burden and reliance on property tax, which represent fiscal distress, is negatively related to the local utilization of property tax abatement. While communities with higher rates of median income change tend to grant property tax abatement more, cities with cycling as well as structural unemployment have difficulty utilizing the property tax abatement program. These empirical results imply that property tax abatement policy can create locational distortions and have undesirable equity consequences. Thus, it needs to control the property tax abatement policy to insure that local governments only offer abatements that are necessary to overcome local fiscal and economic needs.

dedicated to

my father, my mother,
wife and my children

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In many ways, I consider the achievement represented by this volume to be theirs as well as my own.

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CHAPTER I

INTRODUCTION

1.1. Statement of the Problem

Competition among state and local governments to attract industrial and commercial developments has become increasingly intense in recent years. This trend of interstate and interlocal competition may be partially due to the absence of a coherent spatial development policy at the national level. However, the effectiveness and impacts of these instruments on local communities and the nation as a whole are not clearly understood. Also, the increased use of local incentives has occurred with little or no empirical test of their effectiveness.

My dissertation focuses on an evaluation of the property tax abatement system as a planning tool, one of the most widely practiced tax instruments designed to stimulate economic development and productive land use. These tax abatements are especially prevalent in large central cities and some of the suburban communities that surround them. This can be attributed to local officials hoping to reverse their city's relative fiscal decline by exerting a measurable influence on intrametropolitan firm location. Tax abatements reduce the price of land and capital for industry and thereby make investment opportunities in urban areas more attractive.

The effectiveness of tax abatement policy is questionable. Recently local government officers, decision-makers, and researchers have questioned these tax incentives and tax abatements as visible strategies for promoting the local economy.

Despite research findings that question the sensitivity of firms' location decisions to local tax differentials, the use of tax abatement programs has expanded. In certain regions of the country, the availability of tax incentives has become so extensive that little development activity is conducted without them. Since the tax burden is one of the few factors in the firm's investment decisions that is under the locality's direct control, the development officials who seek to influence private investment behavior may well choose abating property taxes as the "only game in town." (Wolkoff, 1980)

The success of this tax abatement policy depends upon the impact of the incentive on firm behavior. Existing research suggests that state and local tax differentials are unlikely to have major effects upon the location decisions of investing firms (Due, 1963). Tax abatement policy might be useful to influence private investment at the margin. Yet, sophisticated econometric modeling, which attempted to include both demand and supply side factors influencing intrametropoltan location decisions, has found weak evidence linking fiscal factors to the jurisdiction's employment share and tax base (Charney, 1983; Fox, 1980: Wasylenko, 1980).

For the firm that is ready to move, has equal access to both input and output markets, and faces comparable public service packages, local property tax abatement may be important.

1.2. Purpose of the Study

The purpose of this study is to discover the relationships between the use of property tax abatements at the local level and local fiscal and economic conditions.

A significant variation among cities in levels of economic development allows one to examine the use of tax abatement across a wide group of municipalities. Previous studies examining tax abatement policy and its effectiveness have offered little discussion about why some communities choose certain economic development policies over others and at what levels. In light of questions of the efficacy of tax abatements, it is important to understand why some communities rely heavily on tax abatement policy while others are willing to forgo it, and what community characteristics determine the level of tax abated. In this study, I will examine the relationship between local fiscal and economic conditions of Michigan cities and the degree of local utilization of property tax abatement. I also analyze the relationship between political and environmental factors and tax abatement policy.

1.3. Organization of Study

This study is divided into six chapters. After this introduction, Chapter II discusses various aspects of federal fiscal policies as they affect urban development patterns. This serves as a background for understanding the growth of localized tax instruments for planning purposes. The chapter then surveys the extent to which tax abatement programs are used throughout the United States. Since this dissertation focuses on one specific program, the use of property tax abatements in Michigan cities, the Michigan State tax abatement law, P.A. 198, is examined.

Chapter III discusses the current literature that has implications for local utilization of property tax abatements. This literature review includes three subjects for

the research: 1) studies on the relationship between local tax and expenditure policy and a firm's location choice; 2) studies on local economic development politics; 3) the literature related to measuring local fiscal stress. The implications from the review are the basis for the theoretical and empirical analysis presented in Chapter IV and Chapter V.

Chapter IV investigates the relative fiscal and economic performance of cities. Based on the data and literature review, Chapter IV describes a proposed fiscal and economic indicator, which attempts to measure the relative fiscal and economic performance of cities. Chapter IV also develops a conceptual framework for analyzing the relationship between local fiscal and economic conditions and the level of property tax abated.

Chapter V provides an empirical analysis of the level of property tax abated. This chapter presents hypotheses concerning the impact of local fiscal and economic variables on the local utilization of property tax abatement. The analytical method of this study is a statistical analysis using multiple regression models that identify the determinants of local utilization of tax abatements. The multiple regression models use panel data from 50 Michigan cities with population greater than 25,000. The panel consists of four pooled cross sections beginning in 1977 and continuing in five-year increments up to 1992. Dependent variables are the degree of the local utilization of property tax abatement, which is measured by 1) per capita amount of cumulative real market value of manufacturing property tax base abated away and numbers of manufacturing property tax abatement issued. Independent variables include local fiscal variables, local economic variables, and other environmental variables. This chapter explains the relationship between the level of local fiscal and economic performances of cities and the level of

property tax abatement based on regression results. This chapter also identifies other potential determinants of local property tax abatement policy.

Chapter VI will provide a summary of the study's major findings and discuss policy implications and future research directions.

CHAPTER II

BACKGROUND OF PROPERTY TAX ABATEMENT PROGRAMS

In this chapter, I will first examine various aspects of federal fiscal policies as they affect urban development patterns. This discussion serves as a background to discuss the growth of localized tax instruments for planning purposes. Then I will survey the extent to which tax abatement programs are used throughout the United States. Since this dissertation focuses on one specific program, the use of property tax abatements in Michigan cities, I will examine P.A. 198 of the laws of Michigan of 1974, which allows property tax abatement programs in Michigan cities.

2.1. The Uncertain Role of the Federal Policy

In this section, the impact of the federal policy on spatial development is briefly outlined. The purpose of this discussion is to understand the bias and inconsistency of the federal tax and expenditure policies, which have tended to encourage tax competition among states and localities.

Federal tax policy as part of fiscal instruments is intended to control aggregate demand and the level of economic activities. Therefore, the explicit concern of personal and business tax systems is confined to the performance of the macro-economy. However, the current federal tax policy also contains an "implicit urban policy" due to differential tax benefits to individuals and business establishments having different locations. Thus federal tax policy enters into individual and business decisions as one of

the most important factors affecting locational choice. As shown below, several aspects of the federal tax policy have resulted in a strong bias against older cities.

First, personal income tax provisions regarding homeownership have significantly affected the spatial structure of cities. Under the current federal tax system, homeowners are allowed to deduct mortgage interest payments and state and local property taxes from their income. Furthermore, the amount of imputed rent is not added to the income of homeowners for tax purposes. Various studies have shown that homeowners gain roughly 10 percent of the housing price as annual return on their investment, and that they also reduce a substantial portion of their housing costs because of the tax benefit (Hayes and Puryear, 1980). The apparent benefits to homeowners provided by the federal tax policy have created strong incentives for individuals to become owner-occupants. An analysis of the post-World War II data suggests that about 25 percent of the increase in the proportion of homeowners is attributable to the federal tax system allowing benefits to owner-occupants (Rosen and Rosen, 1980).

American cities typically have a relatively higher proportion of rental housing units in the form of multi-family structures in older central cities. Historically, most new construction of owner-occupied single family housing units has taken place in the periphery of metropolitan areas. This pattern of urban development, together with the federal personal income tax policy, has substantially contributed to the decline of older central cities.

A second example of the federal tax policy creating a bias against older cities is the investment tax credit. The investment tax credit is intended to encourage new capital formation by allowing favorable tax concessions to business establishments making

investments. Before 1978, this credit was allowed only for new investments in equipment, thus giving additional incentives to businesses to close down old plants, and move to the suburbs and the newly developing areas. This bias against rehabilitation was corrected by the Revenue Act of 1978, which extended the investment tax credit to rehabilitation of business structures which are at least 29 years old. Despite this change, the overall impact of this investment tax credit seems to be in favor of newly growing area (Bahl and Puryear, 1978: Hayes and Puryear, 1980).

It is also important to note the combined effects of the two aspects of the federal tax policy on urban development. Business location is affected by the location of the labor force, while residential location decisions are dependent upon employment location. The interdependency between employment and population location, coupled with the federal bias have probably furthered the decline older cities.

The federal expenditure policy and some of the federal regulatory mechanisms have also influenced uneven spatial development. For example, the construction of the interstate highway system, the mortgage insurance and guarantee by the Federal Housing Administration and the Veteran's Administration, and the control of the oil price, to name of few, have tended to work in favor of the suburbs and newly developing areas.

Various forms of intergovernmental transfer programs have been introduced to correct fiscal imbalances among state and local governments. Available empirical evidence suggests tremendous regional variations in the allocation of federal grants. Currently, the Northeast and the West receive greater amounts of per capita federal grants, with the Midwest lagging substantially behind (Vehorn, 1977). Central cities in general appear to receive the greatest amount of federal aid per capita. Among different

regions, central cities in the Northeast receive the greatest amount, and those in the Midwest the least. However, according to Vehorn (1977), suburban areas of the Western region seem to get more than the central cities of their own and of the Southern and Midwestern regions.

To summarize the above discussion, the current federal policy is an odd mixture of intra- and inter-regional bias and inconsistency with respect to urban development and growth. The bias of some policies is quiet apparent, while impacts of some others seem indeterminate. Of course, the uneven spatial development observed in the United States is not solely due to the federal policies. An important point is that the bias and inconsistency inherent in the federal policy and the lack of a coherent national spatial policy have tended to encourage a widespread practice of decentralized tax instruments by state and local governments.

2.2. Background of Tax Abatements Program in the United States

The use of tax concessions as incentives to stimulate economic activities by state governments dates back to the eighteenth century. Alyea (1967) reports on examples of tax abatements. In 1783, Connecticut granted a ten-year tax exemption for the purpose of creating jobs for the poor to those firms that would manufacture oil from flax seed. After the Civil War, South Carolina offered inducements to industry that explicitly linked to tax abatements with industrial subsidies. "Anyone who employed capital in the manufacture of cotton, wool, or paper fabrics, iron, lime, or agricultural implements was entitled to receive, from the state treasury, a subsidy equal to his total state taxes for a period of 10

years" (Alyea, 1967, p. 141). As early as 1791, the State of New Jersey allowed tax exemptions to a new business firm and its employees (Dorfman, 1947). New Jersey discontinues this practice in 1800, but during the nineteenth century other states established tax exemption systems to attract industries. The measure was originally a Southern phenomenon, but recently, it has been adopted by the majority of states in other parts of the country.

Tax abatement programs take a variety of forms, depending on the item of taxes exempted or reduced, the duration, target areas, the amount of concessions, and target activities. Exemptions or abatements are applied to property taxes, income taxes, and/or sales taxes. Various surveys suggest that abatements of property taxes are one of most commonly used forms of tax incentives (Hellman, Wassell, and Falk, 1976). In terms of duration abatements are granted usually up to twenty years. For example, New Jersey allows abatements up to fifteen years, while Ohio twenty. Geographical targeting also varies. In some states, tax abatements are granted only to legally defined "blighted" areas. In some other states, however, tax abatements are also varies among little geographical restrictions. The amount of tax abatement also varies among states, usually taking a certain proportion of gross rentals or total project costs. Finally, the target activities also come in a variety of forms. While some states and local jurisdictions allow tax concessions only to industrial and commercial activities, others have granted tax abatements to residential projects. For example, under its administrative code, the city of New York has practiced tax abatement and exemption programs to encourage rehabilitation of multiple residential structures.

An indication of the growing popularity of these programs can be gleaned from Table 2.1. Tax abatements have been used by an increasing number of jurisdictions. Since 1970 the number of states offering property tax abatements has more than doubled. While no clear geographic pattern characterizes the use of this tool, Northeastern and Great Lakes states show the greatest level of tax abatement activity. Table 2.2 gives a complete listing of the 44 states conducting tax abatement programs. At this point, the frequency of use of tax abatements approaches that of a number of other more traditional economic development programs. One reason is that industrial development bonds have become a less attractive form of incentive because Federal tax exemption was limited to bond issues of $1 million or less in 1968 (except for pollution control bonds). This has increased the relative attractiveness of property tax abatement as an incentive for investments exceeding the bonding cap.

Table 2.1. No. of States Offering Selected Industrial Incentive Programs in Selected Years

	1970	1975	1980	1985	1990	1995
Corporate Income Tax Exemption				28	34	36
Personal Income Tax Exemption	20	19	20	22	32	32
Tax Exemption or Moratorium on Land, Capital Improvements	17	21	29	32	35	37
Tax Exemption or Moratorium on Equipment Machinery	21	27	31	32	41	42
City /County Revenue bond Financing	42	43	46	50	49	49
State Right to Work Law	19	19	20	20	22	22

Compiled from *Industrial Development and Site Selection Handbook*, selected issues.

Table 2.2. States with Property Tax Abatement Programs

1. Tax Exemption or Moratorium on Land, Capital Improvements and Personal Property (Equipment and Machinery): 35 States

Alabama	Arizona	Arkansas	California	Connecticut
Delaware	Florida	Georgia	Illinois	Indiana
Iowa	Kansas	Kentucky	Louisiana	Maryland
Massachusetts	Michigan	Minnesota	Mississippi	Missouri
Montana	Nebraska	New Mexico	New York	North Dakota
Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island
South Carolina	South Dakota	Tennessee	Texas	Virginia

2. Tax Exemption or Moratorium only on Land, Capital Improvements: 2 States

Alaska	New Jersey

3. Tax Exemption or Moratorium only on Personal Property (Equipment and Machinery): 7 States

Colorado	Hawaii	Idaho	Main	New Hampshire
Utah	Wisconsin			

Source: *Industrial Development and Site Selection Handbook*, October 1995.

In order for a locality to abate property taxes, it must first receive state enablement. The decision by state and local governments to use tax policy to influence economic development does indicate that the jurisdiction is willing to attract development by all possible means. Tables 2.3 and 2.4 show that it is possible to distinguish groups of states by their choice of economic development tool. Most state that choose to allow localities to offer tax abatements do so on all forms of property; only eight states selectively encourage development of real or personal property. But states that permit tax abatements tend not to interfere with labor-management relationships. Table 2.4 shows that only 22 states agree in their dual assessment of usefulness of right to work laws and tax abatements. Nineteen states find both programs to be useful and three states find neither of much use; the remaining states have chosen to use one incentive or the other. There is little disagreement over the use of revenue bond financing as an economic development tool. Virtually all states offer revenue bond opportunities to business. Since it is the Federal Treasury that bears the cost of these bonds, their widespread use is no surprise.

Table 2.3. Availability of Property Tax Abatement on Land and Machinery, 50 states, 1995

	Tax Abatement on Land and Capital		
Tax Abatement on Machinery	Yes	No	Total
Yes	35	7	42
No	2	6	8
Total	37	13	50

Source: *Industrial Development and Site Selection Handbook*, October 1995.

Table 2.4. Availability of Property Tax Abatement and Right-to-Work, 50 states, 1995

	State Right to Work Law		
Property Tax Abatement	Yes	No	Total
Yes	19	25	44
No	3	3	6
Total	22	28	50

Source: *Industrial Development and Site Selection Handbook*, October 1995.

In recent years tax abatements have played major roles in the redevelopment plans of northeastern and midwestern cities. Yet despite differing economic conditions between industrial and non-industrial regions, cities and suburbs, and north and south, the content of tax abatement programs is similar. With few exemptions industrial development is awarded tax advantages irrespective of the impact of the tax incentive on the investment or the impact of the development upon the community. Abatements are typically given for a fixed number of years at a fixed abatement rate. For example, Michigan communities may abate 100 percent of property taxes on the increase in value from rehabilitation and 50 percent on new investment. Missouri's law is similar but covers a longer period of time. Of the 42 states that offer property tax abatements, only Vermont, Ohio and Michigan make provision for altering the terms of the reward and in practice this is virtually never done.

Despite evidence of increased use, what the data do not tell us is whether tax incentive programs have been successful in inducing new development. The pattern of tax award is such that localities may be taking defensive measures to maintain relative tax

differentials with their neighbors. If this is the case, taxes are lowered to industrial firms at all locations.

2.3. Tax Abatement Policy in Michigan

2.3.1. P.A. 198 of 1974

The P.A. 198 Tax exemption program of 1974 is designed to create and retain jobs in the state. Public Act 198 provides significant tax incentives to industry in order to encourage renovation and expansion of existing plants and construction of new plants. Qualified local governments are authorized to establish Plant Rehabilitation Districts and/or industrial Districts at their discretion as the initial step toward enabling firms to apply for Industrial Facilities Exemption Certificates.

Under the provisions of the Act, a local governmental unit (city, village or township) in which the total property tax levy is at least 30 mills, or in which a city income tax levied, may establish plant districts and industrial development districts and offer industrial firms certain property tax incentives.

The granting of property tax incentives under the Act is a local option left to the discretion of the legislative body of the local government unit. An application is filed with the local government, reviewed, and if approved, filed with the State Tax Commission and the Michigan Department of Commerce. Final approval is granted by the State Tax Commission. This mechanism entitles the firm to apply an Industrial Facility Tax in lieu of property tax[1] for a period up to 12 years. In the case of a plant

[1] The property tax is referred to as an "ad valorem" tax, because it is an annual tax levied as a percentage of the market value of property.

rehabilitation, the industrial facility tax is based on the state equalized value (SEV) of the property before renovation. The new SEV equals one-half of the investment for rehabilitation and is the amount exempted for up to 12 years. The SEV for a new facility is one-half the investment. The industrial facility tax paid by a certificate holder equals half the actual tax for a period up to 12 years.

3.2. Program Content

Public Act 198 grants local communities the authority to award property tax abatements to new manufacturing firms and to firms that substantially rehabilitate obsolete facilities. The process requires two distinct steps. First, the local legislative body establishes a plant rehabilitation district or an industrial development district on behalf of the firm that request it. Once the district is established the firm may apply for and be issued an Industrial Facilities Exemption Certificate. This certificate entitles the facility to be exempted from tax on real and personal property but requires that another tax be paid in lieu of property taxes. A new firm needs only pay half of the total mills levied as ad valorem taxes for that year by all taxing units within which the facility is located. In the case of a rehabilitation project all accretion in value to the site as a consequence of the reinvestment is exempt from property taxes. The exemption may be extended up to a maximum of 12 years although in practice virtually every abatement offered in Michigan has been issued for the maximum length of time.

The use of P.A. 198 is restricted to only those Michigan cities, villages, and townships which levy income taxes or where total millage levied within the jurisdiction exceeds 30 mills. The Act defines what categories of investment are eligible for property

tax abatement. In order to insure that tax relief is not going to those firms whose investments consist solely of capital maintenance, the law requires that industrial property improvements exceed 10 percent of the true cash value of the site prior to the improvement. This creates an incentive for investing firms to add at least 10 percent to their capital stock in order to qualify for the abatement, whether they need to or not.

Although the legislation makes no attempt to interfere with local autonomy by specifying how to make the trade-off between reward and incentive, it identifies a number of issues that must be considered before an abatement is approved. The state is concerned about jurisdictions competing with each other over firm location decisions. It also wants the locality to consider the revenue cost of tax abatement. P.A. 198 establishes guidelines in these areas but does not bind the local decision process. In particular, Section 9 of the law enumerates a set of criteria that must be considered before the local governmental legislature issues a resolution approving an application for the Industrial Facilities Exemption Certificate. The extent to which each of these criteria is instrumental in shaping local decisions varies.

The local jurisdiction is required to make a separate finding that the fiscal capacity of the taxing jurisdiction is not impaired by the abatement. The State Tax Commission must be notified when the exempt portion of state equalized valuation exceeds 5 percent of the total state equalized valuation of the jurisdiction. This provision is meant to force the locality to consider the impact of the abatement upon the local fiscal capacity. The 5 percent guideline probably makes little sense to local officials. They regard the revenues foregone due to tax abatement as uncollectible without the incentive. Further, due to underutilized capacity and previously established infrastructure, new

developments do not impose major increase in serving costs in urbanized areas. In the case of school districts, property taxes lost through abatement are compensated by higher grants from the state school finance formula.[2] Therefore, few circumstances exist where local official would value a judgment that the financial soundness of the taxing unit would be impaired.

Fiscal capacity is not the only criteria identified in Section 9; local employment impacts must be considered as well:

> Completion of the facility is calculated to, and will at the time of issuance of he certificate have the reasonable likelihood to create employment, retain employment, or prevent a loss employment in the community in which the facility is situated. (Section 9c)

If Section 9c is interpreted narrowly, then any facility that was not fully automated could satisfy this requirement. Informed decision making necessitates a much more sophisticated regulation; one that recognizes the complex environment that exists. The decision-maker must assess how likely investment would be without the incentive in order to lend meaning to the "reasonable likelihood" requirement. Also, local officials must still be concerned with the fiscal impairment criterion outlined in Section 9.1. Deciding how much employment is necessary to make up for lost tax revenue or what size abatement is necessary to induce investment is left to local discretion.

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[2] School districts that levy up to 30 mills do not forgo any revenues due to tax abatement since they are compensated by the state school aid formula if they qualify for coverage. Districts levying over 30mills are not compensated for the portion over 30 mills.

CHAPTER III

A REVIEW OF THE LITERATURE

3.1. Overview

The purpose of this chapter is to provide a theoretical and empirical review of current literature relating to local utilization of the property tax abatement policy. Much debate, but little theoretical modeling and empirical analysis surrounds on the tax abatement programs as an economic development policy. Previous studies examining tax abatement policy have offered little discussion about why some communities choose certain economic development policies over others and at what levels. Among a number of potential topics, three subjects for research are important to understand local utilization of property tax abatement policy. They are described below.

First, studies on the relationship between local tax and expenditure policy and a firm's location choice may provide economic rationale for local utilization of the tax abatement policy. In economic term, local utilization of the property tax abatement can be viewed as an interaction between a firm's profit maximizing behavior when making locational choices and a community's welfare maximizing behavior. This interaction illustrates how a community and its fiscal policy theoretically influence a firm's locational choice. Economists have naturally questioned whether this influence should be of any concern to state and local policy makers.

Second, studies on local economic development politics provide political rationale and political factors affecting local utilization of the tax abatement policy. A political

economy approach shows how the actions and behaviors of key institutions and actors are responsible for determining local economic development policy choices. A political economy perspective has broader implications for governmental intervention and directions for public policy.

Third, the local fiscal and economic condition is a crucial factor affecting local utilization of the tax abatement policy. Severe substantial differences exist among different localities in fiscal and economic conditions. Part of the reason for these differences in employment and income among areas may be the fiscal policies - taxes and expenditures- carried out by the governments in those places. Also economic conditions influence the demand for state-local government services. Moreover, differences in economic and fiscal conditions among localities may themselves influence business investment and a firm's location decisions. Thus, the literature related to measuring local fiscal stress may be important to understand the factors related to the local utilization of property tax abatement policy.

3.2. Local Tax and Expenditure Policy and Firm's Location

Most of the early theories on firm's location decisions emphasized that a firm's location is determined or selected to maximize its profit or minimize its costs. Costs in classical theory were classified generally as those of raw materials, transportation, and labor (Alonso, 1964; Losch, 1954; Schmenner, 1978). This classical location theory held that taxes did not play a significant role in industrial locations. Taxes have been receiving increased attention as a location factor in recent location choice literature.

Floyd (1952) addressed this issue by separating a manufacturing firm's location decision into two separate stages. In the "market stage," a firm chooses to locate in a region of a country, or a region of a state, based on its market characteristics. In the "site stage," a firm chooses a unique site to serve its predetermined market at these highest profits to the firm. Floyd contended that fiscal differences are usually too small to influence a manufacturing firm's market selection. In market selection, non-fiscal characteristics overwhelm the influence state and local taxation and expenditure have on expected profit. Floyd theorized that fiscal policy exerts its strongest influence during site selection. During site selection, non-fiscal characteristics that had overwhelmed the effects of local fiscal policy are largely constant.

The Advisory Commission on Intergovernmental Relations (1967, p.78) related Floyd's reasoning in the following statement:

> The relative importance of the tax differential factor in industrial location decisions appears to increase as the location decision narrows down to a particular jurisdiction within a general region. Among local governments within a state and especially within a metropolitan area, tax differentials exert discernable plant location pull. In almost every metropolitan area, wide local property tax differentials become a "swing" factor in the final selection of a particular plant location.

Due (1961) presented the review of studies relating to state and local tax influence on location industry. Due reports no statistically significant link between industrial growth rates and relative tax burdens. He concluded that tax effects are of no major importance to interstate manufacturing location. However, Due (p171) stated that

" ... in some instances the tax element plays the deciding role in determining the optimum location, since other factors balance. This is most likely to be the case in the selection of a precise site in a metropolitan area." Due based this statement on informal observation.

He called for a detailed investigation of the influence taxes have on intrastate firm location.

White (1975) and Fischel (1975) provided similar theoretical models of the influence communities have on intrametropolitan firm location. White and Fischel's models were both attempts to address problems with Tiebout's (1956) seminal model of local public service provision and residential location choice.

In Tiebout's model, consumers reveal their preference for congestible local services by settling in a community whose population and size allow the community to provide the desired level of public services most efficiently. Under Tiebout's assumptions, the outcome of this "voting with the feet" can be a Pareto efficient provision of local public goods. Tiebout implicitly assumed that benefit charges finance local public services. In reality, local property taxation cannot be considered a benefit charge for local public services.

Hamilton (1975) addressed this problem by adding to Tiebout's model the assumptions that communities raise their revenue through property taxes and use "neutral fiscal zoning." Neutral fiscal zoning requires that each community set standards for residential entry such that property tax revenue from a new resident's home covers the cost of providing additional local service to it. With neutral fiscal zoning, the local property tax is transformed into a benefits pricing system. Both Tiebout and Hamilton assumed that communities are composed only of residents. However, White and Fischel extended the Tiebout and Hamilton assumptions to a system in which both residents and firms locate in communities.

White demonstrated that if communities use a form of fiscal zoning, the introduction of firms into the Tiebout-Hamilton model does not destroy its stability or efficiency. White developed a model of a community's willingness to supply firm sites. Communities are considered to have equal populations and are in a metropolitan region that sits on a plain without a central city. A firm desiring a site in this region chooses its location based on differences in local tax rates.

In White's model, residential and industrial property are taxed at the same rate. Communities offer an equal level of locally provided services to firms in any one industry. Industries desiring intrametropolitan location vary, but firms in an industry are homogenous. Firms operate in "footloose" competitive industries. Residents are the first to locate in a community. With Tiebout-Hamilton equilibrium, residents demand a uniform level of housing and local public service. A community's property tax rate equals the uniform value of residential public service provided per household divided by the zoned uniform value of housing. Firm entry is allowed only after residential equilibrium is established. Without firm externalities, a community using neutral fiscal zoning requires an entering firm to use a minimum amount of taxable property. The minimum property requirement is equal to the value of local services provided to the firm divided by the property tax rate.

Firms produce output by employing land, local public services, and capital. Firms choose an intrametropolitan site based on the profit maximization of an industry-constant Cobb-Douglas production function. A firm locates in a community whose residentially-determined tax rate is as close as possible to a calculated ratio of the production function's public service exponent. All firms in an industry subsequently seek a

community with the same tax rate. Firms in an industry are expected to cluster in one city.

White accounted for negative firm externalities by "pollution zoning." Pollution zoning consists of a community's zoning board calculating a social welfare function that guages the median voter's willingness to trade a loss in environmental quality for a gain in "pollution-compensating transfers." Pollution compensating transfers are property tax payments above the amount necessary to cover locally provided public services. By increasing the pollution compensating transfer a community receives per unit of environmental loss, White's offer curve represented an increase in local firm sites (pollution level) as pollution compensating transfers increase. The intersection of a community's positively sloping firm's demand curve for a community's sites, yields the combination of firms and property taxes a community seeks.

Communities use this combination to set a schedule of required property use levels for firms in each industry. Because White only allowed firms to pay pollution compensating transfers in the form of property taxes, required property consumption levels are the only way community receives its desired pollution compensating transfer. Required firm property consumption levels are equal to the sum of local service provided to the firm plus the industry specific pollution compensation transfer, divided by the property rate. A community offers to supply sites to all firms that meet their minimum property consumption levels.

If demand for environmental quality is income elastic, wealthy residential communities require a larger compensating transfer per unit of pollution. Wealthy residential communities offer a smaller and more inelastic supply of sites to

environmentally damaging firms, then do poor residential communities. In white's system of pollution zoning, wealthier communities set a higher minimum firm property requirement. This level may be enough to effectively zone out some or all firms.

The theoretical models of White and Fischel revealed that communities rationally restrict their supply of sites to firms. Empirical research that followed these theoretical models has only begun to fully incorporated this implication.

Fox (1981) began with the premise that an empirical analysis of a firm response to local fiscal policy should not include localities that zone out industry. According to Fox, previous researchers had attempted to estimate the demand for an average metropolitan community's firm sites. These regressions used a data set that contained observations on every community within a metropolitan area. Supply-side theory suggests that a community's property tax may encourage a larger than optimal number of firms to enter the community. To prevent this, communities zone out some firms and a community's observed property tax rate and corresponding level of firm activity represents supply conditions. It should not be used to estimate a demand equation. Fox applied his reasoning to a regression analysis involving 43 cities in the Cleveland Metropolitan Area. Twenty cities that had less than one percent of their property tax base devoted to manufacturing were considered to be effectively zoning it out. Using the remaining 23 cities, Fox regressed the percentage of a community's property tax base devoted to manufacturing against local property tax rate, land price, locally-provided firm services, highway and rail dummies, manufacturing capital-to-land ratio, and population density. He recognized that tax rate, land price, local business services, and capital to land ratio are endogenous to his model and appropriately used a two stage estimation technique. He

points out that his interpretation of the regression results are only accurate if the communities are in long-run location equilibrium. For the sample of 23 communities that were believed to not zone out manufacturing, property tax rates and business service levels exerted a statistically significant influence on manufacturing activity.
Fox found that a 1 per cent increase in a community's effective property tax rates in the Cleveland area reduced the long-run industrial percentage of city's property tax base by 4.43 per cent. A 1 percent increase in local business services in the Cleveland area increased the same percentage by 2.78 per cent.

Charney (1983) examines the role that fiscal factors play in the intra metropolitan location decisions of manufacturing firms. Her regression study modeled the supply of community sites in a slightly different manner. Charney assumed that a profit - maximizing manufacturing firm makes an intrametropolitan location choice by calculating its expected profit level in each community. It then chooses the community that offers the highest expected profit. In Charney's model, all firms have the same production function and consequently wish to locate in the same community. This net of tax price of manufacturing land is bid up in some communities and bid down in others. This process continues until a manufacturing firm's expected profit levels are equal across all metropolitan communities. In Charney's model, the net of tax price of manufacturing land is a function of variables that influence demand for a community's manufacturing sites. Charney assumed that a community's supply of manufacturing sites is a function of the bid price by manufacturer, zoning restrictions, and determinants of other possible users' bids for land use. Charney calculated a supply price function by inverting her supply function. A community's manufacturing site market is considered in

equilibrium when demand price equals supply price. Charney obtained the equilibrium level of community manufacturing sites by setting the two price functions equal and solving for the reduced form. In Charney's model, no equilibrium exists if other users are willing to pay more than manufacturers, or if communities zoned out manufacturing firms.

Charney estimated her reduced form function. Her sample came from 110 out of a possible 126 zip code areas in the Metropolitan Detroit Area. The number of manufacturing firms that moved into a locality from 1970 to 1975 divided by the locality's land area was regressed against a vector of explanatory variables taken from 1970. The explanatory fiscal variables were the local property tax rate, local income tax rate, and local sanitation provision. The local property tax rate exerted a significant negative influence on location, while the local income tax rate and sanitation provision exerted no significant influence. The elasticity of firm location in regard to local property tax rates was -2.52. Dividing her sample between firms with a small, medium, and large number of employees, Charney found significant location elasticities with respect to local property tax rates of -.29, -1.77, and -2.22. These rising elasticities were attributed to a complementary between labor and capital use by firms. The greater amount of capital a firm employs, the greater its sensitivity to intrametropolitan property tax rate differentials.

McHone (1986) attempted to econometrically estimate separate structural supply and demand equations. MaHone's theoretical model of a community's willingness to supply firm sites was similar to White's and Fichel's model. McHone's theoretical model of demand for a community's manufacturing sites was based on profit maximizing firms

choosing intrametropolitan locations to minimize costs. McHone's data set consisted of a 1970 cross-section of suburban Philadelphia communities. Manufacturing employment per capita was regressed against a vector of explanatory demand variables and a vector of supply variables. Because of the endogeniety of property tax rates, McHone used a two-stage estimation technique.

McHone's regression results showed that transportation availability, distance to central city, and police/fire expenditures exerted a statistically significant positive influence on manufacturing firm's demand for community sites. Property taxes and library/park expenditures exerted a significant negative influence on demand. MaHone also found that property taxes and total public expenditure exerted a significant positive influence on a community's willingness to supply firm sites. Median family income, residential tax base, and population density exerted a significant negative influence on site supply. MaHone calculated the property tax elasticity of a community's supply of manufacturing sites and the manufacturing firms' demand for community sites to be .55 and -.79. This property tax elasticity of demand was inelastic and significantly less than similar elastic measure calculated by Fox (-4.43). McHone's result provided strong empirical evidence to support the contention that property tax differentials exert a statistically significant, but inelastic influence on both the demand and supply of intrametropolitan firm sites.

Ladd (1975) tested the hypothesis that the composition of a community's property tax base affects its local expenditure decision. Lass believe d that the non-residential size of the tax base influences local demand for municipal services in three way: (1) reducing the perceived tax price of local services to residents, (2) increasing local expenditures on

services provided to firms, and (3) increasing expenditures on local services necessary to mitigate firm's environmental damage.

Ladd tested her hypothesis by estimating a standard demand function for local educational services in the Boston S.M.S.A in 1970. The residential tax price in her demand function equaled "1-aC-bM." "C" and "M" corresponded to the commercial and manufacturing portions of the locality's tax base. Ladd derived estimates of "a" and "b." If "a" and "b" both equal one, the median voter's tax price for an additional dollar of public expenditure was perceived to be equal to the residential percentage of the local tax base. If "a" and "b" were both less than one, the median voter perceived his tax price to be greater than the residential portion of the local property tax base. This occurs if the firm portion of the property tax is shifted to local residents or an increased local property tax rate causes firm relocation and decreased future property tax rate revenue. Ladd calculated "a" to be .8 and "b" to be .45. Thus, -.2 and .55 equals the elasticity of the local commercial and manufacturing property tax bases with respect to local property tax rates. Ladd found the more standard result that a metropolitan community's manufacturing tax base is more footloose than its commercial tax base. A manufacturing tax base is more likely to be driven out of a community by its high property tax rates.

Ladd and Bradbury (1988) used regression analysis to measure the relationship between city taxes and city property bases. Their theoretical model accounted for the four structural components that determine this relationship: (1) city tax base, (2) city balanced budget, (3) resident demand for public spending, and (4) city tax mix. The fact that a city's property tax rate is endogenously determined by its property base was accounted for.

Ladd and Bradbury estimated a reduced form of equation representing determinants of a city's tax base. They are very careful to identify accurately the independent property tax variable. Their pooled data set is drawn for the years 1972, 1977, and 1982 from large U.S. cities whose 1970 population was greater than 300,000. The fact that observed property bases do not represent long-run equilibrium values is accounted for in their regression methodology. The long-run elasticity of a city's property base with respect to its property tax, overlying county and state taxes, and income tax was respectively calculated to be -.15, -.1, and -.07. A city's sales tax had a statistically insignificant influence on the city's property base.

Erickson and Wasylenko (1980) conducted a regression study of local taxes and the site selection of firms moving from the Milwaukee central city to its suburbs. They criticized past research for its lack of an explicit theoretical model. Erickson and Wasylenko derived a general specification of firm demand for community sites based on cost minimization for manufacturing firms or profit maximization for commercial firms. They assumed that a community's supply of potential sites was perfectly elastic in the range demanded by firms.

Erickson and Wasylenko's dependent variable was the number of firms in one industry that moved to a specific suburban city, divided by the entire number of firms in that industry that moved from Milwaukee to any suburban city. The dependent variable was calculated for a ten-year period beginning in 1964. They avoided the questionable assumption of long-run metropolitan location equilibrium by using a dynamic dependent variable. A weighted least squares logistic technique was used to regress their dependent variable against mid-period proxies for land price, wage rate, effective property tax rate,

community provided firm services, and agglomeration economies. Erickson and Wasylenko included local measures of population density and per-capita income to proxy for market effects on commercial location.

In all of Erickson and Wasylenko's regressions, industry employment concentration and the available industry work force within a seven-mile radius exerted a significant positive influence on relocation. For the construction and wholesale trade industries, distance from the central city exerted a significant negative influence. For manufacturing, the percentage of land devoted to manufacturing, and the percentage land vacant, exerted a significant negative and positive influence. The percentage of land vacant had a significant negative influence on the whole sale trade. Erickson and Wasylenko found that local fiscal variables did not influence relocating firm's suburban site selection.

Wolkoff(1983) developed a systematic framework to assess the effectiveness of property tax abatements. Using a Jorgenson-type investment function and 1970s data from the city of Detroit, he found that an abatement which reduces a firm's property taxes by 50 percent would only increase firm investment by 2 to 5 percent. He concluded that this was too small of a response to justify the magnitude of property tax abatements the city of Detroit had offered in the 1970's. Wolkoff suggests that local policymakers differentiate between applicants and vary the size and length of abatement awards more.

Wassmar (1992) used the simultaneous equations to analyze relationships among local fiscal variables, property tax abatement and the composition of the property base in Detroit metropolitan areas. Using the profit-maximizing model of firm behavior, he derived the schedule of manufacturing property tax abatements in long run. His model is

based on the assumption that nonresidential taxable property, excluding land, is only perfectly mobile between communities in a metropolitan area in the long run.

According to Wassmar, local governments offer property tax abatements because a community's profit-reducing characteristics are not necessarily fully capitalized into lower land prices. If a community in any of these situations desires to attract and retain firms, it offers some form of compensating incentive. It has been shown that communities with higher local property taxes and greater crime per capita offer greater property tax abatements. Communities that provide more local services to firms, have greater highway networks, and have residents and surrounding communities with greater income, offer less property tax abatements. He concluded that an increase in manufacturing property abatements does increase the average community's manufacturing property tax base and consequently the local property tax revenue collected. Property tax abatements help communities overcome local profit-reducing characteristics and retain existing, as well as attract new, firm property base.

This literature on the relationship between the local tax/expenditures policy and firm location did not provide firm conclusions about the tax abatement policy. It did provide some economic rationale for local utilization of tax abatements. This review of the local tax/expenditures policy and firm location literature casts serious doubt upon the importance of tax differentials in influencing location decision. This suggests that tax abatements are unlikely to have a major impact on a firm's investment decision. Rather, non-fiscal characteristics such as local agglomeration economies, labor availability, and land prices do influence firm's investment decision.

However, while existing research has not established the relationship between tax incentives and urban investment, it also has not proved that no relationship exists. Some argued that tax differentials might be important to those a firm's decision about a particular site within an acceptable region for conducting business.

Industrial investment decisions can be shaped not only by the behavior of firms but also by the policy tools of local governments. Local governments have only a small arsenal of tools to promote economic development. Among these are tax abatements. If these incentives can induce some development that would not have otherwise occurred, the economic pay-off is potentially large. Even if the pay-off is not large, it may still be rationale for cities to offer tax abatements as long as the discounted stream of expected benefits exceeds the cost of granting the abatement. Tax abatements may not by themselves be the solution to the urban economic development problem but they may, on the margin, encourage economic development that would otherwise not have occurred.

3.3 Political Economy Approach

3.3.1. Political Rationale of Tax abatement Policy

There are two different domains of local politics in considering economic development policy; allocational and developmental. The domain of allocational policies is characterized by intense and open political debate between pluralistic interests (Sharp and Elkins 1991). The domain of developmental policies is characterized by a centralized and relatively closed, consensual decision-making process between economic and government elite. Traditional economic development policies are in the developmental

policy domain; the decision process is relatively closed and secretive. Political and bureaucratic rationality, not economic rationale, dictates that the economic development policies that serve the needs of the political regime are arrived at through a decision process that lies in the domain of developmental politics. The analysis of political and bureaucratic rationality can be extended in considering risk in an uncertain environment. In an uncertain environment, in which policy initiatives are constrained by scarce resources, the adoption of economic development policy is further determined by the degree of risk associated with policy.

This uncertainty and risk are recognized as determinants of decision making in general and in the economic development literature (Peretz 1986; Rubin and Rubin 1987; Stone 1987). Economic development policy has inherent risks, because both resources for policy and the benefits unknown. There is no certainty that economic development policy will produce the results or benefit expected.

Political risk is defined as the potential for positive or negative political consequences resulting from a policy position or decision. The uncertainty of resources and results forces policy-makers to concentrate on this risk. Political risk particularly salient in economic development policy, because the environment is uncertain and the net effects of economic development policy are undeterminable over the long run. Risk becomes a political question, determined subjectively by the actors involved (Stone 1987). Political risk can be understood in reference to the uncertainty of the environment. Environmental uncertainty arises from incomplete knowledge of the environment. Environmental uncertainty comes from two areas: uncertainty about competition in the environment and general uncertainty about environmental changes.

Peretz (1986) and Walker (1989) suggest competition as a factor that influences the adoption of development policy. The widespread competition for economic development has the effect of heightening the scarcity of firms. Tax incentive and financial programs are adopted by governments in the effort to remain competitive.

In the context of economic development, policymakers have uncertain and incomplete knowledge about the level of incentives that must be offered to recruit industry. Firms have information that gives them a bargaining advantage in negotiating incentives (Blair, Fichtenbaum, and Swaney 1984). Firms may threaten to locate elsewhere if states and localities do not provide the desired incentives, and government is uncertain about the seriousness of these threats. This uncertainty may be reduced by offering the incentives sought by industry without questioning what is actually needed to recruit the industry.

Tax abatement policy is relatively invisible to the general public in terms of cost. From political-economy perspective, a secret policy process and hidden agenda reinforces regime politics and reduced public input into the design of incentives. As a result, decisions are further removed from the external pressures of public sentiment (Stone 1980) and can be made on the basis of the needs of the politician or bureaucrat. Public officials are inclined to favor policies with low public visibility because they avoid direct competition for resources. Economic development policies that do not have visible costs and are supported by the political regime will be favored. Tax abatement policy can be adopted with the support of prospective firms, improve environmental certainty for public official and entail very low risk. Policy cost and the level of benefits are concealed by hidden, relatively invisible tax abatements or tax expenditures. These policies produce

symbolic benefits for public officials, regardless of their measure of effectiveness. From a political-economy perspective, cost-minimization strategies are characteristic of a caretaker regime (Stone, Whelan, and Murin 1986).

3.3.2. Determinants of Local Economic Development Policy

Economic development, in its general sense, is a process by which materials and social well-being is increased (Institute for Public Policy Studies, 1985). Therefore, economic development is a vital component of community public policy (Peterson, 1981). Although the goal of the economic development process might vary across communities, the importance of economic development to community prosperity, broadly defined, is indisputable. Economic development is defined operationally as a city's policy actions (promotional strategies and market interventions) aimed at creating jobs and increasing capital investment in the jurisdiction. One way of achieving these outcomes is to attract new firms. Jobs and capital that are won by one city will be lost to other cities. This is most clearly seen in relocation cases-when a firm exits one jurisdiction and reestablishes in another. Even when cities eschew attraction strategies and redirect their efforts toward retaining existing firms, assisting in expansion, and creating new firms, the process can still be understood as competitive. In these cases, although the jurisdictional behavior no longer resembles a head-to-head battle, it has effect of changing the competitive balance among cities.

Faced with major economic and social changes, intense citizen's demands, and declining federal aid, local leaders have adopted a host of policies to promote the

economic and fiscal health of their communities. There are two problems with this "intense preoccupation with economic development that has been marked by a level of consensus and expectation unusual in American politics" (Eisinger 1988: 3). First, those interested in the practice of economic development have placed such emphasis on being exhaustive in identifying options that they tend to ignore variation in the conditions under which communities are willing or able to adopt different policies. Second, scholars have examined such variation, but have been polarized around two competing explanations, one based on the broader economic and political systems and another that relies on the actions of local political and economic actors.

The structure theory is that urban development is shaped by economic and social conditions beyond the control of local policy-makers. Peterson (1981: 20) argues that cities must promote their "interest" i.e., "the economic position, social prestige, or political power of the city, taken as a whole." They are constrained, however, by the ability of many businesses and residents to move to another city if tax levels become too high or services seem inadequate. Local officials act in response to this pressure by competing with other cities to attract new firms and residents and to keep existing taxpayers from moving.

The economic constraint model looks for structural factors in understanding city policy (Peterson, 1981; Tiebout, 1956, Oates, 1972; Mills and Oats, 1975). The economic constraint model, which can be traced back to Tiebout's (1956) ideal world of fiscal equilibrium, has been most systematically presented in Paul Peterson's City Limits (1981). According to this approach, local communities are more constrained than the federal government by the environment in which they operate because they have to

compete with one another in luring investment and in exporting their goods. Local governments cannot regulate the flow of productive resources, namely, labor and capital (Oates, 1972; Mills and Oates, 1975). Thus, local communities face numerous constraints in attempting to maximize their economic prosperity. Without economic growth, local governments face either a stable or shrinking fiscal base. Accordingly, like any other rational actor, localities are expected to pursue their economically beneficial programs and stay away from activities that might jeopardize their fiscal well-being.

Structural theories imply that the more adversely a city is affected by broad economic, demographic, and political forces, the more development policies its officials adopt. In terms of economic factors, deindustrialization in the past decade suggests that communities heavily dependent on manufacturing will adopt more policies. Economic well-being also can vary according to the metropolitan status of a community. Central cities have tried to adapt as headquarters centers. Nonmetropolitan communities have tended to focus on mobil capital. Suburbs, however, generally benefit from the dispersion of economic activity within metropolitan areas and may have little need to promote growth (Noyelle and Stanback 1983; Baldassare 1986; Berry and Kasarda 1977; Schneider 1989; Markusen 1989; Green and Fleischmann 1991).

Several demographic characteristics can be expected to influence development policy. Total population, like metropolitan status, gauges a city's place in the urban hierachy. Larger cities are expected to adopt more economic development programs due to the diversity of both resources and pressures for doing so (Noyelle and stanback 1983; Friedman 1990; Cook and Beck 1991). In terms of change, slow growth or outright decline may make cities more vulnerable to pressure to promote growth (Jones and

Bachelor 1986; Rubin 1986; Rubin and rubin 1987), while rapidly growing places feel little push to stimulate development and may even try to limit growth (Baldassare 1986; Logan and Zhou 1990). Regarding composition, cites with a large numbers of poor residents are more likely to promote development extensively because of the costs redistributive programs or constituent pressure to improve the local economy (Peterson 1981).

Structural theories also suggest that actions by other governments will affect cities' development strategies. In particular, heavy dependence on intergovernmental revenue as federal aid declined during the 1980s should lead cities to adopt more policies to stimulate the local economy (Rubin and Rubin 1987; Sharp 1990).

Actor-centored theories point to several local factors that can affect development policy. One is political leadership. Although the literature is somewhat ambiguous, more development policies are likely to adopted in cities with a mayor-council government, where mayors expected to be more responsive to citizen and group pressures than are politicians in cities using the council -manager plan (Feiock and Clingermayer 1986).

Characteristics of the municipal bureaucracy also may affect development policy. Cities with more bureaucratic capacity (staff size, expertise, and experience) should be able to implement more development policies (Rich 1989). Moreover, cities may employ more economic development tactics when they have a specialized agency to administer them.

Fiscal decisions are the final local actions related to development policy. In particular, local officials are under pressure to keep down property taxes and increasingly resort to debt financing to maintain service levels (Schneider 1989; Sharp 1990). Thus

one would expect that politicians in cities with high debt levels or property taxes would adopt more economic development policies in order to avoid the wrath of citizens and expand the tax base.

One view of development policy making suggests that a community's structural characteristics influence strategies chosen by local leaders. The less indulated a city is from the recent changes in the economy and the effect of national business cycles, the more likely it is to offer a wide range of incentives (Hanson, 1983). We especially would expect that the more heavily dependent a city is upon manufacturing, the more it will try to use a wide range of economic incentives and activities to lure business. We also anticipate that a large disadvantaged population may spur local officials to offer numerous incentives to business. Specially, the extent of poverty and the percentage of the population that is nonwhite should be positively associated with efforts to promote development (Rubin and Rubin, 1987). In addition, we anticipate that more populous communities will have more resources available for their development effort (Peterson, 1981), and should be able to provide more incentives for economic development. Larger cities should also have the bureaucratic expertise to develop and implement a wide range of development programs. Larger cities are also more likely to respond to pressure from various groups by encouraging minority businesses and engaging in other forms of economic development not directly related to attracting new industry.

Existing studies imply that the range and types of incentives will vary depending upon whether local government, a public private development organization, or private business is the primary promoter of development. Thus, the highest incidence of local economic development activities should be found in communities where government is

the most active promoter of development, the lowest where business is most active. (Seidman and Gilmour, 1986).

3.4. Local Fiscal Stress Measurement

Local fiscal and economic condition is a crucial factor affecting local utilization of the tax abatement policy. There are also substantial differences among different localities in fiscal and economic conditions. Part of the reason for these differences in employment and income among areas may be the fiscal policies - taxes and expenditures- carried out by the governments in those places. Also economic conditions influence the demand for state-local government services. Moreover, differences in economic conditions and fiscal conditions-tax and expenditures- among localities may themselves influence business investment and firm's location decisions. Thus, measuring local fiscal stress is important to understand the factors related to the local utilization of property tax abatement policy. Existing measurement studies (Muller 1975; Nathan and Adams 1976; and Burchell et al. 1984) of local fiscal stress show that various socioeconomic factors influence revenue raising capacity and expenditure decisions of local governments. These studies indicate that local socioeconomic change affects local financial conditions. Local financial stress comes in part from the long-term decline in a local economy. Various approaches to measuring local fiscal conditions have been developed along with specific research interests, such as local fiscal crisis, stabilization, and capacity.

Many measurements of local fiscal performance are found in the local fiscal stress or crisis-related studies. Previous research on local fiscal crises developed measurements

of the local fiscal performance of major U.S. cities since the 1970s. These studies explain the role of external determinants, such as socioeconomic and demographic changes which impact the local revenue bases. Many studies focused on identifying the relationship between local revenue or expenditure patterns and changing socioeconomic circumstances, such as the change of population size, the magnitude of income, the incidence of poverty, the change of employment rate, housing starts, the age of housing, and so on.

According to these studies, local fiscal stress is related to the outmigration of people and industry. In particular, Lim (1982) provides a theoretical explanation of 'disequilibrium adjustment processes' by migrations in local finance. Muller's analysis (1975), which offers an interregional migration model, states that the decline of jobs and industry in older cities causes the local tax base to shrink and increases the cost of providing public services. Fiscal stress, basically, refers to the inability of a government to balance its budget. Inman (1995) argues that fiscal crisis exists when local government's revenue capacity is insufficient to cover the locality's service needs. Inman points out that an unfavorable economy and demographics, reduced external funds, and local policy influence the rate at which the local tax base shrinks.

Fiscal stress may be a result of local budgetary processes. Its extent can be measured by examining fiscal factors surrounding local budgetary processes. Therefore, "fiscal stress is a structural phenomenon, reflecting shifts in the social and economic conditions of the city" (Pagano and Moore 1985:23). Measurements of budgetary distress may include such variables as surplus (or deficits) in an operating budget (Gramlich 1978) and the availability of liquid assets relative to existing claims on those

assets (Howell and Stamm 1979). External factors usually influence local fiscal performance. Local budget constraints are dependent on national economic conditions and are not subject to local control. In this sense, some researchers have identified that fiscal stress is the result of excessive debt requirements (Peterson 1976; Clark and Fuchs 1977; Bahl, Jump, and Schroeder 1978; Aronson and King 1978); poor administrative qualities and mismanagement by public officials (Gerard 1976; Clark and Ferguson 1983); and urban age (Perry and Watkins 1977; Mollenkopf 1983).

Other approaches offer different sets of analytic measures. Nathan and Fossett (1979) presented a widely-cited urban conditions index which was based on the weighting of a community's per capita income, percentage of housing stock built before 1940, and the rate of population change. Fainstein and Fainstein (1976) argue that fiscal stress is affected by the amount of intergovernmental aid that a jurisdiction receives.

This existing literature provides no clear criteria for identifying local fiscal stress, because many studies have analyzed the specific socioeconomic conditions of individual cities. Furthermore, these studies have focused on only describing the current crisis. Thus, it is very difficult to apply these measurements to evaluate the local utilization of property tax abatement policy.

CHAPTER IV

THEORETICAL FRAMEWORK OF LOCAL UTILIZATION OF PROPERTY TAX ABATEMENT POLICY

4.1. Overview

The review of existing literature on the relationship between tax and expenditures, a firm's locational choice, and on local economic development policy in the previous chapter indicates that the proposed explanations alone are inadequate to explain the local utilization of the property tax abatement policy. Also, the literature implies that property tax abatements that cities offer are marginal to a firm's locational choice. The major factors in the choice of firm location are beyond a city's ability to influence. Assuming that property tax abatements have little value in creating local economic development in cities, some have argued that local governments use property tax abatement because of pressures from interjurisdictional competition in comparison to the relatively low political risk granting abatement. Yet, this explanation provides, at best, a partial answer; it does not explain the variations among cities in efforts to attract firm.

None of the previous studies has examined and provided rationale for why some communities choose certain economic development policies such as property tax abatement over others and at what levels. Also, the lack of meaningful empirical research points toward subtler and more comprehensive explanatory frameworks. In this context, this chapter presents a comprehensive framework for the analysis of local utilization of

tax abatement policy. The chapter starts with a description of tax abatement procedures in Michigan.

4.2. Procedures for Local Utilization of Manufacturing Property Tax Abatement in Michigan

Local utilization of manufacturing property tax abatement involves local governments offering industrial firms certain property tax incentives to encourage restoration or replacement of obsolete industrial facilities and to attract new plants. A goal of manufacturing property tax abatements is to promote local economic development by encouraging new private investment in a particular locale in the hopes of directly creating or retaining jobs and diversifying the tax base.

The process of local utilization of property tax abatement in Michigan consists of two major steps: 1) to establish a plant rehabilitation district or industrial development district; 2) to issues an industrial facilities exemption certificate. In the first step, a local government in which the total property tax levy is at least 30 mills, or in which a city income tax is levied, may establish a plant rehabilitation districts and industrial development districts. An additional condition of a plant rehabilitation district is the requirement that 50 percent of the state equalized valuation of industrial property within a proposed district must be obsolete industrial property. After the district is established, the approval of applications for Industrial Facilities Exemption Certificates is a two-step process. Applications are filed, reviewed and approved locally, but are also subject to review at the state level by the State Tax Commission and the Department of Commerce.

The State Tax Commission is ultimately responsible for final approval and issuance of Industrial Facilities Exemption Certificates.

The granting of property tax abatements is a local option left to the discretion of the legislative body of the local governmental unit, and is triggered by the establishment of a district on behalf of the firm which requests it.

Although the legislation makes no attempt to interfere with local autonomy by specifying how to make the trade-off between reward and incentive, it identifies a number of issues that must be considered before an abatement is approved. The state is concerned about jurisdictions competing with each other over firm location decisions. It also wants the locality to consider the revenue loss of tax abatement. P.A. 198 establishes guidelines in these areas but does not bind the local decision process. In particular, Section 9 of the law enumerates a set of criteria that must be considered before the local governmental legislature issues a resolution approving an application for the Industrial Facilities Exemption Certificate. The extent to which each of these criteria is instrumental in shaping local decisions varies.

The local jurisdiction is required to make a separate finding that the fiscal capacity of the taxing jurisdiction is not impaired by the abatement. The State Tax Commission must be notified when the exempt portion of state equalized valuation exceeds 5 percent of the total state equalized valuation of the jurisdiction. This provision is meant to force the locality to consider the impact of the abatement upon the local fiscal condition. The 5 percent guideline probably makes little sense to local officials. They regard the revenues foregone due to the tax abatement as uncollectible without the incentive. Further, due to underutilized capacity and previously established infrastructure,

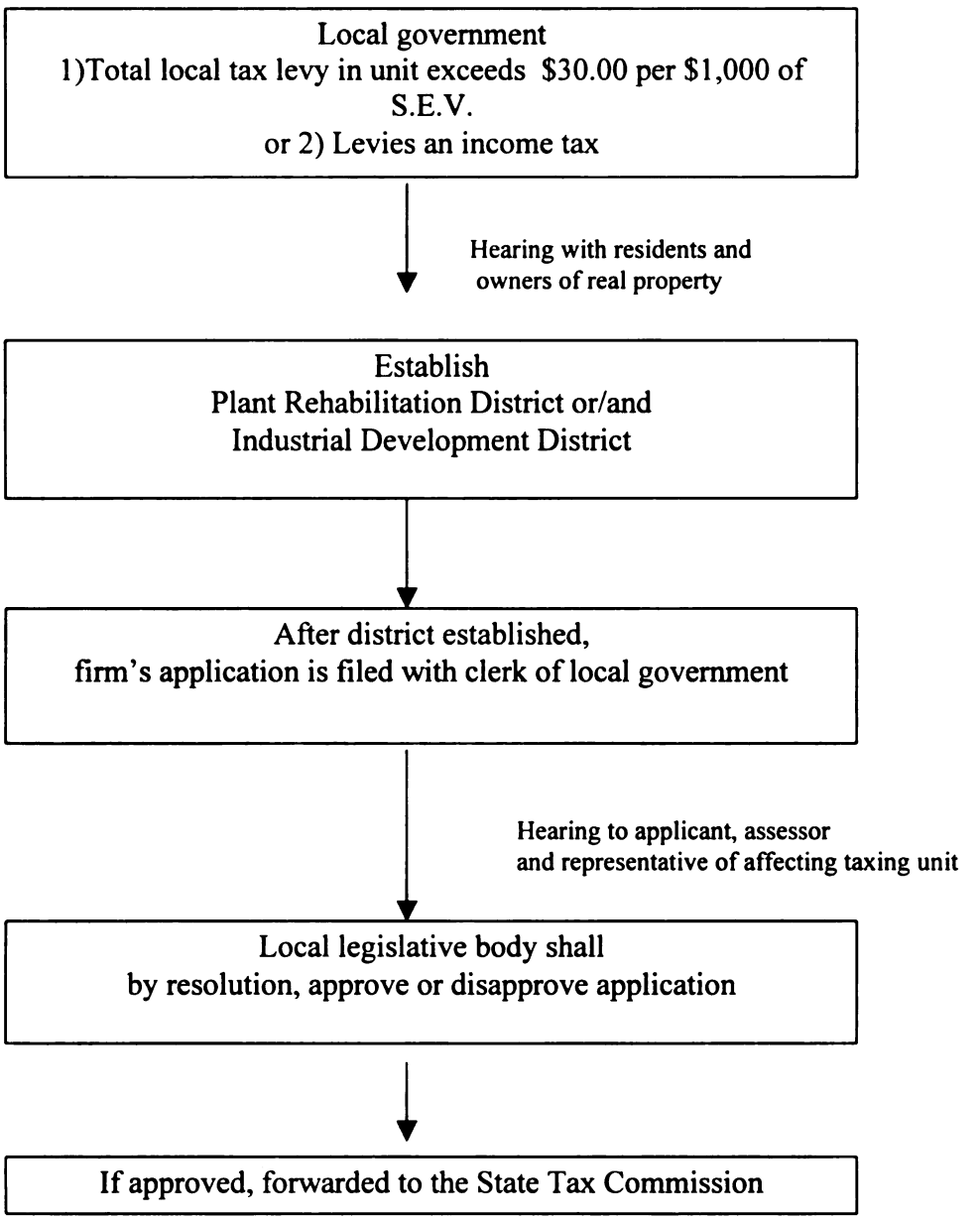
new developments do not impose major increase in serving costs in urbanized areas. In the case of school districts, property taxes lost through abatement are compensated by higher grants from the state school finance formula. Therefore, few circumstances exist where local official would value a judgment that the financial soundness of the taxing unit would be impaired.

Fiscal capacity is not the only criteria identified in Section 9; local employment impacts must be considered as well:

> Completion of the facility is calculated to, and will at the time of issuance of the certificate have the reasonable likelihood to create employment, retain employment, or prevent a loss of employment in the community in which the facility is situated. (Section 9c)

If Section 9c is interpreted narrowly, then any facility that was not fully automated could satisfy this requirement. Informed decision making necessitates a much more sophisticated regulation; one that recognizes the complex environment that exists. The decision maker must assess how likely investment would be without the incentive in order to lend meaning to the "reasonable likelihood" requirement. Also, local officials must still be concerned with the fiscal impairment criterion outlined in Section 9.1. Deciding how much employment is necessary to make up for lost tax revenue or what size abatement is necessary to induce investment is left to local discretion.

Figure 4.1. Process of Local Utilization of Manufacturing Property Tax abatement in Michigan



4.3. Conceptual Framework for Local Utilization of Property Tax Abatement

Local utilization of manufacturing property tax abatement involves local governments offering industrial firms certain property tax incentives to encourage restoration or replacement of obsolete industrial facilities and to attract new plants. A goal of manufacturing property tax abatements is to promote local economic development by encouraging new private investment in a particular locale in the hopes of directly creating or retaining jobs and diversifying the tax base. With all of the caveats described in the review of literature, property tax abatement may be an effective policy tool that some local governments can use to encourage economic development and increase community welfare. By reducing the price of capital facing investing firms, tax abatements can alter the firm's investment decision.

However, the choice of property tax abatement and level of property tax abated vary among cities. This variation can be explained by difference in local context. Thus, I will first discuss local condition – fiscal and economic – and their measurement. Then, I will conceptualize the relationship between local fiscal and economic conditions and the utilization of the property tax abatement.

4.3.1. Local Context

Local government operates and functions within a jurisdiction delimited by area and services. It has its own conditions of existence. It is subject to particular pressures and problems inherent in the local area. Differences among places are important.

Although all local governments are subject to certain common nonlocal pressures, they are affected by, and will respond to these differently, depending on specific local context. The local condition that creates the occasion for the choice is important since it entails some behavioral assumptions about how local problems are addressed.

In understanding the local context and its influence, the emphasis is neither on the institutional framework nor the policy environment. Rather it is on the context of meaning which shapes how policy problems are defined (Dunn, 1982). Once issues of definition are resolved, the choice of policy instruments becomes a relatively straightforward matter of matching tool to task. To say that the context determines the selection and performance of instruments, from this perspective, is to claim that the instrument and the problem share the same context of meaning.

The conceptual framework for the utilization of manufacturing property tax abatements can be derived from the premise that utilization of the property tax abatement at the local level is based on local needs. As described in the description of the Michigan law, two key factors are important; local fiscal capacity and local employment impact. The local jurisdiction is required to make a separate finding that the fiscal capacity of the taxing jurisdiction is not impaired by the abatement. This provision is meant to force the locality to consider the impact of the abatement upon the local fiscal capacity. On the other hand, the decision-maker must assess how likely investment would be without the incentive in order to lend meaning to the reasonable likelihood requirement. Thus, deciding how much employment is necessary to make up for the lost tax revenue or what size abatement is necessary to induce investment is left to local discretion. These decisions depend on local fiscal and economic conditions. Thus the variation in local

utilization of manufacturing property tax abatement among cities can be explained in the relation with local fiscal and economic performance.

The cities suffering from economic distress are not necessarily the same cities that are suffering form fiscal distress. In principle, the economic and fiscal performance of a city is a product of the activities of industries in the cities and broader urban area, the behavior of firms within the areas, and the local environment including fiscal policies of local governments. These fiscal and economic characteristics of a jurisdiction affect the local utilization of the property tax abatement. The interaction among these conditions is crucial to understanding local utilization of the property tax abatement. In the next sections, I will refine conceptual links between the local context and the local utilization of the property tax abatement.

4.3.2. Development of Local Fiscal and Economic Performance Measure

In this section, I will discuss the economic and fiscal performance of cities in Michigan during the 1980s. I will deal with two aspects of performance. First, what is the relative performance level of the cities on key economic and fiscal indicators? Second, are there similarities among groups of cities in terms of their economic and fiscal performance which could suggest the rationale for different levels of property tax abatement across group.

4.3.2.1 Defining Economic and Fiscal Performance

Economic performance level of a city describes the level of economic activity in a jurisdiction. The economic performance of cities is affected both by the overall change in manufacturing employment and consequent earnings and by continuous change in the location of economic activities. These considerations of both employment and income performance underscore the need for substantial economic development initiatives, particularly those related to increasing private jobs and the earned income associated with those jobs. In the relation with local utilization of property tax abatement, two aspects of the city economy are important here: economic health and economic structure. Economic health is the overall level of economic activity. It can be measured by the number of jobs per resident. It is closely linked to the wage and salaries generated in the city per resident, but it is not the same as the economic health of city residents, which is measured by their per capita income. Economic structure represents the distribution of private sector jobs between manufacturing and service activities.

Fiscal performance of a city represents the capacity of a local government to provide the public services, i.e. the ability of a locality to use sufficient revenues to afford to adequate level of public service. Fiscal capacity of local government is an important factor because state law requires that the fiscal capacity of the local government is not impaired by the abatement. The state law is meant to force the local government to consider the impact of the abatement upon the local fiscal capacity. The fiscal performance level of a city can be defined as the difference between the fiscal capacity of the local government relative to other governments and its cost for delivering a unit of service relative to the cost of other local governments for delivering that same unit of

service. Fiscal performance can be measured by tax burden, long term debt and common function expenditures.

4.3.2.2.1. Economic and Fiscal Performance Index of Cities

The study is concerned with the relationship between fiscal and economic performance of cities and local utilization of the property tax abatement. This focus leads to identification and examination of the key indicators of fiscal and economic performance of cities. In measuring differences in fiscal and economic performance among cities, two types of measures are important: relative performance, absolute levels of performance. The first point is that measures of fiscal and economic performance among cities are relative and only have meaning in comparison with other places. The study needs to develop measures that will provide relative comparison among cities. The second issue includes the absolute level and the change in level. Most measures of urban health can be expressed as either a level for a given point in time or rate over time. Tax abatement decisions are affected by historical changes of local indicators as well as the current level of fiscal and economic performance. Thus, the study needs to account for both the level of and the change in key indicators. A place which is in bad shape but getting better is clearly in a better condition than a place which is in bad shape and getting worse.

The indicators, which I will use to measure economic performance, are:

1) changes in the number of manufacturing jobs between time t to t-5
2) per capita income levels in time t

3) change in per capita income between time t to t-5
4) unemployment rate in time t
5) change in unemployment rate between time t to t-5.

The indicators used to measure fiscal performance are:

1) long-term debt in time t
2) common function expenditures in time t
3) changes in common function expenditures (all on per capita basis) between time t and t-5
4) tax burden at time t
5) change in tax burden between time t and t-5.

The numerical values of these variables were adjusted to standard deviations from the "all sample city" mean for each variable in order to make values more comparable across variables. The standard values were aggregated to produce performance indices for economic and fiscal distress.

The standard value is a relative measure for fiscal and economic distress, adjusting to the standard deviation from the all sample mean for each variable.

In formula,

$$Z_{ij} = \frac{X_{ij} - \overline{X_j}}{s_j},$$

where

Z_{ij} : standard score of *i*th jurisdiction for *j*th variable

s_j: standard deviation $_j$th variable $= \sqrt{s_j^2} = \sqrt{\sum_{i=1}^{N}(X_{ij} - \overline{X_j})^2}$

X_{ij} : numeric value of *i*th jurisdiction for *j*th variable

$\overline{X_j}$: the 'all sample city' mean for *j*th variable

For overall relative fiscal distress level for *i*th jurisdiction (FX_i),

$$FX_i = \frac{\sum_{k=1}^{5} Z_{ik}}{5},$$

where

FX_i: overall relative fiscal distress level for *i*th jurisdiction

Z_{ik} : standard score for each fiscal performance indicator for *i*th jurisdiction.

If the value of FX_i is negative, *i*th jurisdiction is relatively distressed in terms of fiscal performance. Otherwise, *i*th jurisdiction is not relatively distressed. The larger negative score of FX_i indicates that *i*th jurisdiction is more distressed in terms of fiscal performance.

For overall relative economic distress level for *i*th jurisdiction (EX_i),

$$EX_i = \frac{\sum_{l=1}^{5} Z_{il}}{5}$$

where

EX*i*: overall relative economic distress level for *i*th jurisdiction

$Z_{i\ l}$: standard score for each economic performance indicator for *i*th jurisdiction

If the value of EX_i is negative, *i*th jurisdiction is relatively distressed in terms of economic performance. Otherwise, *i*th jurisdiction is not relatively distressed. The larger negative score of EX_i indicates that *i*th jurisdiction is more distressed in terms of economic performance.

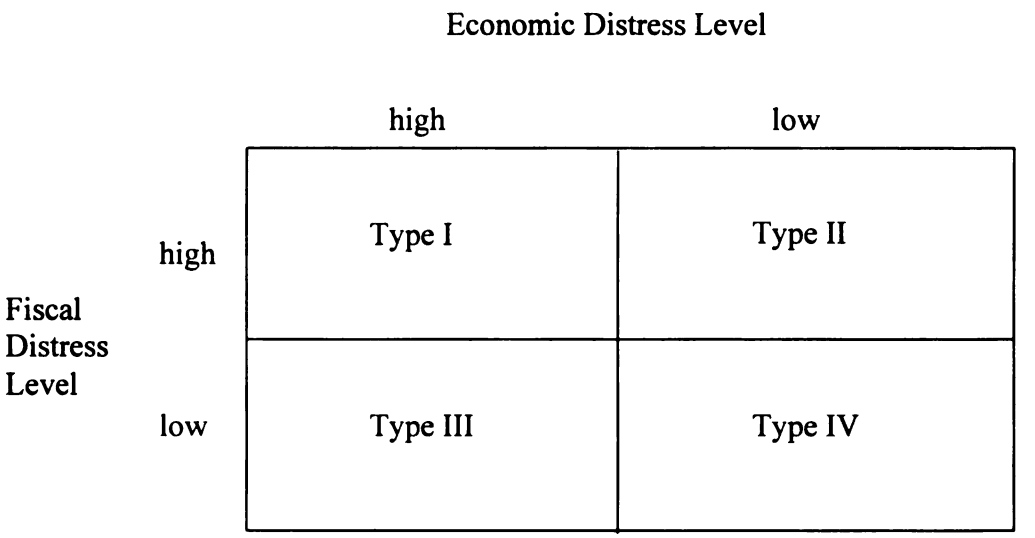
4.3.3. Relationship between Local Fiscal and Economic Performance and Local Utilization of Property Tax Abatement

The way in which variation in real-world fiscal and economic conditions affect the utilization of the property tax abatement is extraordinarily complex. This is the case because no two municipal economies develop in exactly the same way. Some local economies are growing, while others are maturing or declining. Also, cities have differences in their fiscal capacity for stimulating private-sector capital spending among existing and new industries. Complexity also results from local environmental factors such as a firm's response to local conditions, variations in local tax-expenditure patterns and spatial variations. All of these factors make it exceedingly difficult to gain clear understanding of the cause and effect relationships between local fiscal and economic conditions and the local utilization of the property tax abatement.

A conceptual framework is needed through which cities can be classified into relatively homogeneous fiscal and economic performance groups as a basis for analyzing the local utilization of the property tax abatement. I classified the 50 Michigan cities with population over 25,000 into four groups based on their relative level of fiscal and economic performance. This framework provides the basis for analyzing how fiscal and economic conditions affect the local utilization of the property tax abatement. The framework is based on the idea that cities with similar fiscal and economic conditions may make similar decisions in using the property tax abatement.

Figure 4.2 shows classification of community types by fiscal and economic performance. In the Figure 4.2, type I group represents cities which suffer from fiscal and economic distress. Type II cities are fiscally adverse while their economic performance is sound. Type III group cities are economically distressed while their fiscal performance is above the average. Type IV group cities are both fiscally and economically better off.

Figure 4.2. Classification of Communities Types by Fiscal and Economic Performance



The local utilization of property tax abatement can be explained 1) by the interaction between fiscal and economic conditions, 2) by the behavior of firms within the areas, and 3) by the local environment including fiscal policies of local governments. Basic to the local utilization of the property tax abatement is the perceived need and the capacity for localities to stimulate private-sector capital spending for job creation among existing and new industries.

Distressed cities in Type I can be identified using a variety of indicators such as high unemployment and population loss. If a small city is dependent on one or two large plants and these close down, the local government may face serious financial problems. The erosion of its tax base leads to reductions in services even if local taxes are increased

to the legal or political limit. Under such conditions, it becomes exceedingly difficult to attract any new industry or to retain existing business.

In the most distressed communities, the utilization of tax abatements can be confounded by several factors. First, advanced technology industries are unlikely to employ the long-term unemployed such as educationally and socially disadvantaged minorities or the older people laid off from manufacturing industries. The existing infrastructure may be in need of expensive repair as well. Second, the cities with the greatest needs often lack resources. Third, once some poor communities have been in decline for many years, recovery becomes successively less likely if infrastructure has deteriorated and the most productive sectors of the workers have emigrated, leaving and increasingly large dependent population to be supported on a dwindling tax base. It becomes progressively more difficult to attract either industry or labor in such circumstances. Finally, local governments are limited in the offsetting subsidies they can use to persuade businesses to locate in a particular area. Firms and their employers value clean air, good schools, pleasant surroundings, and low crime rates. These amenities are not often available in inner cities or depressed communities. Businesses also value the availability of business services and skilled labor, often preferring to locate near companies doing similar work (agglomeration effects). Thus, even though Type I communities confront the greatest need, they have severe difficulties in utilizing the property tax abatement program.

Pontiac and Highland Park are the cities that epitomize Type I. In case of Pontiac, the relative level of overall fiscal performance is so severe. (FXs are –2.476, -3.72, and –1.6 for 1982, 1987, and 1992 respectively.) The relative level of overall

economic performance of Pontiac is also severe. (EXs are –0.58, -102, and –1.63 for 1982, 1987, and 1992 respectively.) However, even though these cities have their severity in fiscal and economic performance, they rarely utilize the property tax abatement program. (Property tax abatement had been granted 3 times for Pontiac and 2 times for Highland Park during 1982-1992.)

Type II cities are generally in their early growth stages. They experience rapid and extensive private-sector investment as well as substantial population in-migration. These cities can suffer from fiscal imbalance since their financial spending is growing more rapidly than their economic base, thus pushing their tax, debt, and expense higher. Thus some such communities may adopt policies which discourage private sector investment. They are not willing to utilizing property tax abatement much. However, existing firms and new industries may negotiate with local governments to grant tax abatements. These demands for the property tax abatement will make these cities utilize the property tax abatement program.

Novi is the city that epitomizes Type II. Novi, one of fast growing communities, is not distressed economically, but the city has relative difficulties in fiscal performance. Novi is inactive in utilizing the property tax abatement program.

Type III cities, in contrast to Type II, are cities with older economies. As cities pass into the stage of industrial maturity, fall in private-sector investment off and a substantial loss of manufacturing employment induces. Even though cities may suffer form economic decline, their financial equilibrium balance appears to be within the control. Thus this group of cities has the most motivation to utilize the property tax abatement program to encourage economic restructuring. Grand Rapids and Jackson are

the cities that epitomize Type III. Their fiscal condition is relatively sound, but their economic condition, especially unemployment rate, is distressed. These cities are the most active cities in utilizing the property tax abatement program. (Grand Rapids granted tax abatements more than 300 times during 1982-1992.)

Type IV cities' fiscal and economic performances are better off. Most successful suburban cities belong to this group. These suburban cities generally benefit from central city growth activities. This has allowed suburban cities to become less dependent upon manufacturing industries and more linked to the service economy. Under such conditions, decision-makers of these cities may make little use of tax abatement programs to promote economic development but may devote significant attention to local environmental and land use issues. Allen Park and Farmington are the cities that epitomize Type IV. Their fiscal and economic performances are better off. They are not inactive in utilizing the property tax abatement program.

Figure 4.3 shows actual numbers of cities, which belong to community types by relative fiscal economic performance and how cities change their community types along with years.

Most of Type I cities do not move their community types much along with years. Among Type I cities, Bay City and Wyandott, which are more likely active in utilizing the property tax abatement program, change their community types from Type I to Type III. Even though large central cities among Type I cities, such as Flint, Saginaw and Detroit, are active in utilizing the property tax abatement program, they do not change their community types along with years. However, Pontiac and Highland are inactive in

granting tax abatements and their fiscal and economic conditions have gotten worse along with years.

Among Type II cities, Battle Creek and Dearborn move their community type from Type II to Type IV. These cities are more likely active in utilizing the property tax abatements. Even though Kalamazoo and Midland are active in utilizing the property tax abatements, they do not move their community type. However, the other Type II cities are less active in utilizing the property tax abatements and do not move their community type.

Type III cities are more likely active in utilizing the property tax abatements, but most cities do not change their community type. However, Grand Rapid, which is one of the most active cities in utilizing the property tax abatements, changes the community types from Type III to Type II. Also, Traylor moves community type from Type III to Type IV and to Type II. This means that these cities improve their economic performance level but their fiscal conditions get little bit worse through utilizing the property tax abatement program.

Most successful suburban cities belong to Type IV. These cities are not active in utilizing the property tax abatement program. However, some of fast growing cities among Type IV, such as Holland, Livonia, and Southfield, are more likely active in granting tax abatements. These cities move their community types from Type IV to Type II. These cities can suffer from fiscal imbalance since their financial spending is growing more rapidly than their economic base.

Figure 4.4 shows actual numbers of cities, which belong to community types by absolute value based on unemployment rate and budget deficit (per capita revenue minus

per capita expenditures). If a city has an unemployment rate of 8% or higher, then it can be classified into 'economically distressed city.' If a city has budget deficit, then it may be distressed fiscally.

This measure does not explain classification of community types much since the cities with high unemployment rate, 10% or higher, do not fall into Type I. Budget deficit may not be a good measure as a fiscal performance. However, the cities with high unemployment rate (10% or higher), such as Detroit, Flint, Highland, Pontiac, Port Huron, Saginaw, and Bay City, fall into Type I in the relative fiscal and economic performance measures.

In sum, some of Type I cities, such as large central cities, tend to utilize the property tax abatement program. But the program does not help these cities fiscal and economic conditions. In the case of Pontiac and Highland, even though these cities have their severity in fiscal and economic performance, they rarely utilize the property tax abatement program because of their unattractiveness to business. Most Type II and Type IV cities are not willing to grant tax abatements. However, Type III cities and some of fast growing cities in Type IV are more likely active in utilizing the property tax abatement program. In these cases, the program has some marginal effect to change communities' fiscal and economic conditions. In Type I cities, it seems that the program does not have much effect to cope with their severity in fiscal economic conditions.

Figure 4.3. Numbers of Cities in Communities Types by Each Year

(By relative level of fiscal and economic performance)

A. Cities in 1982

Fiscal Distress Level	Economic Distress Level: high	Economic Distress Level: low
high	8	7
low	16	19

B. Cities in 1987

Fiscal Distress Level	Economic Distress Level: high	Economic Distress Level: low
high	10	5
low	14	21

C. Cities in 1992

Fiscal Distress Level	Economic Distress Level: high	Economic Distress Level: low
high	10	12
low	13	15

Figure 4.4. Numbers of Cities in Communities Types by Each Year

(By unemployment rate and budget deficit)

A. Cities in 1982

Fiscal Distress Level	Economic Distress Level: high	Economic Distress Level: low
high	3	15
low	10	22

B. Cities in 1987

Fiscal Distress Level	Economic Distress Level: high	Economic Distress Level: low
high	7	12
low	11	20

C. Cities in 1992

Fiscal Distress Level	Economic Distress Level: high	Economic Distress Level: low
high	12	13
low	7	18

4.3.4. Local Environmental Factors in Utilizing Property Tax Abatement

The differences in environmental conditions surrounding local governments may cause the extent of local utilization of the property tax abatement program to vary across local governments. These factors are 1) local government structure, 2) spatial location, 3) local tax/expenditure policy, and 4) local social and structural conditions.

1) Government Structure

According to actor oriented theory, one of the important local factors that may affect the local utilization of property tax abatement is political leadership. Because the environment is uncertain and the net effects of tax abatement policy are undeterminable over the long run, the utilization of tax abatement becomes a political question, determined subjectively by the actors involved (Stone 1987). Because strong mayor system is expected to be more responsive to citizen and group pressures and more aggressive to adopt economic development policy than are politician in cities using the council-manager form, more property tax abatement is utilized in cities with a mayor-council government.

2) Spatial Variation

Local decision makers may provide tax abatement as defensive measures against regional competitors rather than using tax abatement as part of a well-formulated economic development plan (Bowman 1988, Gradt 1987; Peretz 1986). Decision makers in central city and nonmetropolitan communities are more likely to be influenced by the

level of regional competition than those in suburban communities because the central city and nonmetropolitan communities depend more heavily on their own economic base. There are several reasons to expect that central cities, suburbs, and nonmetropolitan cities will use tax abatement regarding local economic development. Suburban decision-makers are likely to be the least active in promoting development. In many suburban communities, in fact, there have been campaigns to limit growth (Baldassare 1981; Schneider 1989). Whereas central cities and nonmetropolitan cities are more dependent upon their own economic bases, suburbs generally benefit from central city growth activities -what Barry and Kasadra (1977) called the suburban spill-in effect. This has allowed suburbs to become less dependent upon manufacturing industries and more linked to the service economy (Schneider and Fernander 1989).

Under such conditions, suburban decision makers may use little tax abatement to promote economic development but may devote significant attention to local environmental and land use issues

3) Local Tax/Expenditure Policy

The effects of local tax/expenditure policies are more under the control of local governments than are other local conditions. Developmental expenditures of local government such as capital investment and highway expenditures improve the business climate in a city and provide attractiveness to firms. Thus decision-makers may use little tax abatement to encourage private investment.

4) Social Conditions

Social conditions of a city may describe the demands for a service-dependent population. The competition for limited resources between developmental and social concerns in a city may affect the local utilization of property tax abatement. These social conditions are somewhat related to local policy. Cities with service-dependent population are primarily oriented toward the support of social activities such as welfare and health, education and public housing. Thus the greater service-dependent population will negatively affect the local utilization of property tax abatements.

CHAPTER V

EMPIRICAL ANALYSIS

5.1 Overview

This chapter provides hypotheses for the research and a methodology for an empirical analysis of the local utilization of property tax abatement policy in Michigan cities. The analytical method of this study is a statistical analysis using multiple regression models that identify the relationship between local utilization of property tax abatement policy and local conditions such as local fiscal and economic performance, political factors, and environmental factors. Based on the relevant literature in Chapter Three and the conceptual framework in Chapter Four, this chapter specifies two types of analytical models: 1) a basic model, which focuses on local fiscal and economic conditions; and 2) an extended model, which considers local environmental factors.

5.2 Hypotheses

This study will analyze the relationship between the local utilization of the property tax abatement, which refers to the use of the property tax abatement to encourage local economic development, and local fiscal and economic conditions.

The basic hypothesis to be tested focuses on how local fiscal and economic condition are related to the local utilization of property tax abatements. Local governments use the property tax abatement program to encourage new private investment in the hopes of directly creating or retaining jobs and diversifying the tax base. This utilization of the property tax abatement at the local level is based on local needs. Although some argue that distressed cities are more inclined to offer abatements because of local needs, others argue that prosperous cities actually use abatements more because firms tend to locate in areas that are already economically successful, and are likely to apply for abatements in attractive places. These arguments about the relationship between the local utilization of the property tax abatement and local conditions are caused by confounding factors such as the behavior of firms and the local environment including the fiscal policies of local governments.

As discussed in the previous chapter, the decision to utilize the property tax abatements is affected by the perceived need and the capacity for localities to stimulate private sector capital spending for job creation. Even though a city perceives a local need to utilize the property tax abatement program, if its weak fiscal capacity is affected by the abatement and if there is little demand from firms due to its poor amenities, the community will find it hard to utilize the abatements. Cities, which suffer from economic decline but are fiscally sound, tend to use the property tax abatement program aggressively to attract private capital.

Thus this study deals with the fiscal performance and the economic performance of a city separately. Based on the conceptual framework, the hypotheses of this study may be postulated as follows: in a given city, economic distress level is positively related

to the degree of the local utilization of property tax abatements; and in a given city, fiscal distress level is negatively related to the local utilization of the property tax abatements. Each hypothesis can be reconstructed through its measurable variables.

The first set of hypotheses pertains to a city's economic performance. Two aspects of the city economy are important: economic health and economic structure. The economic health of cities is affected both by overall change in manufacturing employment and consequent earnings and continuous change in the location of economic activities. These considerations, both manufacturing employment and income performance, underscore the need for substantial economic development initiatives, particularly those related to increasing private jobs and the earned income associated with those jobs. Yet, per capita income better represent the economic health of city residents than the economic health of the city. The number of jobs is closely linked to earnings generated by city residents, but it is not the same as the economic health of city residents. Thus, changes in manufacturing employment rather than an income variable is most strongly related to the local utilization of the property tax abatement.

The economic structure of a city is represented by the distribution of private sector jobs between manufacturing and service activities. Since the manufacturing property tax abatement is granted to industrial firms to encourage restoration or replacement of existing obsolete industrial facilities and to attract new plants, cities with high dependency on manufacturing industry more aggressively utilize the property tax abatement program.

H1: In a given city, economic distress level relates positively to the degree of the local utilization of property tax abatements.

H1a: In a given city, negative change in manufacturing employment relates positively to the degree of the local utilization of property tax abatements.

H1b: In a given city, dependency on manufacturing industry relates positively to the degree of the local utilization of property tax abatements.

The second set of hypotheses pertains to fiscal performance. The fiscal performance level of a city can be defined as the difference between the fiscal capacity of the local government relative to other governments and its cost for delivering a unit of service relative to the cost of other local governments for delivering that same unit of service. Despite the appearance of no budget outlays, tax abatements are local tax expenditures that represent a forgone revenue stream. The lost revenues must be obtained from some other sources in order to balance local budgets. Property tax abatements for industrial property result in higher taxes for other classes to delivery the same public services. Thus, fiscally distressed cities have difficulties utilizing property tax abatements. In general, those local governments with the greater own-source revenues, find it easier to utilize tax abatements.

Reliance on a particular revenue source is also important to measure fiscal stress in a city. Property taxes are the main revenue source of local governments. In some way, the revenue growth potential of a local government is a function of property taxes, and the capacity to increase property tax rates is, in part, dependent on the size of the existing property tax burden. Thus, increase in property taxes is dependent not only on existing

tax burden and on legal restrictions on tax rates, but also on the political acceptance of a tax increase. Thus, reliance on per capita property tax and tax burden may negatively affect the local utilization of the property tax abatement.

H2: In a given city, fiscal distress level is negatively related to the local utilization of the property tax abatements.

H2a: In a given city, per capita own-source revenue is positively related to the local utilization of the property tax abatements.

H2b: In a given city, reliance on per capita property tax is negatively related to the local utilization of the property tax abatements.

H2c: In a given city, tax burden is negatively related to the local utilization of the property tax abatements.

5.3. Analytical Model

The purpose of this section is to develop a model that explains the variation in the utilization of property tax abatement. I propose a statistical method to find the relationship between the degree of local utilization of property tax abatement and local fiscal and economic indicators. The previous chapter contained a basic conceptual framework of what factors determine the level of local utilization of the manufacturing

property tax abatement at the local level. For a given city, this theory can be represented in general functional form as:

(5.1) $LUTA_i = luta(X_1, X_2, ----, X_n)$

Where local utilization of property tax abatement is the use of property tax abatement in *i* th local government, $X_1, X_2, ----, X_n$ are factors that are related to the degree of local utilization of property tax abatement.

As a dependent variable, the degree of local utilization of property tax abatement ($LUTA_i$) is measured in two ways: per capita amount of cumulative real market value of manufacturing property tax base abated away in the following period (t to t+5) divided by population (KTAP) and numbers of manufacturing property tax abatement issued in the following period (TANO).

5.3.1 Basic Model

The research question addressed in this study is how differing levels and changes of local fiscal and economic conditions affect the variation in utilizing the property tax abatement at the local level. Hence, first of all, the study asks what effects local fiscal and economic performance (distress) levels have on the local utilization of property tax abatement, holding the other local factors constant. This interest leads to the incorporation of local fiscal and economic indicators and variables into the analysis. In

this sense, the basic model (Model I) to estimate the relationship between local fiscal economic condition and the local utilization of property tax abatement is represented by (5.2).

$$(5.2) \qquad Y_i = \beta_0 + \sum_{k=1}^{k} \alpha_k FX_{ki} + \sum_{k=1}^{k} \gamma_k EX_{ki} + e_I$$

where

Y_i	is a local utilization of property tax abatement indicator;
β_0	is the intercept;
$\sum_{k=1}^{k} \alpha_k FX_{ki}$	are the effects of fiscal condition variables;
$\sum_{k=1}^{k} \gamma_k EX_{ki}$	are the effects of economic condition variables;
e_I	is the error term.

Equation (5.2) estimates the effect of local fiscal and economic condition on the local utilization of manufacturing property tax abatement. The variables for local fiscal condition are the level of and the change in per capita common-function expenditures, the level of and change in the tax burden, per capita debt, per capita non-tax revenues, per capita tax revenues, reliance on property tax revenues, the state equalized value of local property, city income tax as a dummy variable and per capita intergovernmental revenues from state and federal governments. The variables for local economic condition include rates of change in manufacturing employment, economic structure, the level of and the

change in median income, the level of and the change in unemployment rates and employment per resident.

Consequently, the new proposed basic model is shown in (5.3)

$$(5.3)\quad LUTA_i = \beta_0 + \beta_1 EXP_i + \beta_2 CEXP_i + \beta_3 TXB_i + \beta_4 CTXB_i + \beta_5 DEBT_i + \beta_6 OREV_i + \beta_7 TAX_i + \beta_8 PTXR_i + \beta_9 SEV_i + \beta_{10} INCTX_i + \beta_{11} INT_i + \beta_{12} RMEM_i + \beta_{13} MBASE_i + \beta_{14} INC_i + \beta_{15} CINC_I + \beta_{16} UNEMP_i + \beta_{17} CUNMP_i + \beta_{18} EMPP_i + e_I$$

where,

EXP : per capita common function expenditures
CEXP : change in per capita common function expenditures from time t-5 to t
TXB : tax burden
CTXB : change in tax burden from time t-5 to t
DEBT : per capita long-term debt
OREV : per capita non-tax revenues
TAX : per capita tax revenues
PTXR : per capita property tax revenues as a percentages of own-source revenues
SEV : state equalized valuation of local property
INT : intergovernmental transfer from state and federal government
INCTX : city income tax
RMEM : rate of change in manufacturing employment between time t-5 and t
MBASE : manufacturing employment as a percentage of total employment
INC : median income
CINC : change in median income between time t-5 and t
UNEMP : unemployment rate
CUNEMP: change in unemployment rate between time t-5 and t
EMPP : total employment per resident

5.3.2. Extended Model

As discussed in the previous chapter, the local utilization of the property tax abatement may be affected by various local environment factors as well as local fiscal

and economic factors. Some of these include spatial variation, local tax expenditure policy, social condition, and government structure. Thus the extended model incorporates these factors in the analysis in addition to the basic model. The above equation (5.2) is rewritten as:

$$(5.4) \qquad Y_i = \beta_0 + \sum_{k=1}^{k} \alpha_k FX_{ki} + \sum_{k=1}^{k} \gamma_k EX_{ki} + \sum_{k=1}^{k} \delta_k ENV_{ki} + e_I,$$

where

Y_i	is a local utilization of property tax abatement indicator;
β_0	is the intercept;
$\sum_{k=1}^{k} \alpha_k FX_{ki}$	are the effects of fiscal performance variables;
$\sum_{k=1}^{k} \gamma_k EX_{ki}$	are the effects of economic performance variables;
$\sum \delta_k ENV_{ki}$	are the effects of government structure, spatial variation, local policies, and social condition described the previous chapter;
e_I	is the error term.

In the extended model, local fiscal and economic variables were presented in the previous section in explaining the basic model. Among several local factors that may affect the local utilization of property tax abatement, one is political leadership. More property tax abatement is utilized in cities with a mayor-council government, where mayors expected

to be more responsive to citizen and group pressures than are politician in cities using the council-manager form. This governmental structure variable is included as a dummy variable. The second local environmental factor is spatial variation. Decision makers in central city and non-metropolitan communities are more likely to be influenced by the level of regional competition than those in suburban communities because, whereas suburbs generally benefit from central city growth activities, the central city and non-metropolitan communities depend more heavily on their own economic base. Thus suburban decision-makers may make little use of tax abatements to promote economic development. City's spatial status dummy variable (CS) will be used as an explanatory variable.

Third local factor that may affect the local utilization of property tax abatement is local policy. For the local expenditure policy variable, I divided local expenditures into three categories; redistributive expenditures, allocational expenditures and developmental expenditures. I use expenditures on education for redistributive expenditure; police and fire expenditures for allocational expenditures, and capital investment, highway and sewer expenditures for developmental expenditure. Cities with higher development expenditures per capita such as highway expenditure and capital investment will use less property tax abatement. Since capital investment and highway expenditures are alternative developmental policy to encourage local economic development and, in general, these cities have attractiveness to firms, they will not depend on the property tax abatement. Finally, I will use minority population, poverty, and population density to represent the social and structural conditions.

Consequently, the proposed extended model is shown in (5.5).

$$(5.5)\quad LUTA_i = \beta_0 + \beta_1 EXP_i + \beta_2 CEXP_i + \beta_3 TB_i + \beta_4 CTB_i + \beta_5 DEBT_i + \beta_6 REV_i + \beta_7 TAX_i + \beta_8 PTX_i + \beta_9 SEV_i + \beta_{10} INT_i + \beta_{11} INCTX_i + \beta_{12} RMEM_i + \beta_{13} MBASE_i + \beta_{14} INC_i + \beta_{15} CINC_I + \beta_{16} UNEMP_i + \beta_{17} CUNEMP_i + \beta_{18} GFORM_i + \beta_{19}\ CS_i + \beta_{20} CAP_i + \beta_{21} HW_i + \beta_{22} POL_i + \beta_{23} SEW_i + \beta_{24} EDU_i + \beta_{25} PRATE_i + \beta_{26} BALCK_i + \beta_{27} PDEN_i + \beta_{28} POVTY_i + \beta_{29} HV_i + e_i$$

where,

GFORM	: government form
CS	: city status
CAP	: capital investment
HW	: highway expenditure
POL	: police expenditure
SEW	: sewer expenditure
EDU	: education expenditure
PRATE	: property tax rate
BLACK	: percentages of black population
PDEN	: population density
POVTY	: percentages of population below poverty line
HV	: median home value

5.3.3. Reduced Model

The reduced regression model is proposed to resolve two possible violations of regression assumption, which may be inherent from full model. The one is autocorrelation, the other is multicollinearity. Before I will discuss the reduced regression model, I will first analyze the autocorrelation and multicollinearity problem of the full model (the Basic Model and the Extended Model).

5.3.3.1. Autocorrelation

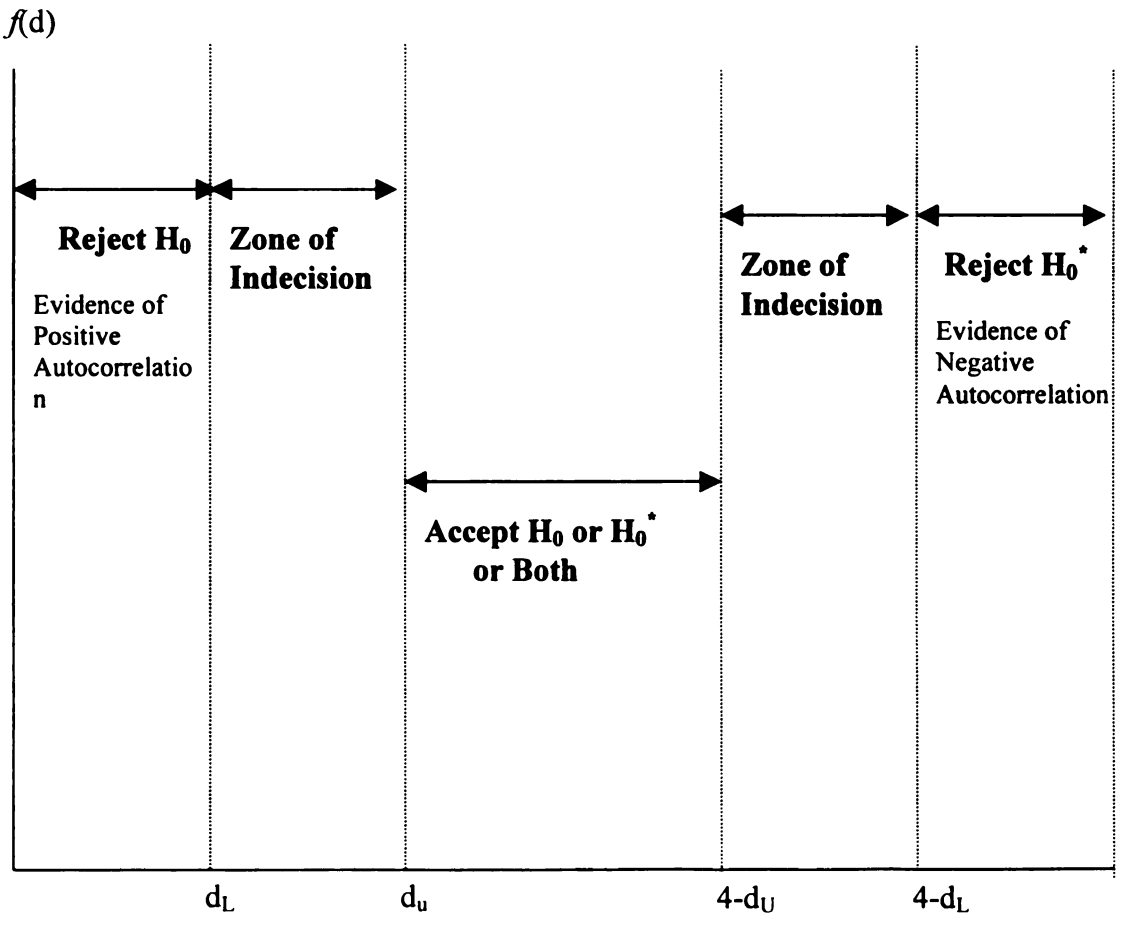
An important assumption of the classical linear regression model is that there is no autocorrelation or serial correlation among the disturbances. That is, the classical regression model assumes that the disturbance term relating to any observation id not influenced by the disturbance term relating to any other observation. However, since the study uses a panel data set and observations are derived from 1977, 1982, 1987 and 1992, the data set itself may have two possible sources, which autocorrelation may occur. The first source is that this panel data set includes time series data; the second source is manipulation of data. Because some socio-economic variables were not available for 1977, 1982, 1987, and 1992, it is necessary to extrapolate some values from the 1970, 1980 and 1990 U.S. Census. This extrapolation of data might impose upon the data a systematic pattern, which might not exist in the original data.

Thus, this study used the Durbin-Watson d test to detect autocorrelation between residuals. In the Durbin-Watson d test, decision rules are shown in Table 5.1 and Figure 5.1.

Table 5.1. Dubin – Watson d test: Decision rules

Null hypothesis	Decision	If
No positive autocorrelation	Reject	$0 < d < d_L$
No positive autocorrelation	No decision	$d_L < d < d_U$
No negative autocorrelation	Reject	$4 - d_L < d < 4$
No negative autocorrelation	No decision	$4 - d_U < d < 4 - d_L$
No autocorrelation	Do not reject	$d_U < d < 4 - d_U$

Figure 5.1. Dubin-Watson d test: Decision rules



From the Dubin-Watson tables, for the given sample size (n =150 in both model) and given number of explanatory variables (k = 16 in the Basic Model and k = 26 in the Extended Model), the critical d_L and d_U values at 0.01 level of significance are d_L = 1.400 and d_U = 1.863 for the Basic Model, and d_L = 1.340 and d_U = 1.931 for the Extended Model.

From the SPSS output result given in Table 5.3. and Table 5.4, the estimated Dubin-Watson d values are as follows:

KTAP

	Model I	Model II
Dubin-Watson d	2.259	2.257

TANO

	Model I	Model II
Dubin-Watson d	1.655	1.675

Thus, for KTAP,

Model I: $4 - d_U = 2.069 < d = 2.259 < 4 - d_L = 2.586$: No decision;

Model II: $4 - d_U = 2.153 < d = 2.257 < 4 - d_L = 2.660$: No decision.

For TANO,

Model I: $d_L = 1.4 < d = 1.655 < d_U = 1.863$: No decision;

Model II: $d_L = 1.4 < d = 1.675 < d_U = 1.863$: No decision.

Since d statistics in all four regression models fall in the indecisive zone (region of ignorance), we cannot conclude whether autocorrelation does or does not exist.

5.3.3.2. Multicollinearity

The independent variables in the full model (the basic model and the extended model) might be correlated linearly. A popular means of detecting multicollinearity is through the use of the correlation matrix. In this study, Pearson correlation technique is applied to investigate the correlation among independent variables. In a matrix of simple correlation coefficients between all pair of the independent variables, a high value (about 0.8 or 0.9 in absolute value) of one of these correlation coefficients indicates high correlation between the two independent variables to which it refers (Kennedy, 1987; p. 150). The correlation matrix of independent variables in the full model is presented in Table 5.2. Among correlation coefficients of independent variables, most correlation coefficients are moderate and very low. However, the level of per capita expenditure (EXP) and per capita other revenue source (OREV) are highly correlated with the tax burden (TXB). Their correlation coefficients are 0.944 and 0.952 respectively. Thus, these variables need to be eliminated for regression analysis. The coefficient of employment per resident (EMPP) to the level of poverty (PRTY) is shows high (-0.824). Therefore, one of these variables needs to be eliminated for regression analysis.

Table 5.2. Correlation Coefficient Among Independent Variables

	cexp	cap	black	cinc	ctxb	cunemp	debt	empp	gform	inctx	exp	hw	inc	int
cexp	1													
cap	0.043	1												
black	-0.101	0.057	1											
cinc	0.289	0.003	-0.156	1										
ctxb	0.484	-0.051	-0.002	-0.26	1									
cunemp	-0.21	-0.098	0.092	-0.227	0.027	1								
debt	-0.053	0.453	0.283	-0.212	0.124	-0.296	1							
empp	0.206	-0.008	-0.62	0.258	0.011	-0.211	-0.321	1						
gform	-0.012	-0.131	0.039	0.005	0.004	0.228	-0.084	-0.188	1					
inctx	-0.081	0.209	0.58	-0.098	0.06	-0.011	0.374	-0.636	0.075	1				
exp	0.106	0.245	0.501	-0.056	0.187	-0.092	0.566	-0.481	0.173	0.603	1			
hw	0.164	0.128	0.185	0.073	0.048	-0.177	0.118	-0.093	-0.082	0.164	0.26	1		
inc	0.254	0.02	-0.455	-0.146	-0.02	-0.045	-0.091	0.276	-0.121	-0.189	-0.262	0.1	1	
int	-0.028	0.305	0.684	-0.196	0.076	0.027	0.447	-0.629	0.103	0.755	0.742	0.184	-0.486	1
pol	0.069	0.15	0.566	0.034	0.157	-0.002	0.364	-0.335	0.036	0.418	0.611	0.35	-0.092	0.595
sev	0.071	0.261	0.306	0.005	0.024	0.057	0.156	0.016	0.161	0.211	0.266	0.064	0.068	0.417
sew	0.145	0.302	0.201	0.077	0.124	-0.382	0.28	-0.26	-0.093	0.199	0.322	0.136	-0.11	0.366
mbase	-0.048	-0.007	-0.148	0	-0.061	0.349	-0.049	-0.117	0.196	-0.119	-0.113	-0.206	-0.12	-0.156
tax	0.105	0.24	0.368	0.078	0.054	-0.098	0.315	-0.228	0.046	0.451	0.676	0.383	0.114	0.531
orev	-0.034	0.201	0.314	-0.005	0.132	-0.083	0.534	-0.373	0.201	0.449	0.93	0.197	-0.165	0.544
pden	-0.148	-0.317	0.244	-0.242	0.061	0.345	-0.164	-0.25	0.16	0.104	0.058	-0.08	-0.07	0.183
prate	-0.091	-0.143	0.482	0.035	-0.011	-0.027	0.129	-0.448	0.214	0.264	0.289	0.229	-0.368	0.363
prty	-0.086	0.094	0.722	-0.034	0.003	-0.087	0.401	-0.824	0.071	0.718	0.576	0.2	-0.289	0.739
ptxr	0.19	-0.254	-0.465	0.183	-0.053	0.102	-0.528	0.59	-0.09	-0.729	-0.58	-0.043	0.655	-0.678
rmem	0.205	0.114	-0.289	0.129	-0.059	-0.109	-0.072	0.364	-0.144	-0.263	-0.277	-0.074	0.059	-0.288
cs	0.063	0.337	0.379	0.05	0.114	-0.307	0.467	-0.358	-0.21	0.571	0.443	0.125	-0.177	0.606
txb	-0.081	0.179	0.459	-0.126	0.137	-0.048	0.581	-0.548	0.21	0.593	0.944	0.165	-0.411	0.67
unemp	-0.06	-0.063	0.595	-0.083	0.043	0.195	0.21	-0.782	0.074	0.589	0.441	0.16	-0.637	0.557

Table 5.2. (Continued)

	pol	sev	sew	mbase	tax	orev	pden	prate	prty	ptxr	rmem	cs	txb	unemp
cexp														
cap														
black														
cinc														
ctxb														
cunemp														
debt														
empp														
gform														
inctx														
exp														
hw														
inc														
int														
pol	1													
sev	0.485	1												
sew	0.238	0.162	1											
mbase	-0.214	-0.023	0.008	1										
tax	0.72	0.451	0.311	-0.251	1									
orev	0.465	0.136	0.224	-0.076	0.603	1								
pden	0.166	0.046	-0.154	-0.188	0.002	-0.009	1							
prate	0.384	-0.118	0.008	-0.349	0.201	0.198	0.567	1						
prty	0.497	0.04	0.31	-0.207	0.317	0.414	0.191	0.573	1					
ptxr	-0.192	-0.065	-0.259	0.058	-0.074	-0.531	0.026	-0.183	-0.691	1				
rmem	-0.243	-0.017	-0.076	0.162	-0.103	-0.231	-0.411	-0.274	-0.347	0.225	1			
cs	0.239	0.173	0.392	-0.214	0.258	0.31	-0.153	0.116	0.54	-0.638	-0.105	1		
txb	0.482	0.094	0.207	-0.058	0.527	0.952	0.072	0.312	0.59	-0.668	-0.308	0.396	1	
unemp	0.366	-0.067	0.067	0.089	0.178	0.319	0.209	0.439	0.788	-0.493	-0.301	0.313	0.508	1

5.3.3.3. Reduced Model

As discussed in the previous section, even though the four regression equations in the basic model and the extended model do not have severe autocorrelation problems, we cannot also conclude that there are no autocorrelation. Thus, it needs to reconstruct model to check possible sources of autocorrelation. To do this, the study needs to rerun regressions by dividing pooled time-series cross-section data set into 3 separate cross-sections data set (82, 87, 92). However, because each of three cross-section data set includes only 50 observations, 26 explanatory variables are too much for the model. I will reduce explanatory variables from 26 to 11, which is appropriate to small data set (50 observations).

Also, as discussed in the previous section, the level of per capita expenditure (EXP) and per capita other revenue source (OREV) are highly correlated with the tax burden (TXB), these variables are eliminated in the reduced model. The coefficient of employment per resident (EMPP) to the level of poverty (PRTY) is shows high (-0.824). Therefore, one of these variables needs to be eliminated for regression analysis.

Consequently, the new proposed reduced regression model is shown in (5.6)

$$5.6 \quad LUTA_i = \beta_0 + \beta_1 TXB_i + \beta_2 CTXB_i + \beta_3 TAX_i + \beta_4 PTXR_i + \beta_5 SEV_i + \beta_6 RMEM_i + \beta_7 MBASE_i + \beta_8 INC_i + \beta_9 CINC_I + \beta_{10} UNEMP_i + \beta_{11} CUNMP_i + e_I$$

5.4. Data and Variables

5.4.1 Data

The Michigan cities are chosen as the area from which to gather data for the empirical analysis. A major reason for choosing the cities of Michigan is the use of property tax abatement by localities. The state of Michigan has passed legislation that allows communities the right to grant manufacturing property tax abatements. Michigan's Public Act 198, enacted July 9, 1974 and titled "Michigan's Plant Rehabilitation and Industrial Employment Act," was the first of this legislation. In effect today, manufacturing property tax abatements can be granted at a community's discretion for up to 12 years. For a new manufacturing facility the abatement is equal to one-half the normal property assessment. For a rehabilitated manufacturing facility the property assessment is frozen at the level before rehabilitation. Firms granted a manufacturing property abatement pay what is called an "Industrial Facilities Tax" instead of the standard property tax.

For the study, a panel data set will be used because a single cross-section of Michigan cities results in too small of a data set. The panel data set consists of four pooled cross sections beginning in 1977 and continuing in five-year increments up to 1992. A five-year period is believed to be a period long enough to allow for substantial adjustment in local property and non-residential property abatement values.

The availability of data limited to cities with populations greater than 25,000 in 1990. The result is a sample of 50 cities for end of the four cross sections or a total panel of 200 observation.

Because observations are desired from 1977, 1982, 1987 and 1992, and some socio-economic variables were not available for these years, it is necessary to extrapolate some values from the 1970, 1980 and 1990 U.S. Census. All nominal dollar values have been placed in 1982 real dollars using the Detroit Consumer Price Index.

5.4.2 Data Source

A portion of the data needed for the study was collected from the published documents of the U.S. Census Bureau and from other federal and state agencies. SEV and average property tax rate for city come from *State Equalized Valuations and Average Tax Rate Data*, Property Tax Commission, Michigan Department of Treasury, for 1977, 1982, 1987 and 1992. The data for economic variables are gathered from *City and County Databook,* U.S. Census Bureau. The socio-economic variables are gathered and calculated from *Characteristics of the Population - Michigan, 1970, 1980 and 1990*, U.S. Census Bureau. City government's fiscal data comes from *Finances of Municipal and Township*, *Census of Governments,* U.S. Census Bureau. The data for education expenditure are gathered from *Finances of School Districts, Census of Governments*, 1977, 1982, 1987, and 1992.

Tax abatement data is calculated from the raw data file of Property Tax Commission, Michigan Department of Treasury. The data for government structure

variable and city bond rating are collected from *Municipal Year Book, 1977, 1982, 1987, 1992.*

Table 5.3. Variables and Definitions

	Variable	Definition	
Dependent	KTAP	per capita amount of cumulative real market value of manufacturing property tax base abated away in the following period (t to t+5) divided by population	dollar
	TANO	numbers of manufacturing property tax abatement issued in the following period (t to t+5)	number
Independent	EXP	per capita common-function expenditure	dollar
	CEXP	change in per capita common-function expenditure from time t-5 to t	%
	TXB	tax burden which is defined as the ratio of own source revenues per capita to per capita income	%
	CTXB	change in tax burden from time t-5 to t	%
	DEBT	per capita long-term debt	dollar
	OREV	per capita non-tax revenues	dollar
	TAX	per capita tax revenues	dollar
	PTXR	per capita property tax revenue as a percentages of own-source revenue	%
	SEV	state equalized valuation of local property divided by area	dollar
	INT	per capita intergovernmental revenue from state and federal government	dollar
	RMEM	change rate in manufacturing employment between time t-5 and t	%
	MBASE	percentage of manufacturing employment among total employment	%
	INC	median income	dollar
	CINC	change in median income between time t-5 and t	%
	UNEMP	unemployment rate	%
	CUNEMP	change in unemployment rate between time t-5 and t	%
	EMPP	total employment per resident	person
	GFORM	government form; dummy variable; "1" for mayor-council system, otherwise "0"	
	CS	city status; dummy variable; "1" for central city, otherwise "0"	
	CAP	Per capita capital investment	dollar

	HW	Per capita highway expenditures	dollar
	POL	Per capita police expenditures	dollar
	SEW	Per capita sewer expenditures	dollar
	EDU	education expenditures	dollar
	INCTX	Income tax	dummy variable
	PRATE	property tax rate	
	BLACK	percentages of black population	%
	PDEN	population density per square mile	person
	POVTY	percentages of population below poverty line	%
	HV	median home value	dollar

Table 5.4. Variable Derivation and Sources

The variables were calculated for of the 50 cities used in this dissertation for each of the years listed.

Variable	Derivation for Year "t"	Sources
$Deflator_t$	1977, '82, '87, '92: (1982 base Detroit Consumer Price Index for all items)$_t$ / 97.	Bureau of Labor Statistics, U.S. Department of Commerce.
POP_t	1977: {(1970 population + .7 (1980 population - 1970 population)}. 1982: {(1980 population + .2 (1990 population - 1980 population)}. 1987: {(1980 population + .7 (1990 population - 1980 population)}. 1992: {(1990 population + .2 (1990 population - 1980 population)}.	U.S. Census Bureau (1970, 1980, 1990), Characteristics of the Population – Michigan, U.S. Department of the Commerce, Washington, D.C.
AREA	1977, `82, `87, `92: (square miles)$_t$.	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce.
$KTAP_t$	1982, '87, '92, '94: {(sum of state-equalized assessed value manufacturing property abatements through year)$_t$ / POP_t / deflator }$_t$.	Calculated from computer file. Michigan Property Tax Commission, Michigan Department of Treasury, Lansing, Michigan.
EXP_t	1977, `82, `87, `92: {(common function expenditures) / POP_t /	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department

	deflator $\}_t$.	of Commerce.
$CEXP_t$	1982, `87, `92: $\{(EXP_t - EXP_{t-5})/ EXP_{t-5}\}_t$	
TXB_t	1977, 1982, 1987, 1992: {(own source revenue per capita/deflator) / (per capita income/deflator)}$_t$.	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce.
$CTXB_t$	1982, 1987, 1992: $\{(TXB_t - TXB_{t-5})/ TXB_{t-5}\}_t$	
$DEBT_t$	1977, '82, '87, '92: (Per capita outstanding debt / deflator)$_t$.	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce.
$OREV_t$	1977, '82, '87, '92: {(per capita own source revenue – per capita tax revenue) / deflator}$_t$.	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce.
TAX_t	1977, '82, '87, '92: (Per capita tax revenue / deflator)$_t$.	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce.
$PTXR_t$	1977, '82, '87, '92: {(per capita Property tax / deflator) / (own source revenue per capita / deflator)}$_t$ * 100.	
SEV_t	1977, '82, '87, '92: (state equalized assessed value property / area / deflator)$_t$.	State Equalized Valuations and Average Tax Rate Data, 1977, 1982, 1987, 1992, Property tax Commission, Michigan Department of Treasury.
INT_t	1977, '82, '87, '92: (per capita intergovernmental revenue from state and federal government / deflator)$_t$.	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce
$RMEM_t$	1982, '87, '92: $\{(\text{manufacturing employment}_t - \text{manufacturing employment}_{t-5}) / \text{manufacturing employment}_{t-5}\}_t$	U.S. Census Bureau (1970, 1980, 1990), Characteristics of the Population – Michigan, U.S. Department of the Commerce, Washington, D.C.
$MBSE_t$	1982, '87, '92: (manufacturing employment / total employment over 16 years old)$_t$	U.S. Census Bureau (1970, 1980, 1990), Characteristics of the Population – Michigan, U.S. Department of the Commerce,

		Washington, D.C.
INC_t	1977, '82, '87, '92: (median household income / deflator)$_t$	U.S. Census Bureau (1970, 1980, 1990), Characteristics of the Population – Michigan, U.S. Department of the Commerce, Washington, D.C.
$CINC_t$	1982, '87, '92: {($INC_t - INC_{t-5}$)/ INC_{t-5}}$_t$	
$UNEMP_t$	1977, '82, '87, '92: unemployment rate	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce
$CUNEMP_t$	1982, '87, '92: {($UNEMP_t - UNEMP_{t-5}$)/ $UNEMP_{t-5}$}$_t$	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce
$EMPP_t$	1977, '82, '87, '92: (total employment over 16 year old / population)$_t$ *1000.	U.S. Census Bureau (1970, 1980, 1990), Characteristics of the Population – Michigan, U.S. Department of the Commerce, Washington, D.C.
$GFORM_t$	1977, '82, '87, '92: (equals "1" if major-council form, otherwise "0")$_t$.	Municipal Year Book, 1977, 1982, 1987, 1992, ICMA
CS_t	1977, '82, '87, '92: (equals "1" if central city, otherwise "0")$_t$.	Municipal Year Book, 1977, 1982, 1987, 1992, ICMA
CAP_t	1977, '82, '87, '92: (per capita capital investment / deflator)$_t$.	Census of Governments, 1977, 1982, 1987, 1992. Government Finances, Finances of Municipal and Township Governments, U.S. Department of Commerce.
HW_t	1977, '82, '87, '92: (per capita highway expenditure / deflator)$_t$.	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce
POL_t	1977, '82, '87, '92: (per capita police expenditure / deflator)$_t$.	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce
SEW_t	1977, '82, '87, '92: (per capita sewer expenditure / deflator)$_t$.	County and City Data Book, 1977, 1982, 1987, 1994. U.S. Department of Commerce
$EDUEXP_t$	1977, '82, '87, '92: (general education expenditure / enrollment / deflator)$_t$.	Census of Governments, 1977, 1982, 1987, 1992. Government Finances, Finances of Public School Systems, U.S. Department of Commerce.
$PRATE_t$	1977, '82, '87, '92: (average	State Equalized Valuations and

	property tax rate)$_t$	Average Tax Rate Data, 1977, 1982, 1987, 1992, Property tax Commission, Michigan Department of Treasury.
$BLACK_t$	1977, '82, '87, '92: (Black population / population)$_t$ * 100.	U.S. Census Bureau (1970, 1980, 1990), Characteristics of the Population – Michigan, U.S. Department of the Commerce, Washington, D.C.
$PDEN_t$	1977, '82, '87, '92: (population / area)$_t$	U.S. Census Bureau (1970, 1980, 1990), Characteristics of the Population – Michigan, U.S. Department of the Commerce, Washington, D.C.
HV_t	1977, '82, '87, '92: (median housing value / deflator)$_t$	U.S. Census Bureau (1970, 1980, 1990), Characteristics of the Population – Michigan, U.S. Department of the Commerce, Washington, D.C.
$INCTX_t$	1977, '82, '87, '92: (equals "1" if imposes city income tax, otherwise "0")$_t$.	

5.5. Results of Empirical Analysis

This section presents the results of the empirical analysis, which attempts to investigate the relationship between the degree of local utilization of property tax abatement and local fiscal and economic conditions. To induce appropriate results, this study uses two types of analytical models: a basic model (Model I), which focuses on local fiscal and economic conditions; and an extended model (Model II), which considers local environmental factors.

Dependent variables for the empirical models include two types of measures of the local utilization of property tax abatement; 1) per capita amount of cumulative real market value of manufacturing property tax base abated away (KTAP) and 2) the number of manufacturing property tax abatements issued (TANO). The results of the empirical analysis illustrate that the interlocal differences in fiscal and economic conditions are related to variation in the degree of the local utilization of the property tax abatement.

5.5.1. Regression Results

This study can test the null hypothesis that there is no effect of local fiscal and economic conditions on the local utilization of property tax abatement. Based on the preliminary regression run for the purpose of testing this hypothesis, this study performed F tests. These tests indicated that the null hypothesis of no effect of local fiscal and

economic conditions on the local utilization of property tax abatement could not be accepted for the Michigan cities sample during 1977-1992. On the basis of the test performed, however, this study cannot ascertain whether the variation in utilizing property tax abatements in Michigan cities is primarily a consequence of the fact that cities are faced with different environmental conditions or, rather, are due to their fiscal and economic conditions.

The data were analyzed so as to determine whether the fiscal and economic conditions of a given city are related to the variation in utilizing property tax abatements. Thus the discussion of statistical results is focused on the identification of relationships between local fiscal and economic conditions and the utilization of property tax abatement.

Model I only considers local fiscal and economic variables to identify the relationship between local fiscal and economic performance and the degree of the local utilization of property tax abatements. In Model II, local environmental variables, which may affect the local utilization of property tax abatements, are included. The local environmental variables are as follows; governmental structure dummy variable (GFORM); city status dummy variable (CS) as a spatial variation variable; per capita capital investment of a city (CAP), per capita highway expenditure (HW), per capita police expenditure (POL), per capita sewer expenditure (SEW), income tax dummy variable (INCTX), and average property tax rate (PRATE) as local tax/expenditure policy variables; percentages of black population over total population (BLACK), population density (PDEN), and population below poverty line (POVTY) as social-structural variables. These regression models yielded the coefficient estimates presented in Tables

5.5 and 5.6. Listed for each of the two models are the coefficient's estimates and their t-value, squared multiple R, and F values.

5.5.1.1. Determinants of the Local Utilization of Property Tax Abatement (KTAP)

Two regression equations such as the basic model (Model I) and the extended model (Model II) are estimated using the per capita amount of manufacturing property tax abated away (KTAP) as the dependent variable. The outcome is presented in Table 5.3. While the explanatory power of Model I is relatively low (R2=.365), that of Model II is relatively high (R2 = .667).The F statistics of these models are 3.347 and 3.380 respectively.

Fiscal Condition

Among variables representing local fiscal condition, per capita tax revenue (TAX) and the level of reliance on property tax (PTXR) prove the most significant variables in both models. The level of per capita tax revenue, whose coefficient is 10.955 and t-value is 2.212 in Model I and 18.466 and 2.738 respectively in Model II, is most significantly related to the degree of local utilization of property tax abatement in terms of per capita amount of property tax abated (KTAP). This value is statically significant at 5 percent and at 1 percent in Model I and in Model II respectively.

Table 5.5: Determinant of Local Utilization of Property Tax Abatement

(Dependent variable: KTAP)

Variable	Model I	Model II
CONSTANT	1003.48	-1661.16
	(.323)	(-.300)
CEXP	-8.969	-14.079
	(-.552)	(-.604)
TXB	-42786.6	-19837.5
	(-1.130)	(-.448)
CTXB	-9.592	17.78
	(-.676)	(.885)
DEBT	.106	.437
	(.186)	(.635)
OREV	3.547	-1.342
	(.776)	(-.246)
TAX	10.955**	18.466***
	(2.212)	(2.738)
PTXR	-82.059*	-77.532*
	(-1.465)	(-1.954)
SEV	-2.399E-08	-1.76E-07
	(-.092)	(-.274)
INT	-3.639	2.821
	(-1.036)	(.652)
RMEM	2.36	-15.551
	(.261)	(-1.631)
MBSAE	86.144***	100.12**
	(3.401)	(2.488)
INC	-8.511E-02	-1.5E-02
	(-.354)	(-061)
CINC	31.180*	45.214*
	(1.764)	(1.813)
UNEMP	40.658	36.499
	(.367)	(.191)
CUNEMP	-68.406***	-45.639
	(-2.802)	(-1.483)
EMPP	1.976	-7.860
	(.382)	(-.748)
GFORM		1635.508**
		(2.628)
CS		846.074
		(.970)
CAP		-5.369*
		(-1.874)
HW		-16.481
		(-1.648)
POL		-4.67
		(-.381)

SEW		-2.312
		(-.471)
INCTX		-613.028
		(-061)
PRATE		47.429
		(1.156)
BLACK		-48.602
		(-1.29)
PDEN		-.557**
		(-2.478)
POVTY		-34.579
		(-.341)
R^2	.365	.667
F	3.347	3.380

Note: t values are in parentheses.
*, **, and *** indicate significance at 10%, 5%, and 1% level respectively.

These result shows that cities with less fiscally distressed tend to use tax abatement program more, contradicting the conventional notion that the fiscally distressed communities will use more the property tax abatement program.

The elasticity of reliance on property tax revenue (PTXR) is estimated to - 82.059 and t value is -1.954 in Model I. This means that the level of the reliance on property tax revenue (PTXR) is an important variable explaining the local utilization of property tax abatement. The result shows that the level of the reliance on property tax revenue (PTXR) is negatively related to the local utilization of property tax abatement in the hypothesized direction. That is, cities with higher reliance on property tax revenues will not use the property tax abatement program much because of their limited capacity to increase property tax rate. In part, increase in property taxes is dependent not only on existing tax burden and legal restrictions, but also on the political acceptance of a tax

increase. Thus higher reliance on property tax abatement may negatively affect the local utilization. Also, the result shows that tax burden (TXB), change in tax burden (CTXB), and per capita other revenue (OREV) relate to the local utilization of property tax abatement in the hypothesized directions, but those relationships are not statically significant.

Economic Condition

Among variables representing economic condition, manufacturing employment as a percentages of total employment (MBASE), change in median income (CINC) and change in unemployment rate (CUNEMP) are most significant variables in both models. Percentages of manufacturing employment among total employment (MBASE), which represents city's economic structure, is most significantly related to the degree of local utilization of property tax abatement in terms of per capita amount of property tax abated (KTAP). Its coefficient is 86.144 and t-value is 3.401 in Model I and 100.12 and 2.488 respectively in Model II. This value is statically significant at least at the 5 percent level in both models.

One of the statistically significant and consistent results is obtained for change in median income (CINC). Change in median income consistently shows positive coefficients (31.18 for Model I and 45.124 for Model II), and is statistically significant at the 10 percent level in both models. This means that growing cities in terms of median income tend to grant property tax abatements more. However, one of the interesting results is that, even though it is not statistically significant, the coefficient for the level of median income has negative sign consistently in both models. While cities with

increasing median income tend to grant property tax abatements more, cities with higher median income do not use the property tax abatement program much to encourage private investment.

Another variable, which has statistically significant and consistent results, is change in unemployment rate (CUNEMP). Change in unemployment rate (CUNEMP) consistently shows negative coefficients (- 68.406 for Model I and - 45.214 for Model II), and is statistically significant at the 1 percent level in Model I. This means that declining cities with increasing unemployment rate have difficulties granting property tax abatements more.

The change rate in manufacturing employment (RMEM) is not significant in Model I, but it appears to have a reasonable level of statistically significance (at 15 percent level) in the hypothesized direction in Model II. That is, increase in changing rate of manufacturing employment will affect negatively the utilization of property tax abatement.

Local Environmental Factors

Model II (The extended model) shows the effects of local environmental variables on the local utilization of property tax abatements. Among local environmental variables, four variables appear to have some statistical significance. The coefficient of the governmental structural form dummy (GFORM) is significant at the 5 percent level for a two tail test. The sign is positive, indicating that a strong mayor form of government tends to use property tax abatements more.

Two variables, which represent local development policy, are statistically significant. The coefficient of per capita capital investment of local government (CAP) is – 5.369 and significant at the 10 percent level for a two tail test. The coefficient of per capita highway expenditure (HW) is -16.481 and reasonably significant at the 15 percent level for a two tail test. Signs are all negative, indicating that cities with more development expenditures tend to use the property tax abatement less to encourage private capital investment. Another significant variable in this analysis is population density (PDEN). High population density has negative effects on the local utilization of property tax abatement.

5.5.1.2. Determinants of the Local Utilization of Property Tax Abatement (TANO)

Two regression equations such as the basic model (Model I) and the extended model (Model II) are estimated using the number of certificates issued for manufacturing property tax abatement (TANO) as the dependent variable. The outcome is presented in Table 5.4. While the explanatory power of Model I is moderate (R2 =.486), that of Model II is relatively high (R2 = .607).The F statistics of these models are 5.509 and 2.558 respectively. Two models have similar results, but, in Model II, local environmental variables have no systematic effect on the local utilization of the property tax abatement. Thus the following discussion will focus on the Model I.

Table 5.6: Determinant of Local Utilization of Property Tax Abatement

(Dependent variable: TANO)

Variable	Model I	Model II
CONSTANT	19.034	82.866
	(.510)	(.918)
CEXP	5.099E-02	
	(.794)	
TXB	-983.003**	-1103.188
	(-2.162)	(-1.528)
CTXB	5.018E-02	1.313E-02
	(.294)	(.040)
DEBT	5.796E-03	5.019E-03
	(.844)	(.447)
OREV	8.204E-02	9.523E-02
	(1.495)	(1.096)
TAX	4.203E-02	1.373E-02
	(.707)	(.125)
PTXR	-.814*	-1.427
	(-1.71)	(-1.564)
SEV	8.074E-09**	2.828E-08***
	(2.573)	(2.701)
INT	-4.835E-02	-3.732E-02
	(-1.146)	(-.530)
RMEM	3.794E-02	7.623E-02
	(.350)	(.491)
MBSAE	.921***	.654
	(3.028)	(.997)
INC	-3.659E-03*	-7.938E-03*
	(-1.855)	(-1.969)
CINC	.644***	.864**
	(3.032)	(2.127)
UNEMP	1.589	3.658
	(1.194)	(1.173)
CUNEMP	-1.002***	-1.332***
	(-3.418)	(-2.656)
EMPP	6.511E-02	.107
	(1.049)	(.626)
GFORM		-16.3
		(-1.608)
CS		9.105
		(.641)
CAP		-7.632E-03
		(-.164)
HW		6.863E-03
		(.042)

POL		2.406E-02
		(.120)
SEW		-2.687E-02
		(-.336)
INCTX		1.91
		(.099)
PRATE		1.215E-02
		(.018)
BLACK		.694
		(1.131)
PDEN		1.363E-02
		(.372)
POVTY		-2.072
		(-1.254)
R^2	.486	.602
F	5.509	2.558

Note: t values are in parentheses.
*, **, and *** indicate significance at 10%, 5%, and 1% level respectively.

Fiscal Condition

Among variables representing local fiscal condition, tax burden (TXB), the level of reliance on property tax (PTXR), and the state equalized valuation of local property per square mile (SEV) are the most significant variables in Model I. Tax burden (TXB), which is defined as the ratio of own-source revenues per capita to per capita income, is significant and negatively related to the degree of local utilization of property tax abatement in terms of the number of certificates issued for manufacturing property tax abatement (TANO). This value is statically significant at 5 percent in Model. These result shows that cities with higher tax burden tend to use less tax abatement program.

As shown in the previous regression model (with KTAP), the reliance on property tax (PTXR) is a significant variable in explaining the local utilization of the property tax abatement. The elasticity of reliance on property tax revenue (PTXR) is estimated to -

.814 and t value is -1.71 in Model I. The result shows that the level of the reliance on property tax revenue (PTXR) is negatively related to the local utilization of property tax abatement in the hypothesized direction. That is, cities with higher reliance on property tax revenue will not use the property tax abatement program much because of their limited capacity to increase property tax rate.

One of the most significant and consistent results in this regression model is obtained for the state equalized valuation of local property per square mile (SEV). SEV consistently shows positive coefficients in Model and Model II, and is statistically significant at least at the 5 percent level in both models. This means that cities with more tax base can more easily utilize property tax abatements.

Another variable that appears to have a reasonable level of statistical significance is per capita other own source revenue (OREV). It shows positive coefficient and statistically significant at the 15 percent level for a two tail test. Unlike the previous regression results, per capita tax revenue (TAX) is not statistically significant but relate to the local utilization of property tax abatement in the hypothesized directions.

Economic Condition

The regression results for economic condition variables are similar with results in the previous regression. Percentages of manufacturing employment among total employment (MBASE), median income (INC), change in median income (CINC) and change in unemployment rate (CUNEMP) are most significant variables in Model I. These variables are also significant and the same signs in Model II except MBASE.

Percentages of manufacturing employment among total employment (MBASE), which represents city's economic structure, is most significantly related to the degree of local utilization of property tax abatement in terms of the number of certificates issued for manufacturing property tax abatement (TANO). Its coefficient is .921 and t-value is 3.028 in Model I. This value is statically significant at least at the 1 percent level.

The most significant and consistent results in both models are obtained for change in median income (CINC) and median income (INC). Change in median income consistently shows positive coefficients (.644 for Model I and .864 for Model II), and is statistically significant at least at the 5 percent level in both models. However, one of interesting finding is that, contrast to the coefficient of CINC, the coefficient for median income has negative sign consistently in both models and statistically significant at the 10 percent level for a two tail test in both models. The results may indicate that, while growing cities in terms of median income tend to grant property tax abatements more, cities with higher median income do not use the property tax abatement program much to encourage private investment.

Another variable, which has statistically significant and consistent results, is change in unemployment rate (CUNEMP). Change in unemployment rate (CUNEMP) consistently shows negative coefficients (- 1.002 for Model I and – 1.332 for Model II), and is statistically significant at the 1 percent level in both models. This means that declining cities in terms of unemployment rate have difficulties to grant property tax abatements more.

5.5.1.3. Determinant of Local Utilization of Property Tax Abatement (Reduced Model)

In the reduced model, eight regression equations are estimated using the per capita amount of manufacturing property tax abated away (KTAP) and the number of certificates issued for manufacturing property tax abatement (TANO) as the dependent variables, and the pooled time-series and cross-section data set, and three separate cross-section data set (82, 87, 92). The outcome is presented in Table 5.7, Table 5.8, and Table 5.9. While the explanatory power of the Reduced Model in all eight regression equations are relatively moderate (.582 ~ .422). The F statistics of all eight regression equations are significant.

Reduced Model does not improve much in resolving autocorrelation problem. Among eight regression equations in the Reduced Model, only KTAP regression equation with pooled time-series and cross-section data set does not have autocorrelation problem. Its Dubin-Watson d statistics is 2.153 as shown in Table 5.5. It falls in between d_u (1.473)and 4-d_u (2.217).[1] Thus, we cannot reject the hypothesis that there is no autocorrelation. However, Dubin-Watson d statistics in other seven regression equations fall in the indecisive zone.[2] Thus, one cannot conclude whether autocorrelation does or does not exist.

[1] For k = 11 and n = 150, critical d_L and d_U are 1.473 and 1.783.

[2] For k = 11 and n = 50, critical d_L and d_U are 0.913 and 1.925. Thus, the indecisive zones are $d_L = 0.193 < d < d_U = 1.925$ and $4 - d_U = 2.075 < d < 4 - d_L = 3.087$.

Table 5.7: Determinant of Local Utilization of Property Tax Abatement :Reduced Model

Variable	KTAP	TANO
CONSTANT	808.517	37.527**
	(0.573)	(2.179)
TXB	-11253+	-310.939***
	(-1.378)	(-3.118)
CTXB	-8.318	7.543E-04
	(-0.794)	(0.590)
TAX	8.872***	6.897*
	(2.948)	(1.877)
PTXR	-56.551**	-1.044***
	(-2.581)	(-3.900)
SEV	-1.758E-07	4.646E-09*
	(-0.783)	(1.694)
RMEM	3.319	5.58E-02
	(0.392)	(0.540)
MBSAE	88.559***	0.874***
	(3.838)	(3.102)
INC	1.438E-02	-7.427E-04
	(0.124)	(-0.524)
CINC	36.414***	0.707***
	(2.391)	(3.801)
UNEMP	-61.922	0.480
	(-0.756)	(0.480)
CUNEMP	-67.890***	-1.075***
	(-3.186)	(-4.136)
R^2	.582	.447
F	7.847	4.996
Dubin-Watson d	2.153	1.574

Note: t values are in parentheses.
*, **, and *** indicate significance at 10%, 5%, and 1% level respectively.

Table 5.8. Determinant of Local Utilization of Property Tax Abatement
(Dependent Variable: KTAP)

Variable	'82	'87	'92
CONSTANT	11347**	-1708.34	1427.338
	(2.176)	(-0.413)	(0.630)
TXB	13113	-14660	1731.879
	(0.571)	(-0.848)	(0.114)
CTXB	-29.721	-12.946	-16.439
	(-1.111)	(-0.279)	(-1.199)
TAX	16.67*	16.256**	6.668+
	(1.772)	(2.211)	(1.557)
PTXR	-19.179	-58.736	-51.116+
	(-0.354)	(-1.084)	(-1.434)
SEV	-2.62E-07	-5.095E-07	1.677E-09
	(-0.547)	(-.989)	(-0.370)
RMEM	76.555+	3.427	5.545
	(1.451)	(0.287)	(0.3)
MBSAE	38.622	229.146***	96.334**
	(0.56)	(3.481)	(2.194)
INC	-0.753+	-0.127	-6.507E-02
	(-1.632)	(-0.369)	(-0.37)
CINC	308.244*	72.346	210.274*
	(1.907)	(0.884)	(1.755)
UNEMP	-306.195	-11.955	-127.06
	(-0.885)	(-0.046)	(-0.902)
CUNEMP	59.639	-224.315**	-60.207**
	(0.753)	(-2.07)	(-2.16)
R^2	.456	.503	.575
F	1.983	2.487	3.687
Dubin-Watson d	1.651	1.707	2.093

Note: t values are in parentheses.
+, *, **, and *** indicate significance at 20%, 10%, 5%, and 1% level respectively.

Table 5.9. Determinant of Local Utilization of Property Tax Abatement
(Dependent Variable: TANO)

Variable	**'82**	**'87**	**'92**
CONSTANT	102.365*	65.938+	78.6**
	(1.805)	(1.392)	(2.273)
TXB	-406.719+	-547.091***	-37.288
	(-1.628)	(-2.761)	(-0.16)
CTXB	.287	7.412E-02	-2.657
	(0.986)	(0.14)	(-0.127)
TAX	7.443E-02	8.289E-02	1.073E-02
	(0.728)	(0.984)	(0.164)
PTXR	-1.395**	-1.877***	-1.037*
	(-2.368)	(-3.024)	(-1.906)
SEV	9.734E-09*	8.216E-09+	1.234E-08**
	(1.869)	(1.392)	(2.178)
RMEM	.621	.101	.24
	(1.082)	(0.734)	(0.85)
MBSAE	8.208E-03	2.236***	1.231*
	(.011)	(2.965)	(1.837)
INC	-2.803E-03	-1.131E-03	-3.574E-03+
	(-0.558)	(-0.287)	(-1.329)
CINC	2.008	8.846E-03	2.077
	(1.142)	(0.009)	(1.135)
UNEMP	.527	-.464	-1.995
	(0.14)	(-0.154)	(-0.927)
CUNEMP	.642	-1.820+	-.845*
	(0.745)	(-1.466)	(-1.987)
R^2	.540	.422	.577
F	2.777	3.520	3.725
Dubin-Watson d	1.778	1.517	1.587

Note: t values are in parentheses.
+, *, **, and *** indicate significance at 20%, 10%, 5%, and 1% level respectively.

Fiscal Condition

The regression results in the Reduced Model are similar to the previous regression results in the Basic Model and Extended Model. Among variables representing local fiscal condition, tax burden (TXB), the level of reliance on property tax (PTXR), per capita tax revenue (TAX), and the state equalized valuation of local property per square mile (SEV) are the most significant variables in the KTAP and TANO regressions with pooled time-series and cross-section data. While tax burden (TXB) and the level of reliance on property tax (PTXR) are significant in KTAP regression, in TANO regression, all four variables -tax burden (TXB), the level of reliance on property tax (PTXR), per capita tax revenue (TAX), and the state equalized valuation of local property per square mile (SEV)- are statistically significant in the hypothesized direction.

Economic Condition

The regression results for economic condition variables in the Reduced Model are also similar with results in the previous Basic and Extended regression. Percentages of manufacturing employment among total employment (MBASE), median income (INC), change in median income (CINC) and change in unemployment rate (CUNEMP) are most significant variables in both KTAP and TANO regression equations. These variables are statically significant at least at the 1 percent level in the hypothesized directions in the both regressions.

5.5.2. Summary of Findings

The estimated coefficients presented in the previous section prove that strong relationships exist between the degree of local utilization and local fiscal and economic conditions. In general, the results of the empirical analysis support both hypotheses that, in a given city, economic distress level relates positively to the degree of the local utilization of property tax abatements and that in a given city, fiscal distress level relates negatively to the local utilization of property tax abatements.

Several observations are made in this analysis. First, contradicting the conventional notion that the fiscally distressed communities will use more the property tax abatement program, communities with the greater revenue and tax base tend to use more the property tax abatement program. In this analysis, own-source revenues such as per capita tax revenues, other own-source revenues, and tax base, in part, positively relate to the local utilization of property tax abatement, whereas tax burden and reliance on property tax, which represent fiscal stress, negatively relate to the local utilization of property tax abatement.

The second interesting observation in this analysis is that levels and changes in income and unemployment rate variables have opposite signs. While changes in the median income variable positively relate to the utilization of property tax abatement, the level of median income is negatively related to the utilization of property tax abatement. It can be, in part, explained through the conceptual framework described in the previous chapter. While communities with increasing rates of median income (growing cities) tend to grant property tax abatements more, cities with higher median income (Type IV) do

not use the property tax abatement program much to encourage private investment. In the case of unemployment rates, cities with the cycling and structural unemployment (Type I) have difficulty utilizing the property tax abatement program because of lack of place's attractiveness to firms. However, level of unemployment may represent a city's economic need to utilize the tax abatement program.

The third point is that this analysis cannot reject 'the local environmental factors' influence hypothesis'. The governmental structural dummy variable and developmental expenditure variables (CAP and HW) have reasonable statistical significance and consistent direction in both regressions. The mayoral government dummy variable tends to show the positive relationship to the degree of the local utilization of property tax abatement. On the other hand, developmental expenditure variables (CAP and HW) show the negative relationship to the degree of the local utilization of property tax abatement.

CHAPTER VI

CONCLUSION

6.1. Summary

This conclusion chapter discusses the overall results, policy implications, and limitations of this study, while providing recommendations for further studies. This study analyzed the relationship between the level of local fiscal and economic performance and the degree of local utilization of property tax abatement in Michigan cities. The results of this study presented the local fiscal and economic factors that were most closely associated with a high degree of local utilization of property tax abatement.

This study consisted of establishing a conceptual framework for the local utilization of property tax abatement and analyzing empirical data. This study proposed two types of analytical models: the basic model that considered only local fiscal and economic variables: the extended model that considered local fiscal variables, local economic variables, and local environmental variables including governmental structure, spatial variation, local policy effects, and social and structural conditions.

In the multiple regression models, two types of measures of the local utilization of property tax abatement are used as dependent variable; per capita amount of cumulative real market value of manufacturing property tax base abated away (KTAP) and certificate numbers of manufacturing property tax abatement issued (TANO).

The results presented in the preceding chapters reveal some important aspects of local utilization of property tax abatement. The estimated coefficients presented in the

previous chapter prove that there are strong relationships between the degree of local utilization and the local fiscal and economic conditions. In general, the results of the empirical analysis support both hypotheses that, in a given city, economic distress level relates positively to the degree of the local utilization of property tax abatements and that in a given city, fiscal distress level relates negatively to the local utilization of property tax abatements.

Several observations are made in this analysis. First, contradicting the conventional notion that the fiscally distressed communities will use more the property tax abatement program, communities with the greater revenue and tax base tend to use more the property tax abatement program. In this analysis, own source revenue such as per capita tax revenue, other own source revenue, and tax base, in part, positively relate to the local utilization of property tax abatement, whereas tax burden and reliance on property tax, which represent fiscal stress, negatively relate to the local utilization of property tax abatement.

The second interesting observation in this analysis is that levels and changes in income and unemployment rate variables have opposite sign. While the positive 5-year change in median income variable positively relate to the utilization of property tax abatement, the absolute level of median income is negatively related to the utilization of property tax abatement. It can be, in part, explained through the conceptual framework described in the previous chapter. While communities with increasing rate of median income (growing cities) tend to grant property tax abatements more, cities with higher median income (Type IV) do not use the property tax abatement program much to encourage private investment. In the case of unemployment rates, a five-year increase in

unemployment negatively relates to the local utilization of property tax abatement, while high absolute unemployment rates is positively related to the local utilization of property tax abatement but statistically not significant. This means that cities with the cycling and structural unemployment (Type I) have difficulty utilizing the property tax abatement program because of lack of a place's attractiveness to firms. However, a high level of unemployment may represent a city's economic need to utilize the tax abatement program.

The third point is that this analysis can not reject 'the local environmental factors' influence hypothesis'. The governmental structural dummy variable and developmental expenditure variables (CAP and HW) have reasonable statistical significance and consistent direction in both regressions. The mayoral government dummy variable tends to show the positive relationship to the degree of the local utilization of property tax abatement. Strong mayor system is expected to be more responsive to citizen and group pressures and more aggressive to adopt economic development policy than are politician in cities using the council-manager form. Thus, the property tax abatement policy may be more utilized in cities with a mayor-council government. On the other hand, developmental expenditure variables (CAP and HW) show the negative relationship to the degree of the local utilization of property tax abatement. Developmental expenditures of local government such as capital investment and highway expenditures improve the business climate in a city and provide attractiveness to firms. Thus decision-makers may use little tax abatement to encourage private investment.

6.2. Policy Implications

The results of this study have implications for local, state and federal policy makers. It has been observed that local fiscal factors, especially the fiscal capacity of a local government, play an important role in utilizing property tax abatements.
In this analysis, own-source revenues such as per capita tax revenue, other own-source revenues, and tax base, in part, positively relate to the local utilization of property tax abatement. On the other hand, tax burden and reliance on property tax, which represent fiscal stress, negatively relate to the local utilization of property tax abatement. This suggests that, while fiscally healthier communities use property tax abatement more, fiscally distressed communities have difficulties utilizing the property tax abatement program.

Yet, it has also been observed that, while change in unemployment rate is positively related to the local utilization of property tax abatement, change in median income is positively related to granting property tax abatements. This means that communities with the cycling and structural unemployment have difficulties utilizing the property tax abatement program to create new jobs.

These empirical results imply that property tax abatement policy can create locational distortions and have undesirable equity consequences. A property tax abatement program may not be an effective policy tool in the fiscally and economically declining communities such as Type I cities in chapter IV. If all communities in a region were to offer abatements without consideration for their need, declining communities that

are unattractive to firms would lose the power of an incentive that can be used to overcome their situation. It may enlarge the disparity among jurisdictions.

Even in growing communities or fiscally healthy communities, widespread interurban competition for tax abatement can pose problems. Even if property tax abatements in the long run increase business activity enough to actually increase revenue, local government officers will have to deal with the likely short-run losses in revenue. There is no assurance that the increased likelihood of capital investment will necessarily yield sufficient benefits to compensate for the forgone property tax revenue and increased service costs that accompany the abatement award. Thus, depending on shifting on shifting possibilities, property tax abatement may increase the regressiveness of the property tax. Burden may fall disproportionately on certain ownership group such as residential users that do not qualify for abatements. Also, inter-jurisdictional equity problems may arise when geographically concentrated, exempt activities distribute benefits in a more spatially uniform manner. This phenomenon imposes disproportionate burdens on property owners in jurisdictions of exempt to taxable property value.

Thus the remedy is not to entirely eliminate property tax abatement programs, but instead it is important to control the property tax abatement policy to insure that local governments only offer abatements that are necessary to overcome local fiscal and economic needs.

For the local government, it is desirable to convert supply-side development incentives like property tax abatements into demand-side incentives like human and physical capital investment. Indirect tax expenditures could be transformed into direct budgetary expenditures such as job training programs and infrastructure enhancement

projects. More widespread use of demand-side incentives policies would trade in the highly speculative benefits of tax abatements for the direct benefits of investing in the people of a community and improving the fixed assets of the city. Even though cities have difficulties converting to demand-side policies due to the direct political costs of raising taxes or cutting existing services, if tax abatements could be restricted to use only in needy areas, it is conceivable that other areas might be more inclined to use demand-sided development policies.

6.3. Limitations and Recommendations

Though this study has yielded a number of useful observations on the relationships between local fiscal and economic factors and the local utilization of property tax abatement, several important limitations deserve comment.

First, this study has used only local factors including fiscal, economic and local environmental factors to analyze the variation in the local utilization of property tax abatement. This study did not consider extensively local political variables. The actions and behaviors of key institution and actors may be important factors in decision process to choose economic development policy. While the variables in this study may indirectly include some of them, the political actor's subjective interpretations of actual fiscal and economic conditions and their perceptions of city's goals may be a crucial factor in explaining the local utilization of property tax abatement. Thus, future study is needed to examine these political and decision-making process variables.

Aside from this issue, some econometric issues in the estimation of regression models should also be noted. Estimations using cross-sectional data such as ours frequently involve the problem of heteroscedasticity. In this study, the distribution of errors may have different variances between growing and declining cities. It would be useful, if there exists heteroscedasticity, to employ such models as weighted least squares to resolve the problem. Another possible econometric problem of the current study is the issue of simultaneity. There might have been simultaneous effects among key indicators of local conditions such as property tax base, property tax rate, and local public expenditure levels. It may cause some simultaneous equation bias. An extension of the study could develop two stage least squares models to correct this bias.

Also, future research efforts should focus on the effectiveness of property tax abatement on local economies and communities' well-being. This study demonstrates the importance of local fiscal and economic factors in utilizing property tax abatements. However, further research on the effectiveness of the property tax abatement policy and methodological refinements may yield more detailed assessments to evaluate property tax abatement policy.

BIBLIOGRAPHY

Advisory Commission on Intergovernmental Relations, 1967, *State-Local Taxation and Industrial Location*, Washington, D. C.

Accordino, John J, 1992, The United States in the Global Economy: Challenges and Policy Choices, Chicago and London: American Library Association.

Agnew, J. 1987. The United States in the World-Economy: A Regional Geography. Cambridge University Press.

Alperovitz, Gar and Jeff Faux. 1984. Rebuilding America: A Blueprint for the New Economy. New York: Pantheon Books.

Alyea, P., 1967, "Property Tax Inducements to Attract Industry." In R. W. Lindholm (ed.), *Property Taxation U.S.A.*, Madison: University of Wisconsin Press.

Ambrosius, M. M., 1989. "The Effectiveness of State Economic Development Policies: A Time-series Analysis." *Western Political Quarterly* 42: pp. 283-300.

Bahl, Roy W., 1991, *Economic Growth and Fiscal Planning*, New Brunswick, N.J.: Center for Urban Policy Research.

Bahl, Roy W., 1968, Public Policy & Urban Fiscal Problem: Piecemeal vs. Aggregate Solution, *Land Economics*, Feb., pp. 41-50.

Bahl, Roy. 1984. Financing State and Local Governments in the 1980s. New York: Oxford University Press,.

Bahl, Roy W., and David Puryear, 1978, "The President's Tax Program". *Methods of Urban Impact Analysis* No.1 Washington, D.C.: Office of Policy Develpoment and Research, U.S. Department of Housing and Urban Development.

Baldassare, Mark, 1986, *Trouble in Paradise: The Suburban Transformation in America*, New York: Columbia University Press.

Bartik, Timonthy J, 1991. *Who Benefits from State and Local Economic Development*

Policies? W.E. Upjohn Institute for Employment Research, Kalamazoo, Michigan.

, 1991. "The Effects of Property Taxes and Other Local Public Policies on the Intrametropolitan Pattern of Business Location," Henry W. Herzog, Jr. and Alan M. Schlottmann (ed.,) *Industry Location and Public Policy, Knoxville*, TN: University of Tennessee Press. PP. 57-82.

Beauregard, R. (ed). 1983. *Economic Restructuring and Political Response*. Volume 34, Urban Affairs Annual Reviews. Sage Publications, Inc.

Bennett, L. 1987. "The Dilemmas of Building a Progressive Urban Coalition: The Linked Development Debate in Chicago." *Journal of Urban Affairs* 9, No. 3: pp. 263-76.

Berry, Brian J. L. 1991. *Long Wave Rhythms in Economic Development and Political Behavior*. The Johns Hopkins University Press, Baltimore and London.

Berry, B., and J. D. Kasarda, 1977, *Contemporary Urban Ecology*, New York: Macmillan.

Bingham, Richard D. and Robert Mier (eds). 1993. *Theories of Economic Development*, Sage Publications, Newbury Park, CA.

Bingham R.D., E. W. Hill and S. B. White, *Financing Economic Development*. Newbury Park, CA: Sage Publications, Inc.

Black, Harry. 1991. *Achieving Economic Development Success: Tools That Work.* Washington, D.C.: International City Management Association (ICMA).

Blakely, E. J., 1989, *Planning Local Economic Development*, Newbury Park, CA, Sage Publications, Inc.

Blair, J. P., R. H. Fichtenbaum, and J. A. Swany, 1984, "The Market for Jobs: Locational Decisions and the Competition for Economic Development," *Urban Affairs Quarterly* 20, pp. 64-77.

Blair, J. P. and R. Premus, 1987, "Major Factors in Industrial Location: a Review," *Economic Development Quarterly*, 1, pp. 72-85.

Bluestone, B. and B. Harrison. 1982. *The Deindustrialization of America: Plant Closings. Community Abandonment and the Dismantling of Basic Industry*. New York: Basic Books.

Bowman, A. O'M, 1988. "Competition for Economic Development among Southeastern Cities." *Urban Affairs Quarterly* 23: pp. 511-27.

Bowman, A. O'M. and Michael A. Pagano, 1992. "City Intervention: An Analysis of the Public Capital Mobilization Process." *Urban Affairs Quarterly*, Vol. 27 No.3, pp. 356-374.

Brace, Paul, 1993, *State Government and Economic Performance*, Baltimore: The Johns Hopkins University Press.

Brazer, Harvey E. and Deborah S. Laren (eds.,) 1982, *Michigan's Fiscal and Economic Structure*, Ann Arbor, MI: The University of Michigan Press.

Brems, Hans, 1968, *Quantitative Economic Theory: A Synthetic Approach*, New York: John Wiley & Sons, Inc.

Bridges, Benjamin, 1965, "State and Local Inducements for Industry," *National Tax Journal*, Vol. 18, No. 1, pp. 175-189.

Buchanan, James M., 1965, An Economic Theory of Clubs, *Economica*, Vol. 32, Feb., pp. 1-14.

Buchanan, James M. & Charles J. Goetz, 1972, Efficiency Limits of Fiscal Mobility: An Assessment of the Tiebout Model, *Journal of Public Economics*, Vol. 1, pp. 25-43.

Buchanan, James M., 1960, *Fiscal Theory and Political Economy: Selected Essays*, Chapel Hill, University of North Carolina Press.

Buchanan, James M., 1972, *Theory of Public Choice: Political Applications of Economics*, Ann Arbor, University of Michigan Press.

Burchell, Robert W., 1985, *The New Practitioner's Guide to Fiscal Impact Analysis*, New Brunswick, N.J.: Center for Urban Policy Research.

Burchell, Robert W. and David Listokin, eds., 1985, *Cities Under Stress*, New Brunswick, N.J.: Rutgers University, Center for Urban Policy Research.

Burnell, B.S., and J. D. Burnell, 1989, "Community Interaction and Suburban Zoning Policies." *Urban Affairs Quarterly*, Vol.24 No.3, March, pp. 470-482.

Cabill, A.G. and J. A. James, 1992, "Responding to Municipal Fiscal Distress: An

Emerging Issue for State Governments in the 1990s," *Public Administration Review*, Vol. 52 No. 1, January/February, pp. 88-94.

Cason, Forrest M., 1981, Land-Use Concomitants of Urban Fiscal Squeeze, *Urban Affairs Quarterly*, Vol. 16 No.3, March, pp. 337-353.

Charney, A. H., 1983, "Intrametropolitan Manufacturing Location Decisions and Local Tax Differentials," *Journal of Urban Economics*, 184-205.

Chirinko, Robert S., 1986, "Business Investment and Tax Policy: A Perspective on Existing Models and Empirical Results," *National Tax Journal*, Vol. XXXIX, No. 2, pp.137-155.

Clark, T., and G. Gaile. 1992. "The Next Wave: Postfederal Local Economic Development Strategies." *Economic Development Quarterly* 6, No.2: pp. 187-98.

Coffin, D. A. 1982, "Property Tax Abatements and Economic Development in Inianapolis," *Growth and Change*, pp. 18-23.

Coffman, R. B., "Tax Abatements and Rent-Seeking," *Urban Studies*, Vol. 30, No. 3, pp. 593-598.

Collinge, Chris, 1992, "The Dynamics of Local Intervention: Economic Development and the Theory of Local Government," *Urban Studies*, Vol. 29, No. 1, pp. 57-75.

Cook, A. K., and D. M. Beck, 1991, " Metropolitan Dominance verse Decentralization in the Information Age," *Social Science Quarterly*, 72 (June), pp. 248-298.

Cox, Kevin, 1993, "The Concept of Local Economic Development Policy: Some Fundamental Questions," David Fasenfest (ed.) *Community Economic Development: Policy Development in the US and UK*, New York: St. Martin's Press, pp. 45-64.

Dabney, Dan Y. 1991 "Do Enterprise Zone Incentives Affect Business Location Decisions?" *Economic Development Quarterly*, Vol. 5 No. 4, November, pp.325-334.

Dalenberg, D. R., and M. D. Patridge, 1995, "The Effects of Taxes, Expenditures, and Public Infrastructure on Metropoitan Area Employment," *Journal of Regional Science*, Vol. 35, No. 4, pp. 617-640.

Dean, G. and K. Peroff, 1977, "The Spending-Service Cliche: An Empirical

Reevaluation," *American Politics Quarterly*, Vol. 5, October, pp. 501-517.

Doeringer, P.B., D.E. Terkla, and G.C Topakian. 1986. *Reviving Mature Economies: Business Decision Making, Invisible Factors, and Local Economic Development*. Boston: Boston University Institute for Employment Policy.

Dorfman, Joseph. 1947. *The Economic Mind in American Civilization*, 1606-1865, George G. Harrap and Company, London. pp. 291-292.

Dowall, David E., 1978, Fiscal Impact Rationale for Local Growth Management, *The Annals of Regional Science*, Vol 12, July, pp. 83-94.

Due, J. F., 1961, "Studies of State and Local Tax Influences on Location of Industy," *National Tax Journal*, 163-173.

Dunn, W., 1986, Policy Analysis: Perspectives, Concepts and Methods. Greenwich, CT: JAI Press.

Eisinger Peter K.,1988, *The Rise of the Entrepreneurial State*, Madison: The University of Wisconsin Press.

Epping, G. Micheal, 1982, "Important Factors in Plant Location in 1980" *Growth and Change*, April, pp47-51.

Erickson Rodney A. and Michael Wasylenko, 1980, "Firm Relocation and Site Selection in Suburban Municipalities" *Journal of Urban Economics* 8, pp. 69-85.

Farr, Cheryl A. ed. 1984. *Shaping the Local Economy: Current Perspectives of Economic Development*. Washington D.C. ICMA.

Fainstein, S. S., 1991, "Promoting Economic Development: Urban Planning in United States and Great Britain," *Journal of the American Planning Association*, Vol.57, No.1, Winter.

Fasenfest, David (ed.,) 1993, *Community Economic Development: Policy Development in the US and UK*, New York: St. Martin's Press.

Feick, R. C., and J. Clingermayer, 1986, "Municipal Representation, Executive Power, and Economic Development Policy Activity." *Policy Studies Journal* 15, pp. 211-29.

Fischel, William A., 1975, "Fiscal and Environmental Considerations in the Location of Firms in Suburban Communities," Edwin S. Mills and Wallace E. Oats (ed.,), *Fiscal Zoning and Land Use Controls: The Economic Issues*, Lexington, Mass.: Lexington Books.Williams, 1967, pp. 119-174.

Fisher, Ronald C., 1987, *State and Local Public Finance*, Glenview, Illinois: Scott, Foresman and Company.

Fleischmann, A., and G. P. Green.1991. "Organiging Local Agencies to Promote Economic Development." *American Review of Public Administration* 21: pp. 3-15.

Fleischmann, A., G. P. Green, and T. M. Kwong.1992. "What's a City to Do? Explaining Differences in Local Economic Development Policies." *Western Political Quarterly* 45, No.3 (September): pp. 677-99.

Floyd, J. S., Jr, 1952, *Effects of Taxation on Industrial Location*, Chapel Hill: University of North Carolina Press.

Fox, W. F., 1981, "Fiscal Differentials and Industrial Location: Some Empirical Evidence," *Urban Studies*, pp. 105-111.

Friedman, J. J., 1990, " The Importance of Specific Resources to Community Actions: The Case of Foreign Trade Zons," *Social Science Quarterly* 71, pp. 602-618.

Gerking, Shelby and William Morgan, 1991, "Measuring Effects of Industrial Location and State Economic Development Policy: A Survey," Henry W. Herzog, Jr. and Alan M. Schlottmann (ed.,) *Industry Location and Public Policy*, Knoxville, TN: University of Tennessee Press. PP. 31-56.

Gibbs, D. ed. 1990, *Government Policy and Industrial Change*, N.Y. Routledge.

Gittell, Ross J. 1992, *Renewing Cities*. Princeton: Princeton University Press.

Glasmeier, Amy K. 1991. *The High-Tech Potential: Economic Development in Rural America,* New Jersey: Center for Urban Policy Research.

Goetz, E. 1990. "Type II Policy and Mandated Benefits in Economic Development." *Urban Affairs Quarterly* 26, No. 2: pp. 170-90.

Goldstein, Harvey A. (ed.,) 1987. *The State and Local Industrial Policy Question*, Chicago: American Planning Association, Planners Press.

Gottdiener, M., 1983, "Some Theoretical Issues in Growth Control Analysis." *Urban Affairs Quarterly*, Vol.18 No.4, June, pp. 565-569.

Gottdiener, M., and M. Neiman. 1981. "Characteristics of Support for Local Growth Control." *Urban Affairs Quarterly*, Vol. 17, pp. 55-73.

Graham, J & R.J. S. Ross. 1989 "From Manufacturing ..... to Service-based Employ policy?" *International Journal of Urban and Regional Research* 13, 1, pp. 121-136.

Gramlich, E.M. and G. C. Woodard, 1982, "The Role of Tax Limitation Referenda in State Fiscal Policy," H.E. Brazer, ed., *Michigan's Fiscal and Economic Structure*, Ann Arbor: The University of Michigan Press.

Grant, J. A., 1990, "Making Policy Choices: Local Government and Economic Development," *Urban Affairs Quarterly*, Vol. 26, pp. 148-169.

Green, G. P., and A. Fleischmann. 1989. "Analyzing Local Strategies for Promoting Economic Development." *Policy Studies Journal* 17: pp. 557-73.

Green, G. P., and A. Fleischmann. 1991. "Promoting Economic Development: A Comparison of Central Cities, Suburbs, and Nonmetropolitan Communities." *Urban Affairs Quarterly* 27, No. 1 (September): pp. 145-54.

Greenhut, M. L., 1956, *Plant localtion in Theory and in Practice*, Chapel Hill: The University of North Carolina Press.

Grieson, Ronald E., William Hamovitch, Albert M. Levenson, and Richard D. Morgenstern, 1977, "The Effect of Business Taxation on the Location of Industry," *Journal of Urban Economics*, Vol. 4, pp. 170-185.

Hamlin, Roger E. and Thomas S. Lyons, 1996, *Economic Without Walls: Managing Local Development in a Restructuring World*, Westport, CT: Praeger Publishers.

Hayes, Kathy and David Puryear, 1980, "The Urban Impacts of the Revenue Act of 1978." *The Urban Impacts of Federal Policies*, ed. By Norman Glickman, Baltimore: Johns Hopkins University Press, pp. 451-466.

Hamilton, B. W., 1975, "Zoning and Property Taxation in a System of Local Governments, *Urban Studies*, pp. 205-211.

Hanson, R. (ed.), 1983, *Rethinking Urban Poicy: Urban Development in an Advanced*

Economy, Washington: National Academy Press.

Helms, L. Jay, 1985, "The Effect of State and Local Taxes on Economic Growth: A Time Series-Cross Section Approach," *The Review of Economics and Statistics*, pp. 574-582.

Hellman D. A., G. H. Wassall and L. H. Falk, 1976, *State Financial Incentive to Industry*, Lexinton: Lexington Books.

Henderson J. Vernon, 1980, Community Development: The Effects of Growth & Uncertainty, *American Economic Review*, Vol.70, Dec. pp. 894-910.

Henig, J. 1992. "Defining City Limits." *Urban Affairs Quarterly* 27, No. 3: pp. 375-95.

Herzog, Henry W., Jr. and Alan M. Schlottmann. 1991. Industry Location and Public Policy, Knoxville, TN: University of Tennessee Press.

Hettich, Walter and Stanley Winer, 1984, A Positive Model of Fiscal Structure, *Jouornal of Public Economics,* Vol. 24 , pp.67-87.

Howell, James M. and Charles F. Stamm, 1979, *Urban Fiscal Stress: A Comparative Analysis of 66 U.S. Cities*. Lexington, MA: Lexington Books.

Hula, R. C., ed., 1988, *Market-Based Public Policy*, New York: St. Martin's Press.

, 1993. "The State Reassessed: The Privatization of Local Politics." In *The New Localism: Comparative Urban Poitics in a Global Era*, eds. E. G. Goetz and S. E. Clarke, pp. 22-45. Newbury Park, CA and London: Sage Publications.

Humphrey, C. R., R. A. Erickson, and E. J. Ottensmeyer. 1988. "Industrial Development Groups, Organizational Resources, and the Prospects for Effecting Growth in Local Economies." *Growth and Change* 10:1-21.

Humphrey, C. R., R. A. Erickson, and E. J. Ottensmeyer. 1989. "Industrial Development Organizations and the Local Dependence Hypothesis." *Policy Studies Journal* 17: pp. 624-42.

Inman, Robert P., 1995, "How to Have a Fiscal Crisis: Lessons from Philadelphia," *American EconomicReview* 85, 2, pp. 378-383.

Kane, Matt and Peggu Sand. 1988. *Economic Development: What Works at the Local Level.* Whasinton D.C. : National League of Cities.

Kelton, Christina M.L., 1983, *Trend in the Relocation of U.S. Manufacturing*, Ann Arbor,

MI: UMI Research Press.

Kane Matt and Peggy Sand, 1988, *Economic Development*, National League of Cities, Washington, D.C.

Kenyon Daphne A. and J. Kinkaid (eds.), 1991, *Competition among state and local governments: Efficiency and equity in American Federalism*, Washington D. C.: Urban Institute Press.

Ladd, H. F., 1975, "Local Education Expenditures, Fiscal Capacity, and the Composition of the Property Tax Base," *National Tax Journal*, pp. 145-158.

Ladd H. F. and K. L. Bradbury, 1988, "City Taxes and Property Tax Bases," *National Tax Journal*, Vol. XLI, No. 4, pp. 503-523.

Ladd H. F. and J. Yinger, 1989, *American's Ailing Cities: Fiscal Health and the Design of Urban Policy*, Baltimore, MD: Johns Hopkins University Press.

Levin, S. G., 1974, "Suburban-Central City Property Tax Differentials and the Location of Industry: Some Evidence," *Land Economics*, pp. 380-386.

Lindblom, C.E., 1959, "The Science of Muddling Trough." *Public Administration Review*, Vol 19, pp. 79-88.

Linder, S. H. and B. G. Peters, 1989, "Instruments of Government: Perceptions and Context," *Journal of Public Policy*, Vol. 9, pp. 35-58.

Logan, J. R., and Min Zhou, 1990, "The Adoption of Growth Controls in Suburban Communities," *Social Science Quarterly* 71, pp. 118-129.

Losch, A., 1954, *The Economics of Location*, trans. W. H. Waglom, New Haven, CT: Yale University Press.

Loh, Eng Seng, 1993, "The Effects of Jobs-Targeted Development Incentive Programs," *Growth and Change*, Vol. 24, Summer, pp.365-383.

Luke, Jeffrey S., Curtis Ventriss, B.J. Reed, and C.M. Reed. 1988. *Managing Economic Development: A Guide to State And Local Leadership Strategies*. San Francisco: Jossey-Bass Publishers.

Mandelker D. R., Gary Feder and M. R. Collins, 1980, *Reviving Cities with Tax Abatement*, New Brunswick, N.J., Center for Policy Research.

Margolis, Julius, 1957, Municipal Fiscal Structure in a Metropolitan Region, *Journal of*

Political Economy, Vol 65, June, pp. 226-236.

Markusen, A. R., 1989, "Industrial structuring and Regional Politics," In R. A. Beauregard (ed.,) *Economic Restructuring and Political Response*. Newbury Park, CA:Sage, pp. 115-147.

McDonald, John F., 1983, "An Economic Analysis of Local Inducements for Business," *Journal of Urban Economics*, Vol. 13, pp. 332-336.

McGuire, T.J., 1985, "Are Local Property Taxes Important in the Intrametropolitan Location Decisions of Firms: An Empirical Anaysis of the Minneapolis-St. Paul Metropolitan Area," *Journal of Urban Economics*, pp. 226-234.

McHone, W. W., 1986, "Supply-Side Considerations in the Location of Industry in Suburban Communities: Empirical Evidence from the Philadelphia S.M.S.A.," *Land Economics*, pp. 64-73.

Mills, Edwin S. and Wallace E. Oats, 1975, *Fiscal Zoning and Land Use Controls: The Economic Issues*, Lexington, Mass.: Lexington Books.

Morgan, William E., and Merlin M. Hackbart, 1974, "An Analysis of State and Local Tax Exemption Programs." *Southern Economic Journal* 41, pp. 200-205.

Morse George W. and Michael C. Farmer, 1986, "Location and Investment Effects of a Tax Abatement Program," *National Tax Journal*, Vol. XXXIX, No. 2, pp. 229-236.

Mullen, John K., 1990, "Property Tax Exemptions and Local Fiscal Stress." *National Tax Journal*, Vol. XLIII, No. 4, pp. 467-479.

Mueller, Dennis C., 1979, *Public Choice*, Cambridge: New York: Cambridge University Press.

Muller, Thomas, 1975, *Growing and Declining Urban Areas: A Fiscal Comparison*, Washington, D. C.: The Urban Institute.

Musgrave, Richard A., 1989, *Public Finance in Theory and Practice*, New York : Mcgraw-Hill Book Co.

Musgrave, Richard A., 1959, *The Theory of Public Finance: A Study in Public Economy*, New York : Mcgraw-Hill Book Co.

Nathan, Richard A. and Charles Adams, 1976, "Understanding Central City Hardship," *Political Science Quarterly* 91, pp. 47-62.

Negishi, T., 1972, "Public Expenditure Determined by Voting with One's Feet and Fiscal Profitability." *Swedish Journal of Econmics*. 19, Spring, pp. 79-88.

Netzer, D., 1991, "An evaluation of interjurisdictional competition through economic development incentives." In D. Kenyon and J. Kinkaid (eds.), *Competition among state and local governments: Efficiency and equity in American Federalism*, Washington D. C.: Urban Institute Press, pp. 221-245.

Noyelle, T. J. and T. M. Stanback, Jr., 1983, *The Economic Transformation of American Cities*, Totowa, NJ: Rowman & Allanheld.

Nunn, Samuel, 1994, "Regulating Local Tax Abatement Policies: Arguments and Alternative Policies For Urban Planners and Administers," *Policy Studies Journal*, Vol. 22, No. 4, pp. 574-588.

Oates, Wallace, 1972, Fiscal Federalism, New York: Harcourt Crace Jovanovich.

Pagano, M.A., 1988, "Fiscal Disruptions and City Responses: Stability, Equilibrium, and City Capital Budgeting." *Urban Affairs Quarterly*, Vol.24 No.1, September, pp. 118-137.

Pagano, M.A. and Richard J. T. Moore, 1985, *Cities and Fiscal Choice*, Durham: Duke University Press.

Peretz, P. 1986. "The Market for Industry: Where Angels Fear to Tread." *Policy Studies Review* 5: pp. 624-33.

Peterson Paul E., 1981, *City Limits*, Chicago: The University of Chicago Press.

Raimondo, Henry J., 1992, *Economics of State and Local Government*, New York: Praeger Publishers.

RAND, 1979, *Fiscal Containment of Local and State Government*, R-2494-FF/RC.

Reese, L. A., and A. B. Malmer. 1994. "The Effects of State Enabling Lesislation on Local Economic Development Policies." *Urban Affairs Quarterly* 30: pp. 114-35.

Reese, L. A., 1991, "Municipal Fiscal Health and Tax Abatement Policy," *Economic Development Quarterly*, Vol.5, No.1, February, pp. 23-32.

, 1992, "Local Economic Development in Michigan: A Reliance on the Supply Side," *Economic Development Quarterly*, Vol.6, No.4, November, pp. 383-393.

, 1994. "The Role of Counties in Local Economic Development." *Economic Development Quarterly* 8: pp. 28-42.

Rhinehart, J., 1963, "Rates of Return on Municipal Subsidies to Industry," *Southern Economic Journal*, 23, pp. 297-306.

Rich, M. J., 1989, "Distributive Politics and the Allocation of Federal Grants," *American Political Science Review*, 83, pp. 193-213.

Robinson, C.J., 1989, "Municipal Approaches to Economic Development" *Journal of the American Planning Association*, Summer.

Rosen, Harvey S., and Kenneth T. Rosen, 1980, "Federal Taxes and Homeownership: Evidence From Time Series." *Journal of Political Economy* 88 (1), Feburuary, pp 59-75.

Rubin, H. J. 1986. "Local Economic Development Organizations and Activities of Small Cities in Encouraging Economic Growth." *Policy Studies Journal* 14: pp. 363-88.

Rubin, I., and H. J. Rubin. 1987. "Economic Development Incentives: The Poor Pay More." *Urban Affairs Quarterly* 23: pp. 37-62.

Sacks, Seymour & Alan K. Campbell, "The Fiscal Zoning Game", *Municipal Finance*, Vol. 36, May, pp.140-149.

Samuelson, Paul A., 1954, "The Pure Theory of Public Expenditure," *Review of Economics & Statistics*, Vol. 36, Nov., pp. 387-389.

Schneider, M. 1992. "Undermining the Growth Regime: The Missing Link Between Local Economic Development and Fiscal Payoffs." *Journal of Politics* 54 (February): pp. 214-30.

Schneider, M. 1989, *The Competitive City: The Political Economy of Suburbia*, Pittsburgh, PA: University of Pittsburgh Press.

Schneider, M. and J. R. Logan, 1982, "The Effects of Local Government Finances on Community Growth Rates." *Urban Affairs Quarterly*, Vol.18 No.1, September, pp. 91-105.

Sharp, E. B., 1990, *Urban Politics and Administration: from Service Delivery to Economic Development*, New York: Longman.

Steinnes, Donald N. 1984, "Business Climate, Tax Incentives, and Regional Economic Development," *Growth and Change*, April 1984, pp.38-47.

Stephenson, M. O., Jr., 1991, "Whither the Public-Private Partnership: A Critical Overview," *Urban Affairs Quarterly* (September), pp.109-127.

Stober, William K. and Laurence H. Falk, 1967, "Property Tax Exemption: An Inefficient Subsidy to Industry." *National Tax Jo*urnal 20, pp. 386-394.

Stone, Donald N., 1974, *Industrial Location in Metropolitan Areas*, New York, NY: Praeger Publishers.

Stone C. N., 1980, Systemic Power and Community decision making: A Restatement of Stratification Theory," *American Political Science Review*, Vol. 74, pp. 978-990.

, 1987, "The Study of the Politics of Urban Development," In C. N. Stone and H. T. Sanders (eds.), *The Politics of Urban Development*, Lawrence: University Press of Kansas, pp. 3-22.

Storey D. J., 1990, "Evaluation of Policies and Measures to Create Local Employment," *Urban Studies*, Vol. 27, No.5, pp.669-684.

Struyk, Raymond J. and Franklin J. James, 1975, *Intrametropolitan Industrial Location*, Lexington, Mass.: Lexington Books.

Tiebout, Charles M., 1956, "A Pure Theory of Local Public Expenditure," *Journal of Political Economy*, Vol. 64, Oct., pp. 415-424.

Wacher, M and S. eds. *Toward a New U.S. Industrial Policy*. Philadelphia: University of Pennsylvania Press.

Wassmer, R .W., 1992, "Property Tax Abatement and the Simultaneous Determination of Local Fiscal Variables in a Metropolitan Area," *Land Economics*, Vol.68, No.3, pp.263-82.

, 1994, "Can Local Incentives Alter a Metropolitan City's Economic Development?" *Urban Studies*, Vol. 31, No. 8, pp. 1251-1278.

Watson, Douglas J., 1995, *The New Civil War: Government Competition for Economic Development*, Westport, CT: Praeger Publishers.

Wasylenko, M., 1980, "Evidence on Fiscal Differentials and Intrametropolitan Firm Location," *Land Economics*, pp. 339-349.

, 1981, "The Location of Firms: The Role of Taxes and Fiscal Incentives," In R. Ball (ed.) Urban Government Finance: Emerging Trends, Vol. 20, Urban Affairs Annual Reviews, (Beverly Hills: Sage), pp.155-189.

, 1991, "Empirical Evidence on Interregional Business Location Decisions and the Role of Fiscal Incentives in Economic Development," Henry W. Herzog, Jr. and Alan M. Schlottmann (ed.) 1991, Industry Location and Public Policy, Knoxville, TN: University of Tennessee Press. PP.13-30.

Weinstein Bernard L. and Robert E. Firestine, 1978, *Regional Growth and Decline in the United States: The Rise of the Sunbelt and the Decline of the Northeast*, New York, NY: Praeger Publishers.

Wendling, W. R., 1981, *Issues Related toTax Exemption for Commerce and Industry*, Kalamazoo, MI: The W. E. Upjohn Institute for Employment Research.

Wheat, Leonard F., 1973, *Regional Growth and Industrial Location*, Lexington, Mass.: Lexington Books.

White, Michelle J., 1975, "Firm Location in a Zoned Metroppolitan Area," Edwin S. Mills and Wallace E. Oats (ed.,), *Fiscal Zoning and Land Use Controls: The Economic Issues*, Lexington, Mass.: Lexington Books.Williams, 1967, pp. 175-202.

Williams, William V., 1967, "A Measure of the Impact of State and Local Taxes on Industry Location," *Journal of Regional Science*, Vol. 7, No. 1, pp. 49-59.

Willis K. G., 1985, "Estimating the Benefits of Job Creation from Local Investment Subsidies," *Urban Studies*, Vol. 22, pp. 163-177.

Wolkoff, M., 1982, "Tax Abatement as an Incentive to Industrial Location," in *Michigan's Fiscal and Economic Structure*, H. E. Brazer and D. S. Laren (Ed.,), Ann Arbor, MI: University of Michigan Press.

, 1983 " The Nature of Property Tax Abatement Awards," Journal of the American Planning Association, Vol. 49, No. 1, pp. 77-84.

, 1985, "Chasing a Dream: The Use of Tax Abatements to Spur Urban Economic Development," *Urban Studies*, Vol. 22, pp.305-315.

Wolman, H., 1983, "Understanding Local Government Responses to Fiscal Pressure." *Journal of Public Policy*, Vol. 3, August, pp. 245-264.

Wolman, Harold, 1993, "Cross-National Comparisons of Urban Economic Programms: Is Policy Transfer Possible?" David Fasenfest (ed.) *Community Economic Development: Policy Development in the US and UK*, New York: St. Martin's Press, pp. 14-44.

Wong, K. K. 1988. "Economic Constaintand Political Choice in Urban Policymaking." *American Journal of Political Science* 32, No. 1 (February): pp. 1-18.