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Cover Page Footnote

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THE INVESTMENT DECISION IN THE CENTRAL CITY: A CONSIDERATION OF A PROPERTY TAX ABATEMENT LAW

*Dipak K. Gupta**

*Louis M. Rea***

I. Introduction

Dilapidated and deteriorated housing in the large central cities of this country continues to be a largely unresolved social problem. Research conducted at the MIT-Harvard Joint Center for Urban Studies demonstrated that 6.9 million households suffered as a result of the physical inadequacy of their units in 1970 and 6.2 million more households were burdened either by the excessive cost or by the inadequate size of the unit, yielding a total of 13.1 million "housing-poor" households. The patterns of deprivation vary a great deal across the country. Some difficulties, such as inadequate plumbing, are serious in some areas, insignificant in others. Other difficulties, such as excessive rent burdens, are found everywhere.¹ The removal of the worst units from the housing stock has sometimes been the result of conscious public policy. However, much of the loss of substandard and even standard housing in the central cities has been the result of large scale abandonment of rental housing by its owners.

Many square miles of our cities consist of old neighborhoods where population decline appears imminent or has already begun. These are the "gray areas" of obsolescent housing destined to be vacated at an increasing rate in the near future. These declining neighborhoods are not slums and still are largely occupied by whites. The general neighborhood situation is so unattractive, however, that property owners feel that expense for maintenance is too risky and, by withholding their efforts, contribute to the increasing unattractiveness of the area.² Two alternatives are available for

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1. The results of this housing research, conducted at the MIT-Harvard Joint Center for Urban Studies, is reported in D. Birch *et al.*, *America's Housing Needs: 1970 to 1980* in L. LOEWENSTEIN, *URBAN STUDIES* 328 (2d ed. 1977).

2. The "gray area" concept and the issue of declining, older neighborhoods within metropolitan areas are pursued in B. J. FRIEDEN, *THE FUTURE OF OLD NEIGHBORHOODS: REBUILDING*

dealing with "gray areas." Large scale abandonment can be accepted and solutions for large scale rebuilding can be sought; or, a means can be sought to foster renewal of existing structures within the context of the traditional neighborhood. This Article pursues the latter alternative.

In such an environment, landlords and homeowners find that rents for lower quality housing located in the most unattractive parts of the city are often insufficient to offset rising taxes, high insurance premiums, interest payments, and maintenance cost. Low income tenants, who already pay high proportions of their incomes in rent, cannot readily afford raises in their rent and landlords cannot count on such rent increases as a source of revenue to offset their rising expenditures. These considerations imply that the rate of return on investment in the depressed communities is not high enough relative to investment opportunities in other parts of the metropolitan area to provide a sufficient incentive for marginal improvements in the central city housing supply.

Many proposals have been put forth and implemented in an attempt to stem the tide of central city decay, but none has met with any particular success. Direct forms of subsidy, such as urban renewal³ and low interest home loans,⁴ have been utilized as well as more indirect policies. One such indirect policy has been a property tax abatement program which attempts to encourage investment for improvements of central city dwelling units. The potential success of such a program has never been unresolved nor have the conditions and circumstances underlying the successful implementation of such a program been documented.

Accordingly, the purpose of this Article is to develop an investment decision model for analyzing the efficacy of a property tax abatement program as an incentive for investment in the depressed residential communities of the central city. In order to understand the motivation of municipalities to try tax abatement as a possible means to stem the tide of central city decay, it is first necessary to

FOR A CHANGING POPULATION 1-11 (1964); see also D. NETZER, *ECONOMICS AND URBAN PROBLEMS: DIAGNOSES AND PRESCRIPTIONS* 45-46 (1970).

3. For an interesting discussion of the failure of urban renewal to adequately rehabilitate the housing stock of the central cities, see J.P. FRIED, *HOUSING CRISIS U.S.A.* 86-94 (1971).

4. Low interest home loans were provided largely through the Federal Housing Administration (FHA). The loans, however, have historically been given to residents of single family homes in suburban locations. Consequently, the program has not had any significant impact on the provision or rehabilitation of central city housing. See *id.* at 65-71.

review the advantages and disadvantages of the property tax within the context of municipal finance. Second, it is important to place the abatement issue into some meaningful perspective by presenting some traditional mechanisms utilized by municipalities for property tax relief. Then, an ongoing tax abatement program in the city of Pittsburgh is described and analyzed within the framework of the investment decision model. Based upon the requirements of the model and the experience of the Pittsburgh Program, policy implications are presented and general recommendations for any municipality considering the enactment of such a program are offered.

This Article is intended to benefit attorneys and municipal officials who wish to enhance their understanding of the economic impacts of the property tax on the condition of central city housing. The city planners and city administrators are provided with a decision criterion for judging the prudence of adopting a tax abatement program or for improving upon an existing program in their own municipality. The urban lawyer is offered an opportunity to remain current concerning the general issue of property tax relief and the efficacy of a particular mechanism through which such relief may be available—tax abatement. Because this Article reviews a large cross-section of literature, any professional urbanist will find it a useful starting point for further research into a variety of issues related to public finance.

II. The Property Tax: Some Background Considerations

Government levies have never been popular in human history. The property tax, however, has gained distinction as the most disliked of all taxes and, as a result, it has been labeled the “last fair” tax.⁵ A survey conducted in 1972 for the United States Advisory Commission on Intergovernmental Relations documented this unpopularity in the following manner:⁶

5. See Raphaelson, *Property Assessment and Tax Administration* in J.R. ARONSON & E. SCHWARTZ, *MANAGEMENT POLICIES IN LOCAL GOVERNMENT FINANCE* 110-22 (1975) [hereinafter cited as Raphaelson]. For a detailed criticism of the property tax, see A. LYNN, JR., *THE PROPERTY TAX AND ITS ADMINISTRATION* (1969); TAX INSTITUTE OF AMERICA, *THE PROPERTY TAX: PROBLEMS AND POTENTIALS* (1967); see also G. BENSON, S. BENSON, H. McCLELLAND & P. THOMPSON, *THE AMERICAN PROPERTY TAX: ITS HISTORY, ADMINISTRATION AND ECONOMIC IMPACT* (1965) [hereinafter cited as BENSON].

6. UNITED STATES ADVISORY COMM'N ON INTERGOVERNMENTAL RELATIONS, *PUBLIC OPINION AND TAXES* 1-2 (1972).

Because the property tax is levied and administered by myriad local government units, one might have expected public attitudes toward this tax to show a high degree of variation. This was not the case. Indeed, opposition to the local property tax was uniform among respondents of various socioeconomic backgrounds. Regardless of age, income, area of residence, type of employment, race and other such factors, each subclassification voted the property tax as being the least fair—and generally by margins of 2 to 1.

The survey also revealed, quite predictably, that the majority of respondents favored the replacement of the property tax with a federal value added tax (*i.e.*, a tax on the difference between the receipts from the sales of a firm's product and the sum of the amounts paid by the firm for produced goods purchased during the accounting period) or an increased personal income tax.⁷

The most recent example of popular dissatisfaction with the property tax is, of course, the overwhelming support for Proposition 13 in California. Californians voted to decrease their property tax burden, which has been increasing at a tremendous rate in the past several years. This large scale property tax revolt is beginning to gain support in other states as well.

Although many grounds can be cited for this popular dissatisfaction with the property tax, two issues are particularly important for understanding the impacts of property tax abatement programs. One issue is the often unfair and discriminatory assessment practices and the other is the regressivity of the property tax structure.

Assessment of property values is a judgmental process.⁸ The aim of assessment is to make the assessed value as close as possible to the market value of the property. However, if the property has not been sold in the recent past, its market value must be estimated. This practice leads to the strong possibility of favoritism, corrup-

7. *Id.*

8. In order to reduce the subjectivity of assessment practices, a number of municipalities have experimented with multiple regression analysis. For example, one commentator reports that

a pilot project in Sacramento County, California, isolated the quantifiable variables of statistical significance and, using ten to thirty variables, established formulas that yielded reliable estimates of selling prices, using different equations for different neighborhoods. The estimated selling prices for the parcels sold in a neighborhood differed from the actual sale price by an average of plus or minus 5.26 percent.

Raphaelson, *supra* note 5, at 115. However, as Raphaelson points out, the use of multiple regression does not replace the assessor or his subjective judgment; it only reduces the disparity. For a more detailed discussion of the issues involved, see Givartney, *A Computerized Assessment Program* in D. M. HOLLAND, *THE ASSESSMENT OF LAND VALUE* 125 (1970); Downing, *Estimating Residential Land Value by Multivariate Analysis* in *id.* at 101.

tion, carelessness and often discrimination. During the last decade, several empirical studies of real property tax assessments have revealed an alarming pattern of discrimination against blacks and/or low income residents in several U.S. cities.⁹

The second criticism of the property tax is that it is extremely regressive. That is, the burden of the tax rests more heavily on the poor than on the rich, especially in the short run.¹⁰ This view stems

9. Clement, *Discrimination in Real Property Tax Assessment: A Litigation Strategy for Pennsylvania*, 36 U. PITT. L. REV. 285 (1974); Statement of Ralph Nader and Jonathan Rowe before the Senate Subcommittee on Intergovernmental Relations, May 9, 1972; W.J. BEERMAN, *THE PROPERTY TAX AND THE SPATIAL PATTERN OF GROWTH WITHIN URBAN AREAS* (Research Monograph 16, 1969); ARTHUR D. LITTLE, INC., *A STUDY OF PROPERTY TAXES AND URBAN BLIGHT* (U.S. DEP'T OF HOUS. AND URB. DEV. 1973) (2 vols.) [hereinafter cited as LITTLE STUDY]; Black, *The Nature and Extent of Effective Property Tax Rate Variation Within the City of Boston*, 25 NAT'L TAX J. 203 (1972); Oldman & Aron, *Assessment-Sales Ratio Under the Boston Property Tax*, 18 NAT'L TAX J. 36 (1965); T. SMITH, *REAL PROPERTY TAXATION AND THE URBAN CENTER: A CASE STUDY OF HARTFORD, CONNECTICUT* (1972); CONNECTICUT CITIZEN RESEARCH GROUP, *STUDY OF TAX ASSESSMENT IN NEW HAVEN, CONNECTICUT* (1973); ERIE COUNTY PUBLIC INTEREST RESEARCH GROUP, *RESIDENTIAL PROPERTY ASSESSMENTS IN THE CITY OF BUFFALO: A STUDY OF THE USE OF ADMINISTRATIVE DISCRETION* (1973); Behrens, *Property Tax Inequities and Other Differences in a New Scene*, presented at the Conference of the National Tax Association—Tax Institute of America, October 14, 1974; F. JAMES, *AN EMPIRICAL AND THEORETICAL ANALYSIS OF MEASURES OF THE UNIFORMITY OF THE PROPERTY ASSESSMENTS UNDER THE PROPERTY TAX* (1973); Report of the Atlanta Urban League on the Fulton County Property Tax (Sept. 1974); COLORADO PROJECT — COMMON CAUSE, *THE UNFAIRNESS OF THE RESIDENTIAL PROPERTY TAX* (1972); G. PETERSON, *ASSESSMENT/SALES RATIO STUDY FOR CLAIBORNE COUNTY, MISSISSIPPI* (1972).

10. There are several economists who have argued that the long run impact of the property tax may be progressive. Harold Groves argues that "regressivity is hardly the most impressive charge that can be laid against the property tax." He further adds: "At any one time there are many people over-housed and under-housed, so to speak, because they have not yet adjusted their housing expenses to their incomes, up or down. The new evidence poses the possibility that for income classes of lifetime income, differences in burden over most of the income scale may pretty well average out." Groves, *Property Tax—Effects and Limitations* in TAX INSTITUTE OF AMERICA, *THE PROPERTY TAX: PROBLEMS AND POTENTIALS* 56-57 (1967). In support of this hypothesis Dick Netzer noted that "considered in aggregate . . . the tax has positive advantages on distributional and efficiency grounds." He further explained that the property tax contains a high degree of vertical equity, in that it redistributes income from the rich to the poor. The vertical equity occurs

because the tax itself is more or less proportional in its incidence among income groups, but the expenditures it finances are heavily "pro-poor" in their incidence. The property tax in the aggregate also tends to increase the application of resources to high return human investment and may deter somewhat lower return investment in physical capital.

D. NETZER, *ECONOMICS OF THE PROPERTY TAX* 164-65 (1966).

However, in the short run, both Groves and Netzer agree upon the regressivity of the property tax. For an excellent and concise discussion of the subject see Note, *Property Tax Relief: A Viable Adjunct to Housing Policy?*, 1972 URB. L. ANN. 171.

from the fact that the property tax on buildings, on building improvements, and on land is largely passed on or shifted to the final consumer of the services of the property. Specifically, renters bear the tax on residential buildings through higher rents, consumers ultimately pay the tax on commercial and industrial properties in the form of higher prices for the goods they buy, and homeowners (as opposed to the developers and landlords) bear the tax in high mortgage payments.¹¹ Netzer argues that the property tax is analogous to a consumption tax on shelter. "Viewed as an excise tax and leaving aside all benefit considerations, [the property tax on housing] is higher in rate than any other generally used American consumption tax, except taxes on liquor, tobacco, and gasoline."¹²

Low income families spend a large share of their income on consumption of essential items such as food and shelter. Consequently, the property tax is inherently structured to impact the low income budget most severely. In 1968, the Kaiser Report showed that property taxes account for "26 percent of monthly shelter costs in moderately priced family housing."¹³ This evidence prompts Netzer to conclude that the property tax discourages consumption of housing especially in the central city.¹⁴

One of the major problems with the property tax is that it penalizes those who improve the condition of their dwelling. This, indeed, is an unfortunate feature of the tax since an investment in home improvement not only enhances the quality of the individual dwelling unit but also enhances the general desirability of the neighborhood, thereby increasing property values throughout the neighborhood. Thus, investments for home improvement should be rewarded

11. The empirical studies generally support the hypothesis that the amount of forward shifting of the property tax depends upon the elasticity of demand for housing. See Orr, *The Incidence of Differential Property Taxes on Urban Housing*, 21 NAT'L TAX J. 253 (1968); Orr, *The Incidence of Differential Property Taxes on Urban Housing: A Response*, 23 NAT'L TAX J. 99 (1970); Orr, *The Incidence of Differential Property Taxes on Urban Housing: A Reply*, 25 NAT'L TAX J. 217 (1972); Black, *The Nature and Extent of Effective Property Tax Rate Variation Within the City of Boston*, 25 NAT'L TAX J. 203 (1970); Coen & Powell, *Theory and Measurement of the Incidence of Differential Property Taxes on Rental Housing*, 25 NAT'L TAX J. 211 (1972); Hyman & Pasour, *Property Tax Differential and Residential Rents in North Carolina*, 26 NAT'L TAX J. 303 (1973); Netzer, *The Incidence of Property Tax Revisited*, 26 NAT'L TAX J. 515 (1973).

12. D. NETZER, *IMPACT OF THE PROPERTY TAX: ITS ECONOMIC IMPLICATIONS FOR URBAN PROBLEMS* 16 (National Comm'n on Urban Problems Report to Joint Economic Comm'n) (Joint Commission Print 1968).

13. PRESIDENT'S COMMITTEE ON URBAN HOUSING, *A DECENT HOME* 99 (1968).

14. Netzer, *supra* note 12, at 75.

rather than discouraged by the imposition of a higher tax liability. Dennis L. Wittman in his article, *Property Tax Relief: A Viable Adjunct to Housing Policy?*, argues that¹⁵

[a high property tax] translates into discouraging those families financially able to choose their home location from selecting a central city site, thereby hastening the middle-class flight to the suburbs and more effectively isolating the poor. It also dampens the interest that many property owners might otherwise have in improving, modernizing, or rehabilitating their central city property, since, in many cities, such activities will lead to some increase in assessments. For the poor, there is little that can be foregone in order to spend more on rent, so that whatever rehabilitated housing there might be is effectively beyond their reach. Those few low-income families that own a home in the inner city often are forced to let their property become dilapidated.

Based upon this review, it can be concluded that the property tax acts as a disincentive to home improvement in particular and to investment in the housing market in general. These impacts are particularly burdensome to low income residents who occupy central city dwellings. Despite these negative consequences of the property tax, its importance in generating desperately needed revenue for municipalities should not be overlooked. Thus, it is appropriate at this point to stress the local dependency upon this source of revenue.

The property tax in the United States originated as a local tax¹⁶ and, despite its unpopularity, it has come to be the main source of tax revenue for local governments.¹⁷ As a source of revenue, the

15. Note, *Property Tax Relief: A Viable Adjunct to Housing Policy?*, 1972 URB. L. ANN. 171, 179-80.

16. Originally many states assumed the role of administering property taxes, fearing that the local political influence would make proper assessments of wealthy property owners with political ties impossible. Slowly they delegated it to the local authorities. Thus, before 1910, the state of California used to assess and collect the property tax. By the 1930s the fiscal division of revenue sources was completed and the main revenue generators for federal, state and local governments became income, sales and property taxes, respectively. For a history of the property taxes, see BENSON, *supra* note 5. See also D. NETZER, *ECONOMICS OF THE PROPERTY TAX* (1966).

17. The last three decades have shown a decline in the importance of the property tax as a percentage of total local government revenue. While in 1950, the property tax accounted for about 43% of the total local government revenue, in 1976, the comparable figure was approximately 31%. This decline in percentage has resulted from an increased dependence upon federal subsidies, grants, and transfers. However, the percentage of the property tax to the tax revenue still remains extremely high, around 80%, as a nationwide average. U.S. BUREAU OF THE CENSUS, *GOVERNMENT FINANCES* (1976-77). The passage of Proposition 13 in California and similar tax cut proposals in other states is sure to expedite this declining trend.

property tax is most important for school districts (close to 98 percent of total tax revenue), followed by townships (about 90 percent) and counties (86 percent).¹⁸

This overwhelming dependency by local governments upon property tax revenue can be explained within the framework of the following rationale. First, the property tax has proven to be an extremely good revenue raiser. Only federal personal income and payroll taxes generate more money.¹⁹ Second, unlike many other revenue sources, property tax receipts are extremely stable. This stability allows local governments to plan their expenditures well in advance. Third, tax avoidance is extremely difficult. Unlike intangible or other forms of personal properties, real property is immobile and extremely difficult to conceal. Finally, since the provision of local public services enhances the desirability of a community, property values will tend to rise. The resulting higher tax revenues to some extent tend to represent a charge to those who benefit from these services.

These factors go far in explaining why local governments have been reluctant to tamper with their most vital source of revenue. Attempts to alleviate the impact of the property tax on city dwellers has met with serious revenue losses. For example, the New York City tax exemption in the 1920s resulted in the loss of \$191,387,000 of potential revenue.²⁰

The evaluation of any property tax abatement program must be conducted within the context of the two countervailing forces presented in the foregoing discussion. To recapitulate, although the property tax is a major source of revenue and not easily forsaken in the absence of viable alternatives, it has severe adverse effects on capital investment decisions in the urban housing market. The success of a tax abatement program will lie in the ability of the local government to sustain short term revenue losses while promoting incentives for long term capital improvement.

18. *Id.* The share of the property tax to total tax revenue was, of course, much lower (around 60%) for those municipalities which could raise property tax revenues from commercial bases such as large shopping centers. Note that the total tax revenue includes such items as the sales tax, local income taxes, hotel taxes, etc.

19. See R. D. REISCHAUSER, R. W. HARTMAN & D. S. SULLIVAN, *REFORMING SCHOOL FINANCE* 24 (1973).

20. M. WALKER, *URBAN BLIGHT AND SLUMS: ECONOMIC AND LEGAL FACTORS IN THEIR ORIGIN, REHABILITATION, AND PREVENTION* 287 (1938).

III. Property Tax Relief: The Abatement Issue

In order to assess the desirability of a property tax exemption on building improvements, it is necessary to explain the potential significance of such exemptions to landlords and homeowners. Traditional theory contends that a landlord can change the value and rent levels of his building by "moving" it to a different level of quality. That is, a landlord will increase expenditures for maintenance and capital improvement only if it can be justified by the increase in rents made possible by such expenditures. The expected return after the property tax must exceed the cost of capital. It is worthwhile for the landlord to continue expenditures for improvements as long as the cost of each marginal improvement induces enough of a rise in rents after the property tax to match the opportunity cost of capital.

If a landlord wishes to calculate the potential long-term profitability of a tax exemption on property improvement, he would probably assume that his assessment would be increased by the amount of his improvement expenditure, which should approximate the increase in the value of the building. If the building is not reassessed pursuant to the improvement, the annual savings to the landlord would equal the tax rate times the increase in value, adjusted for the local assessment ratio (the proportion of the fair market value upon which the property tax is based). If the building owner finds that as a result of the reassessment deferment (tax liability on a housing improvement that is exempted) on an improvement that the aftertax return will increase (*e.g.*, higher rents), then the additional improvement that would otherwise be unprofitable may become profitable.²¹

For low income housing in the central city, it is not likely that the benefits of a property tax abatement on improvements would develop in the manner implied by the preceding theoretical discussion. In blighted areas, a tax exemption would not do very much to upgrade the existing housing stock. Unless a landlord can expect an actual increase in rent to offset his rehabilitation expenditures, he will not rehabilitate. The crucial fact is that poverty area landlords are afraid to raise rents and thus cannot profitably rehabilitate. A reassessment deferment by itself would probably be an insufficient

21. J. HEILBRUN, *REAL ESTATE TAXES AND URBAN HOUSING* 8-36, 85-104 (1966). See also Heilbrun, *Reforming the Real Estate Tax to Encourage Housing Maintenance and Rehabilitation* in A. BECKER, *LAND AND BUILDING TAXES* 63, 64-69 (1969).

incentive to stimulate investment in slums. But if exemption from existing taxes were granted, or if the reassessment deferment were combined with other government subsidies, the tax incentive would contribute toward making even slum housing improvement profitable.²²

This conclusion is corroborated by an empirical study conducted by Arthur D. Little, Inc.²³ The study states that the most significant obstacles to rehabilitation of rental properties in the central city were obtaining financing, the deterioration and resulting undesirability of various neighborhoods, and the inability to raise rents to cover any proposed rehabilitation. It is concluded that a property tax exemption scheme limited to lower income housing is unlikely to create very many windfalls. In the absence of a wide range of government subsidies, such new improvement rarely takes place.

Kuchling views tax abatements as just one possible means to create a better climate for rehabilitation and provide some definite financial incentives to rehabilitate. He further argues that tax abatements, alone, may not provide a great incentive for the individual homeowner or landlord in low income areas, but they do provide a substantial tax savings to the developer and commercial property owner who is interested in new construction or rehabilitation.²⁴

Some states and municipalities have recognized the importance of providing tax exemptions on a massive scale in order to rehabilitate blighted areas of the city. The most common vehicle for granting property tax exemptions to private housing landlords is the urban redevelopment company.²⁵ Usually, the company contracts with a state or local housing authority to establish the terms on which the company will operate. It is then subject to initial approval and continuing supervision by the authority. The redevelopment company is required to formulate a complete plan for the redevelopment of a blighted area (not just one or a few dwelling units). Both

22. Alpert, *Property Tax Abatement: An Incentive for Low Income Housing*, 11 HARV. J. LEGIS. 1, 7 (1973).

23. 1 LITTLE STUDY, *supra* note 9.

24. R. KUCHLING, *REHABILITATION—TAX ABATEMENTS AND DOWNWARD ASSESSMENTS* (1974).

25. Several states have enacted legislation employing the urban redevelopment company: HAWAII REV. STAT. § 53-38 (1968); MASS. GEN. LAWS ANN. ch. 121A, § 10 (1969); MICH. COMP. LAWS ANN. § 125.912 (Supp. 1973); MINN. STAT. ANN. § 462.651 (1963); MO. ANN. STAT. § 353.110 (Vernon 1966); N.J. STAT. ANN. § 55:14D-26 (1964); N.Y. PRIV. HOUS. FIN. LAW § 211 (McKinney 1962); OHIO REV. CODE ANN. § 1728.10 (Page 1964).

commercial and residential improvements can be involved. The tax exemption takes the form of a broad governmental assistance program which includes land cost writedowns and use of the state's condemnation power for assembling sites.

Proponents of the urban redevelopment companies argue that despite these tax exemptions, the long run effect is actually to increase the municipal tax revenue.²⁶ If the improvement of a large area causes property values in surrounding areas to rise, new tax revenue will be generated. Revenue will also increase if the redeveloped housing is upper income rather than low income housing. However, opponents of the urban redevelopment company contend that if the ultimate impact of the tax exemptions is to improve the housing of middle income tenants at the expense of lower income tenants, then it is difficult to justify the existence of the company.²⁷

Another vehicle utilized for property tax exemptions is the limited dividend housing company.²⁸ Unlike the requirement of the urban redevelopment company, these companies do not have to redevelop an entire area and they are limited to residential construction. The limited dividend companies are also supervised by a governmental agency and they generally qualify for the same state and municipal subsidies as redevelopment companies. At least three states have experimented with these companies—Delaware, New Jersey, and New York.²⁹

The limited dividend housing companies have also been sharply criticized on the ground that the mere limitation of dividends which may be paid out (6 to 8 percent of the profit on investment) is

26. For a more elaborate discussion of this effect, see Neufeld, *Is Tax Exempt Property a Municipal Asset?* 18 NAT'L TAX J. 415 (1965).

27. To insure that the urban redevelopment company improve the plight of low income tenants, all state statutes, except Ohio's, provide that the annual dividend which the company may pay is limited to between 5 and 10 percent of the investment. It is hoped that such a limit on the profit to be taken out would encourage lower rents and hence make the buildings available to lower income tenants. This procedure, however, is often not adequate to encourage the development of low income housing. See note 25 *supra*.

28. The limited dividend housing companies are similar to the redevelopment companies in structure and intent, but unlike the redevelopment companies, they do not have to redevelop an entire area and are to build only housing. They are also subject to supervision by a governmental agency and generally qualify for the same state and municipal subsidies as redevelopment companies: condemnation for site assembly, land cost writedown, and tax exemptions. However, the dividends of these companies permitted to be paid out to stockholders are limited to 6 to 8 percent of profit on investment. See Alpert, *supra* note 22, at 17.

29. DEL. CODE ANN. tit. 31, § 4116 (1953); N.J. STAT. ANN. §§ 40.55C-40, 55:16-18, 55:14E-11 (1964); N.Y. PRIV. HOUS. FIN. LAW §§ 33, 93 (McKinney Supp. 1973).

insufficient to insure that the tax subsidies benefit the poor and inadequately housed.³⁰ For example, despite the statutory mandate that benefits are to be provided only for families of low income, it is apparent that New York has allowed rents higher than the poor can afford.³¹

In Connecticut, Vermont, and Michigan, individual landlords are provided a property tax abatement contingent on the requirement that their housing is used solely for low income families. Connecticut has provided government-aided housing with an exemption from all property taxes, not merely reassessment deferment. The applicable statute, however, stipulates that such exemption will be terminated at any time when the housing is not solely for low or moderate-income persons or families.³² Vermont and Michigan have tied eligibility for property tax abatement to the eligibility of landlords to receive federal mortgage subsidies.³³ That is, unless the landlord intends to construct housing for low or moderate income families, the mortgage assistance would not be forthcoming. While the condition tends to exclude those tenants who can afford adequate housing, it also excludes tenants whose landlords have not sought federal mortgage assistance.³⁴

Generally, the tax abatement statutes discussed above do not encompass resident landlords and individual homeowners in low income areas. These groups do not undertake major areawide redevelopment. They are not likely to be involved with limited dividend housing companies. Also, they are not eligible for federal mortgage subsidies. However, the resident landlord and single family homeowner are most likely to maintain livable dwellings in poverty areas and deserve the reassessment deferment as much as the more heavily subsidized landlords. We will return to this issue of reassessment deferment for single family homeowners later in this Article.

At least six states (Indiana, Connecticut, Pennsylvania, Ohio, New York, and Vermont) currently authorize tax exemptions for building owners who do not operate under the broad government

30. See Alpert, *supra* note 22, at 18.

31. Some of the difficulties associated with affordable rents in New York are documented in Quirk and Wein, *Homeownership for the Poor: Tenant Condominiums, The Housing and Urban Development Act of 1968, and the Rockefeller Program*, 54 CORNELL L. REV. 811 (1969).

32. CONN. GEN. STAT. ANN. § 8-215 (1971).

33. VT. STAT. ANN. tit. 32, § 3843 (Cum. Supp. 1973); MICH. COMP. LAWS ANN. § 125-1415 (Supp. 1973).

34. OP. CONN. ATT'Y GEN., Conn. L.J., June 9, 1970, at 12.

exemption systems previously discussed. Indiana has attempted to carefully define the eligible beneficiaries of the tax exemption to avoid the exclusion of low income residents. A tax exemption is limited to housing with a low market value. Such housing is more likely to be occupied by low income residents. Thus, the rehabilitation of inexpensive housing is the aim of the Indiana statute.³⁵ Connecticut, Pennsylvania, Ohio, and New York require that the property improvement take place within an area declared by a government agency or the local legislature as deteriorated or ripe for redevelopment in order to qualify for tax exemption.³⁶ The limitations are likely to be insufficient to restrict benefits to low income residents of the city. Vermont, without any major blighted urban areas, authorizes its municipalities to grant a general tax exemption. This is an exemption for up to three years on the first \$15,000 appraised value of any newly constructed dwelling. This exemption does not apply to those taxes on the value of the land as distinct from buildings.³⁷ Without more precise limitations on rentals, on income levels, or on the definition of the poverty area, higher income residents could be the primary beneficiaries. Moreover, property owners, who would probably have improved their property in the absence of a property tax exemption, would obtain a windfall if their property were declared eligible under the abatement statute.

In light of this comparison of the various forms of tax abatement legislation, an investment decision model is developed below which specifies the conditions under which capital investment in the housing stock is profitable. Particular attention is given to the required investment incentives in the impoverished parts of the city.

IV. A Model of Investment Decision

In order to assess the impacts of a tax abatement program in generating investments for housing improvement, it is important to specify the dynamics of the investment decision.

The value of the property (V) is comprised of two factors—the structure (V_k) and the land (V_l). This dichotomy derives from the fact that the property tax is comprised of the tax on the condition

35. IND. ANN. STAT. § 6-1-10.1-1 (Burns 1972).

36. CONN. GEN. STAT. ANN. § 12-65 (West 1972); N.Y. REAL PROP. TAX LAW § 489(1)(a) (McKinney 1972); OHIO REV. CODE ANN. § 3735.67 (1971); PA. STAT. ANN. tit. 72, §§ 4711-16 (Supp. 1973).

37. VT. STAT. ANN. tit. 32, § 3836 (1970).

of the property (V_k) as well as an exogenous assessment factor based upon the condition of the neighborhood (V_L).

Specifically, any investment made on property accrues to the value of the structure and the value of the land is exogenous to the investment decision.³⁸ Although this distinction between land and structure is somewhat arbitrary, it is conceptually sound and does facilitate the analysis at hand.

The value of property can be expressed as follows:

$$V = V_k + V_L \quad (1)$$

where V_k = value of the structure, and

V_L = value of the land.

The present value³⁹ of the structure is explained by:

$$V_k = \sum_{t=1}^n \frac{(R - C)}{(1 + i)^t} \quad (2)$$

where R = cost

i = the rate of interest

t = time period

n = the expected life span of the structure.

The value of the land (V_L) is dependent upon the condition of the neighborhood and is assumed to be a function of time.⁴⁰ Thus:

$$V_L = l(t) \quad (3)$$

38. An interrelationship between the neighborhood condition and the structure is, of course, possible if the investment is quite a large one, such as a shopping center or development project. However, since this analysis is primarily concerned with those who own existing structures (homeowners and landlords), rather than developers, the assumption is realistic.

39. The desirability of an investment is usually measured in terms of the discounted value of the future stream of income. The rationale here is that a dollar earned today is worth more than a dollar to be earned at some time in the future. Today's dollar can be invested now at compound interest to be realized ten years later. The dollar to be earned ten years from now should reflect this potential loss. Thus, in an inverse fashion, the present value of a future stream of investment is shown as follows:

$$(R_0 - C_0) + \frac{R_1 - C_1}{(1 + i)} + \frac{R_2 - C_2}{(1 + i)^2} + \dots + \frac{R_{10} - C_{10}}{(1 + i)^{10}}$$

where R is the revenue, C is the cost, i is the rate of interest, and subscripts 0 through 10 represent the years of investment. The present value criterion states that a project should be undertaken if the sum of future returns (income) minus costs, discounted back to the present, is positive, that is, if the present value is greater than zero. See R.A. BAUER & K.J. GERGEN, *THE STUDY OF POLICY FORMATION* 87-93 (1968). E.J. MISHAN, *ECONOMICS OF SOCIAL DECISIONS: ELEMENTS OF COST-BENEFIT ANALYSIS* 165-263 (1973).

40. This assumption may be justified by the fact that the present model is concerned only

For housing units, it can be assumed that n is quite large and the following approximation can be used for simplicity:⁴¹

$$V_k = \frac{R-C}{i} \quad (4)$$

as $n \longrightarrow \infty$

Housing production is a function of capital investment. Thus:

$$q = f(x)$$

where q = housing production

x = capital investment.

The revenue from an investment in real estate consists of three factors. Two of these are tangible and one is intangible: (1) rents; (2) equity accrued from the appreciation of the property; and (3) psychic benefits derived from living in an improved dwelling unit. The revenue generating capability of a property is a direct function of capital investment (x), subject to a diminishing rate of return.⁴²

with the renovation of already existing housing and not with the construction of new units. Also, since the distinction between land and structure is conceptual, that portion of land value, which is a function of investment (rather than a function of time) can be combined with the investment in the structure.

41. See Barlev & May, *The Effects of Property Taxes on the Construction and Demolition of Houses in Urban Areas*, in *ECONOMIC GEOGRAPHY* 304 (1976).

42. The process of differentiation can be explained as a change in one variable as a result of a change in another. Thus, a small change in revenue resulting from a change in capital investment can be written as $\frac{\delta R}{\delta x}$ which means $\frac{\text{change in revenue}}{\text{change in capital investment}}$. Now, if the above ratio is positive (greater than zero), it is inferred that an investment in the improvement of the housing stock will bring about an increase in revenue, since improved housing conditions will bring higher rents and will ensure a higher resale value of the property. However, the law of diminishing returns reminds us that there is a limit beyond which revenue cannot be raised as a result of further capital investment. That is, over time, the revenue will fail to respond to any more investment. With the marginal revenue (an additional dollar of revenue resulting from an additional dollar of capital investment) turning negative, the situation signifies a case of over-investment. This over-investment is expressed by setting the second derivative less than zero. In mathematical terms, this can be expressed as

$$\frac{\delta^2 R}{\delta x^2} < 0.$$

$$\begin{aligned}
 R &= g(q) & (5) \\
 \frac{\delta R}{\delta x} &> 0 \\
 \frac{\delta^2 R}{\delta x^2} &< 0
 \end{aligned}$$

The cost to the investor can be expressed as a combination of four separate factors: (1) interest payments which are a direct function of the capital investment; (2) the tax on the structure; (3) the tax on the land; and (4) the cost of maintenance and rehabilitation. Thus, the cost function can be written as:

$$C = ix + \lambda V_k + \lambda^\alpha V_L + M \quad (6)$$

where λ = the tax rate

M = the cost of maintenance, which is a function of time. Thus,

$$M = m(t) \quad \text{and} \quad (7)$$

$\alpha \neq 1$ if land is taxed at a different rate than the structure.

By substituting (3), (4) and (7) into (6), we obtain:

$$C = ix + \frac{\lambda(R-C)}{i} + \lambda\alpha l(t) + m(t) \quad (8)$$

or,

$$C = \frac{i}{1+\theta} [ix + \theta R + \lambda\alpha l(t) + m(t)] \quad (9)$$

$$\text{where } \theta = \frac{\lambda}{i}$$

Profit on investment is expressed as the difference between revenue and cost:

$$\pi = R - C$$

or,

$$\pi = Rf(x) - \frac{1}{1+\theta} [ix + \theta R + \lambda\alpha l(t) + m(t)] \quad (10)$$

Since the magnitude of λ is likely to be substantially less than i , it can be assumed that:

$$\frac{1}{1+\theta} \equiv \frac{1}{1+\frac{\lambda}{i}} \approx 1$$

This assumption is one of convenience and can be justified for the most deteriorated parts of the city in the following manner. First, the market rate of interest for home improvement would vary from about 8-9 percent to 12-13 percent depending upon the credibility of the borrower and the location of the project. The less desirable the location, the higher will be the rate of interest. Second, since the rate of interest (i) also reflects opportunity costs, it should also incorporate the various factors of risk to the investors. Because the

market rate of interest cannot be considered uniform throughout the entire city, the value of $1/1+\theta$ must also vary with location. Stegman argues that investors demand the strong possibility of a return on their inner city housing investments of around 25 percent before they will commit their resources. This figure reflects an opportunity cost comprised of several factors. There are few opportunities for appreciation and capital gains; consequently, tax savings from deducting this disincentive are the risks and uncertainties of maintaining positive cash flows over extended periods; the high level of management skills required for satisfactory performance, and the hostile environment of the inner city market.⁴³ Hence, assuming that the effective tax rate ranges between 2 and 3 percent⁴⁴ and the rate of interest ranges between 8 and 23 percent over the entire metropolitan area, the value of $1/1+\theta$ varies widely between .93 and .73. The ratio declines with the increasing desirability of the neighborhood and this reduces the effective cost functions for those areas. Conversely, this ratio will approach 1 in the less desirable section of the city.

The first order profit maximization condition states that:⁴⁵

$$\frac{\delta\pi}{\delta x} = R' [f'(x)] - i - \theta R' [f'(x)] = 0 \quad (11)$$

Rewriting (11) yields:

$$R' [f'(x)] = i + \theta R' [f'(x)]$$

or,

$$R' [f'(x)] = i + \frac{\lambda}{i} R' [f'(x)] \quad (12)$$

43. M. STEGMAN, HOUSING INVESTMENT IN THE INNER CITY: THE DYNAMICS OF DECLINE; A STUDY OF BALTIMORE, MARYLAND 1968-70 at 95-96 (1972).

44. D. NETZER, ECONOMICS AND URBAN PROBLEMS 248 (1974).

45. The maximization principle states that the first derivative be equal to zero. To describe this concept, imagine a horseshoe-like curve which rises to a peak and then falls. This curve represents a profit curve. The rising slope of the peak will be positive up to the point of the summit. At the summit, the point of maximum profit, the slope will cease to rise and will become zero (parallel to the base). After the point of summit, the slope will be negative. Hence, mathematically, the point of maximum profit occurs when the slope of the profit curve is equal to zero. This can be written as:

$$\frac{\text{change in profit}}{\text{change in capital investment}} = 0.$$

Thus, the mathematical solution at that point can be derived by taking the first derivative of the profit function with respect to capital investment. The solving of this equation would tell us exactly what amount of investment will maximize our profit.

That is, the condition for profit maximization will be satisfied when the marginal rate of return on investment ($R' [f'(x)]$) is equal to the market rate of interest (i) plus an added tax on increased revenue deflated by the market rate of interest ($\frac{\lambda}{i} R' [f'(x)]$).

Under the tax abatement program, the term $\frac{\lambda}{i} R' [f'(x)]$ becomes equal to zero, since the tax (λ) on increased revenue resulting from increased capital investment is abolished. Thus, equation (12) is reduced to:

$$R' [f'(x)] = i \quad (13)$$

Hence, equation (13) implies that it will be profitable to invest if the marginal rate of return on investment for home improvement is equal to or greater than the market rate of interest (i). Thus, the condition for profitable investment can be written as:

$$R' [f'(x)] \geq i$$

or,

$$R' [f'(x)] - i \geq 0$$

or,

$$0 \leq R' [f'(x)] - i \quad (14)$$

On the other hand, if the marginal rate of return on investment is greater than the market rate of interest plus the tax on added revenue deflated by the rate of interest, the implementation of the tax abatement program will amount to a windfall to the investors. This occurs because the rate of return is already high enough to motivate investment which would be made without the incentive program. Thus, for an abatement program to be truly successful in influencing the investment decision, the difference between the marginal rate of return on investment and the market rate of interest should be no longer than the amount of tax exemption ($\lambda R' [f'(x)]$) deflated by the market rate of interest (i). Mathematically this condition can be written as:

$$R' [f'(x)] - i \leq \frac{\lambda}{i} R' [f'(x)] \quad (15)$$

Thus, combining (14) and (15), we obtain the conditions for a successful tax abatement program:

$$0 \leq R' [f'(x)] - i \leq \frac{\lambda}{i} R' [f'(x)] \quad (16)$$

Equation (16) represents an investment decision band with an upper and lower boundary. The tax abatement program will be successful only under the following two conditions:

- Condition 1: If the marginal return to investment ($R'[f(x)]$) is lower than the market rate of interest (i), no tax abatement will provide any incentive and under these circumstances, policy must be directed at improving the rates of return (e.g., direct subsidy to the property owner).
- Condition 2: If the difference between the rate of return ($R'[f(x)]$) and the market rate of interest (i) is greater than the tax abatement deflated by the market rate of interest ($\frac{\lambda}{i} R'[f(x)]$), the tax incentive program will represent a windfall for the investors, since they would have invested without the existence of an abatement program.^{45.1}

V. The Case of Pittsburgh

The Pittsburgh ordinance authorizing tax exemption for home improvements was passed on November 21, 1973.⁴⁶ In accordance

45.1. Figure 1, on the following page, depicts these two conditions.

46. PITTSBURGH, PA. ORDINANCE NO. 596 was passed pursuant to Pennsylvania State Act No. 34 (1971) (codified at PA. STAT. ANN. tit. 72, §§ 4711-101 to -103, -201 to -205, -301 to -305 (Supp. 1978-79)).

A CROSS SECTIONAL VIEW OF THE INVESTMENT DECISION

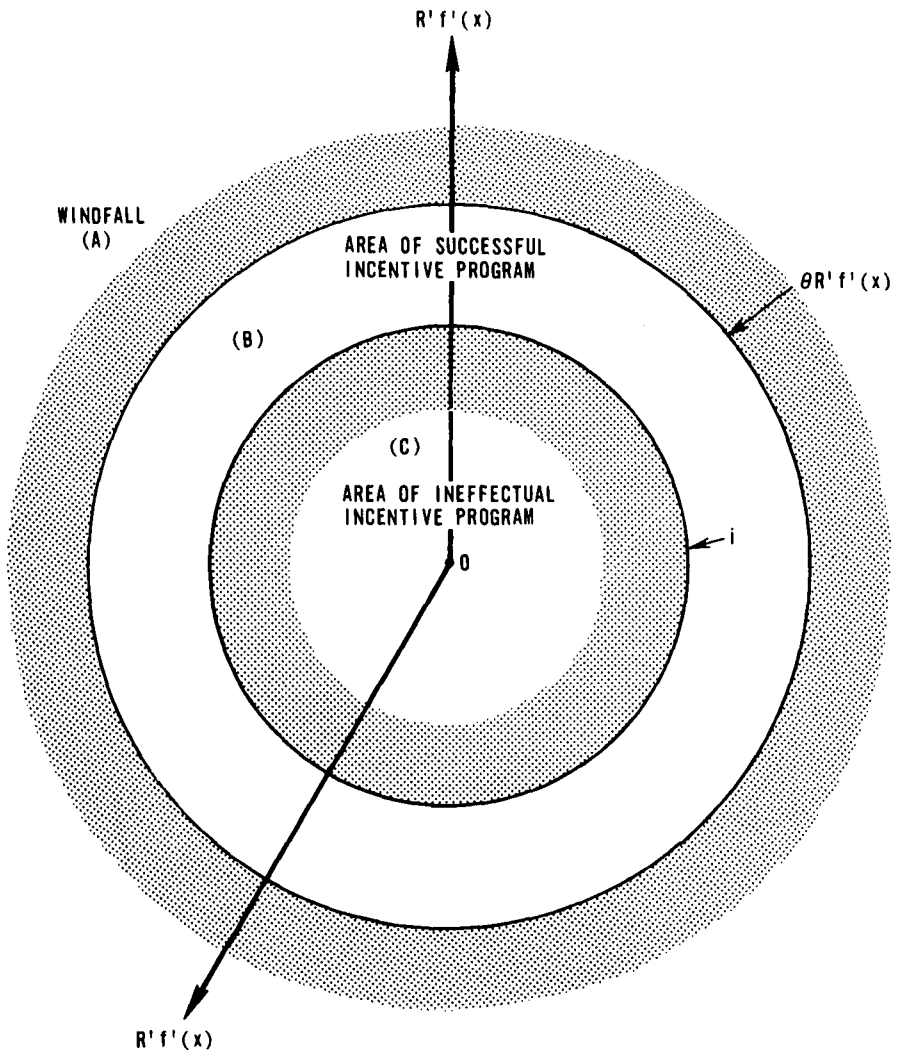


FIG. 1

with the Pennsylvania Statute, the council of the City of Pittsburgh designated the entire city (Wards 1 through 32) as constituting "deteriorated neighborhoods."⁴⁷ Persons making improvements in deteriorated residential property in the city are eligible for a tax exemption. The goal of the ordinance was to motivate homeowners to invest in the depressed areas of the city.

The process begins when a homeowner applies for a building permit to make improvements. At this time he is given an application for tax exemption, which he refers to the City Treasurer's office. Here he is interviewed to determine the nature and extent of the proposed improvements. The Treasurer then sends a copy of the completed application to the City Board of Property Assessments, which conducts a reassessment of the property. If the assessment is raised, the owner is billed for the new amount by the City, County, and school district. The City then refunds its portion of the tax increase.⁴⁸

A. Participation

As of June 1977, the program had attracted only 283 applications over a three-year period with a meager total cost of \$5,665.53 in lost revenue. Of these applications, only 14.5 percent had an upward assessment which was related to the improvements of the properties. About six properties that had higher assessments did not qualify for exemption because it was judged that the increases were not due to improvements. It should be noted that the Pittsburgh program applied only to individual homeowners, not to landlords owning rental property or to developers.⁴⁹

B. Statistical Analysis

The pattern of participation in this tax abatement program presents some noteworthy characteristics. First, exemptions ranged from quite meager to fairly sizeable. In dollar terms, exemptions ranged from \$22.29 to \$1,544.40 over a three-year period. The range of the cost of improvement also varied widely from \$400 to \$42,500.

47. PITTSBURGH, PA. ORDINANCE No. 596, § 2 (providing for tax exemption for certain improvements to deteriorated dwellings).

48. The process of administering the tax abatement program is paraphrased from G. E. STODDARD, *EVALUATION OF THE PITTSBURGH PROGRAM: TAX EXEMPTION FOR IMPROVED DWELLINGS* 2 (1974).

49. Although PITTSBURGH, PA. ORDINANCE No. 596 does not specifically restrict eligibility to individual homeowners, the program was administered in accordance with this restriction.

Despite the wide range of tax exemption, the ratio of the tax refund to the cost of improvement remained extremely low. Only 18 percent of those who qualified for an exemption through the tax abatement program received a rebate of more than one percent of the total cost of improvement per year.

Second, as shown in Table 1, the number of applications for property tax abatement as well as the number of persons who qualified for the program is substantially lower in low income wards of the city. More specifically, wards representing the central business district (1, 2, 3, and 4) have a much lower level of participation than wards in higher income neighborhoods. In fact, in the central business district, there was only one application which also qualified for the program in the past five years. In sum, this distribution of application by ward shows that the tax exemptions were not distributed to the poorest parts of the city. Consequently, the Pittsburgh experience indicates that a successful abatement program will probably have to concentrate on the "gray areas" of the city where some short range possibility for housing improvement still exists. Refer to Condition 1 of the investment decision model for a more technical explanation.

Finally, on the citywide level, no evidence supports the hypothesis that the tax abatement program had any impact on the investment decision for home improvement.

TABLE 1

PARTICIPATION IN THE PITTSBURGH PROPERTY TAX
ABATEMENT PROGRAM BY INCOME AND WARD

Median Ward Income (1970)	Wards	No. of Wards	No. of Applica- tions for Program	No. Qualified for Program
\$0-3,000	1, 3, 4	3	1	1
\$3,001-4,000	5, 22, 23	3	7	1
\$4,001-5,000	2, 21	2	4	1
\$5,001-6,000	6, 8, 12, 13, 16, 17, 25	7	49	9

\$6,001-7,000	9, 24, 26	3	18	8
\$7,001-8,000	7, 10, 11, 15, 18, 27, 30	7	60	5
More than \$8,000-	14, 19, 20, 29, 28, 31, 32	7	141	16
Total			283	41

The following data were collected on an annual basis for twenty-three years (1955 through 1977) to show: Building permits for (1) extensions and additions, and (2) alterations. The estimated cost in 1967 constant dollars for each of these improvements was also obtained.

Four regression analyses were performed, each with a different dependent variable. The dependent variables represent the building permits granted for each type of improvement and the cost of each type of improvement. Each regression equation has the same two independent variables—time and a dummy variable valued as 0 for the pre-1973 period and 1 thereafter. The purpose of the dummy variable is to determine if there is any appreciable shift in building permit applications or cost after the enactment of the abatement program.

The regression results are shown in Table 2. While the number of extensions and additions and their associated cost show a definite negative trend over time (reflecting the overall loss of population in the city), no significant trend in the number or cost of alterations was found. The dummy variable is statistically insignificant in each of the four equations. Because multicollinearity exists between the two independent variables (correlation coefficient of .73), a second set of regression equations was run on the first difference.⁵⁰ The

50. The first difference in a regression equation $Y_t = \alpha + \alpha_1 T_t + \alpha_2 D_t$, where Y_t is the dependent variable, T_t is the time series and D_t is the dummy variable, is $Y_t - Y_{t-1} = \alpha_0 + \alpha_1 T_t + \alpha_2 D_t - \alpha_0 - \alpha_1 T_{t-1} - \alpha_2 D_{t-1}$, which is equal to $\Delta Y = \alpha_1 \Delta T_t + \alpha_2 \Delta D_t$. Since ΔT_t is a vector of 1, the trend coefficient is estimated by the intercept term.

results are shown in Table 3 and they confirm the conclusions drawn from Table 2. Therefore, the introduction of the tax abatement program did not have any statistically significant impact upon the aggregate investment decisions for home improvement in the city of Pittsburgh. In other words, the taxpayers were subsidized for doing what they would have done anyway.

TABLE 2
REGRESSION RESULTS
Independent Variables

Dependent Variable	Intercept	Time	Dummy	R ²	F
# Additions	525.155 t = (30.36)*	-19.94 (12.51)*	126.50 (.94)	.904	94.63* (2,20)
# Alterations	2487.41 (8.28)*	40.41 (1.50)	-313.36 (.68)	.107	1.20 (2,20)
\$ Invested in Extensions	905.46 (5.12)*	181960 (1.12)	-5004 (2.12)	.21	2.67 (2,20)
\$ Invested in Alterations	495.06 (5.01)*	298785 (3.28)*	324599 (.22)	.55	12.15* (2,20)

*Significant at .01 level.

TABLE 3
REGRESSION ON FIRST DIFFERENCE
Independent Variables

Dependent Variable	Time	Dummy	R ²	F
# of Extensions	-13.14	36.14 (1.15)	.06	1.33 (1,20)
# of Alterations	45.67 (.32)	-375.67 (.55)	.01	.307 (1,20)
\$ Invested in Extensions	29.3524 (.23)	-1170 (2.02)	.177	4.099* (1,20)
\$ Invested in Alterations	346.27 (.57)	-2816 (1.01)	.052	1.04 (1,20)

*Significant at .01 level.

The Pittsburgh program can be summarized in the following manner. First, the amount of tax incentive is rather small both in absolute and relative terms (as a ratio of the exempted amount to the cost of improvements). Second, the subsidies were not distributed to the most depressed parts of the city. Third, no aggregate shift in the rate at which homeowners improved their properties occurred after the introduction of the tax abatement program.

C. Policy Implications

From this review of Pittsburgh's experience with its tax abatement program, it is clear that the program has failed to achieve its desired goal. These failures can be explained in terms of the investment decision model. Since the average tax abatement in Pittsburgh made up about one percent of the annual cost of improvements, the program would serve as an incentive only if the rate of return on investment is greater than the market rate of interest by at least one percent. The market rate of interest tends to be much higher than the rate of investment return in the most depressed areas of the city;⁵¹ therefore, the one percent tax abatement was too small to be effective. In terms of the investment decision model, this situation represents a violation of Condition 1. This condition is explained above in terms of the required relationships between the rate of investment return and the market rate of interest.

Under the existing ordinance, the entire city of Pittsburgh was declared "blighted."⁵² This designation possibly made homeowners in the windfall investment zone eligible for the tax abatement program. The rational investor would have invested in these zones regardless of the abatement program (see Figure 1). A remedy for this program is to identify the potential windfall areas throughout

51. Stegman demonstrated the importance of the investment return in the decision to commit funds to property improvement. According to his example, suppose there are three pieces of property valued at \$8,000 and each yielding a gross rent of \$120 per month. Assume further that after ten years the sale prices of the properties are \$11,482, \$8,000, and \$5,899 reflecting an annual appreciation of 40 percent, 0 percent, and a depreciation rate of 3 percent, respectively. If all three properties face the same maintenance costs, Stegman calculated that cash income would have to be increased by about 25 percent per year in the case of the second property which value neither appreciated nor depreciated in order to bring its returns up to the level of the first one. For the third property, which depreciated at an annual rate of 3 percent, the compensating factor would be 40 percent. M. STEGMAN, *HOUSING INVESTMENT IN THE INNER CITY: THE DYNAMICS OF DECLINE* 95-96 (1973).

52. PITTSBURGH, PA. ORDINANCE No. 596 declared Wards 1 through 32 "blighted." These wards constitute the entire jurisdiction of the City of Pittsburgh.

the city and then exclude them from the abatement program.⁵³ There may be some political and perhaps legal complexities associated with singling out certain neighborhoods and labeling them "blighted." The disadvantage of such an action could be a decline in neighborhood morale and perhaps a lowering of property values thereby exacerbating the problems of urban blight. On the other hand, if only a few obviously wealthy neighborhoods are excluded from the program, this type of problem may be significantly alleviated. Implementation of this recommendation, however, to exclude wealthy neighborhoods from the tax abatement program would help to comply with Condition 2 stipulated by the investment decision model. Specifically, this condition states that the difference between the rate of investment return and the market rate of interest should be less than the proportion of the tax abated.

With regard to those parts of the city where rates of return are lower than the market rate of interest, a more direct program of housing aid is recommended (*e.g.*, home loans, urban homesteading, etc.). Thus, a tax abatement program would seem to be most beneficial in those areas where the abated tax makes a crucial difference in the investment decision (*e.g.*, "gray areas").

Although not apparent from the Pittsburgh experience, the situation may arise whereby the investment rate of return falls short of the market rate of interest by a small amount. In this case, an increase in the tax abatement allowance could swing the investment decision from unfavorable to favorable. It would be helpful under these circumstances for the County, the school district, and other taxing jurisdictions within the metropolitan area to join with the city in exempting their portion of the property tax as well. In Pittsburgh, as mentioned above, only the city's portion of the incremental tax on proposed improvements was exempted. In terms of Figure 1, this joint action by all the relevant taxing bodies would in effect widen the band of successful program impact. More investors will be induced to participate in the abatement program because the increased tax relief will make investment profitable. However, until the present, the county and the school boards have shown little

53. Legally, Pennsylvania Act No. 34 (1971) provides the local taxing authority the discretion to define the impoverished areas that would be eligible for tax abatement. PA. STAT. ANN. tit. 72, § 4711-302 (Supp. 1978-79). It was legally permissible, then, for the Pittsburgh ordinance to exclude upper income areas from eligibility for tax exemption.

enthusiasm in joining the program. Their reluctance to do so can easily be understood in light of the previous discussion concerning their strong dependency on the property tax as their major source of revenue.

The Pittsburgh experience also suggests that a tax abatement program should involve landlords and developers as well as individual homeowners. Since only a small proportion of dwelling units in depressed areas across the country are owned by occupants,⁵⁴ a tax abatement program restricted to the homeowners, such as the one in Pittsburgh, will fail to affect the bulk of inner city housing.

Another suggested policy measure is to publicize the availability of the program. Presently, the program as structured and operationalized is self-defeating. As explained above, the process starts when homeowners apply for building permits. In order for the program to induce investment, it should be brought to public attention before investors have decided to commit their funds to property improvement.⁵⁵ Under the present system, it is not surprising that during the five years of its existence, Pittsburgh's property tax abatement program only included 41 cases.

This analysis suggests inhibition of an indiscriminant use of property tax abatement programs. Before the implementation of such a program, municipalities should carefully evaluate the rates of return in various communities of the metropolitan area and the opportunity cost (market rate of interest) to determine if any tax relief will affect the investment decision positively, and if so, determine the necessary abatement percentage.

VI. Conclusion

Dilapidated housing in the large central cities in this country remains largely unresolved and the situation is steadily worsening. There is an almost unimpeded growth of urban slum areas. An abundant and varied literature points unanimously to the property tax as a major contributor to this deterioration. A major conclusion of this literature is that the property tax has an adverse impact on

54. D. NETZER, *ECONOMICS AND URBAN PROBLEMS: DIAGNOSES AND PRESCRIPTIONS* 133-34 (1970).

55. Informal interviews with the community planners, conducted by Dr. Gupta during his employment with the City Planning Department of Pittsburgh, revealed that the number of inquiries would increase significantly if the abatement program was explained at community meetings (June 1977).

the investment decision regarding housing renovation. That is, investors are discouraged from improving their housing because such renovation is likely to bring about an increase in tax liability.

The implementation of several direct and indirect policies which have attempted to alleviate this adverse impact has not been successful. An indirect policy suggested for Pittsburgh was a property tax abatement program. Under this program, households undertaking renovation are exempted from paying additional property tax due to improvement for a three year period. To analyze the impact of this tax abatement program on home improvement, an investment decision model has been developed which identifies the conditions under which tax abatement will serve to motivate investment in the improvement of dwelling units in metropolitan areas.

The model suggests that the program will not be particularly effective in inducing investment in the most depressed areas of the city. That is, the tax abatement is not likely to be enough to make up the difference where the rate of return on investment is substantially lower than the market rate of interest. This is typically the situation in an impoverished area of the city where investment in housing improvement is undertaken at great financial risk. Also, the tax abatement is not a great enough incentive to motivate investors to give up more lucrative investment opportunities in more stable and thriving neighborhoods.

The model also suggests that if the difference between the rate of investment return and the market rate of interest is higher than the proportion abated, the program will amount to a windfall for investors. This situation occurs when wealthy neighborhoods are eligible for a tax abatement program. Because the home improvement was already a profitable investment in the absence of a tax abatement, any further financial incentive to invest is unnecessary and is a wasteful use of municipal revenue.

The type of neighborhood which might benefit from a tax abatement program is the "gray area" of the city. In these aging, deteriorating areas, it is unlikely that the rate of investment return is quite close to the market rate of interest. Under these circumstances, the abated tax on home improvement could make the investment a profitable venture. Where the tax rate on improvement is the main obstacle to renovation, the abatement program will transform an unprofitable investment opportunity into a profitable one.

In light of these general conclusions, an analysis of the Pittsburgh program yields several observations. First, Pittsburgh's tax abate-

ment program has largely failed to induce investment in housing renovation in the poorest sections of the city. Second, the Program failed to generate interest in renovation in the city generally as the statistical analysis fails to detect any shift in renovation activities. Third, the amount of tax abatement was extremely low, usually less than one percent of the investment. Fourth, only the city of Pittsburgh is committed to this program. The County and other taxing bodies have shown little interest in giving tax rebates for home improvement, thereby making the total amount abated rather small.

Based upon the decision model developed in this paper and the Pittsburgh experience with tax abatement, several general recommendations can be put forth. A tax abatement program alone should not be expected to have any positive impact on the center city or in other depressed neighborhoods. The Program should also exclude wealthy neighborhoods from the program to avoid investment windfalls. In order to impact the "gray areas" in any significant manner, the size of the rebate should be enlarged, possibly both by increasing the years of exemption and by encouraging other taxing bodies to adopt the program. In order to increase the rate of response to the tax abatement program, landlords and developers, who have sizeable land holdings throughout the metropolitan area, should also be eligible for the Program.

Finally, before any city or municipality decides to embark upon a tax abatement program, it should be fully realized that the conditions which are necessary to make the program successful are extremely stringent. There is not much evidence to demonstrate that this form of inducement will entice large numbers of investors to invest in home improvement. Further, given the declining property tax revenue in many central cities, especially throughout the northeastern part of the United States, the prudence of adopting a tax abatement program should be strictly scrutinized.*

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