A CRITIQUE OF FEDERAL INCOME TAX INCENTIVES IN THE DEVELOPMENT AND OPERATION OF SUBSIDIZED RENTAL HOUSING

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ABSTRACT

A CRITIQUE OF FEDERAL INCOME TAX INCENTIVES IN THE DEVELOPMENT AND OPERATION OF FEDERALLY SUBSIDIZED RENTAL HOUSING

James Edward Wallace
Submitted to the Department of Urban Studies and Planning in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

This thesis describes and criticizes the role of tax shelter in the workings of the subsidized rental housing program created in Section 236 of the National Housing Act as established in the Housing and Urban Development Act of 1968. The setting of this project subsidy approach is described in the context of the evolution of housing policy in the U.S. and of the relevant tax policies, particularly the version of tax law established by the Tax Reform Act of 1969.

Tax shelter syndication as a primary form of organization for private developers and investors drawn by the economic incentives to Section 236 housing is described using base cases for new construction and rehabilitation. On the basis of the assumptions used in this work, the developer of a Section 236 project can raise in capital contributions from investors the equivalent of 20 to 30 percent of the mortgage loan amount for a rehabilitation project and from 10 to 15 percent for a new project. Little of the amount thus raised in exchange for future tax savings is required to support direct costs of a typical project, because these are already covered by a Federally insured mortgage loan. A sensitivity analysis of the base case approach shows that the conclusions are unchanged by conceivable changes in key project parameters. Investment risks involved on the part of the investors in typical syndications of Section 236 projects are found to be severe, for example, in the event of premature sale--precisely because of the dependence upon tax shelter for investment return. A computer program used as an aid in the numerous calculations of investment analysis and of government costs is summarized in an appendix.

The costs to government in the form of foregone revenues are found to be large. In view of the magnitude of these government costs, alternative means for providing the same economic incentives, if necessary, through various forms of direct payment are introduced and evaluated on the same terms as the evaluations of the present program. The tax incentive approach is found to be more costly to government than any of a number of alternatives for providing the same economic incentives by direct payment.

It is recommended that in the interests of simplifying an already complex "system" for housing production, of centralizing administrative responsibility and of reducing net costs to government, a more direct system of fees for development and other publicly intended actions be established in lieu of favorable tax treatment.

Thesis Supervisor: Bernard F. Frieden
Title: Professor of Urban Studies and Planning

BIOGRAPHICAL NOTE

James Edward Wallace--

Studied engineering at North Carolina State University from September, 1953 to May, 1957, graduating with High Honors and at Cornell University from September, 1957 to June 1959, graduating with a master's degree in Aeronautical Engineering.

Enjoyed a mini-career in aerospace research with the following elements: summer work at the NASA Langley Research Center, Virginia (1957) and at ARO, Inc., Arnold Engineering Development Center, Tennessee (1958 and 1959); a U.S. Air Force tour as project officer for development of rocket engines for the Agena satellite vehicle (October, 1959 to November, 1962); aerospace research at Cornell Aeronautical Laboratory, Inc., Buffalo, New York (December, 1962 to August, 1968); publication of six technical reports and delivery (followed by publication) of three papers at national meetings on boundary layer characteristics in hypersonic flow.

Gained some exposure to concerns of racial and economic justice through involvement in inter-racial, center city churches in Los Angeles and Buffalo, participation in numerous community organizations in Buffalo, work in an Erie County organization called Housing Opportunities Made Equal, a term on the Buffalo Human Relations Commission, and a term as director for Westminster Community House, Buffalo.

Worked on housing policy and housing finance issues in between periods of study at M.I.T. (started in September, 1968) in conjunction with the King-Bison Co. (now HABCO) of Boston, with North American Development Corp. (Boston), Arthur D. Little, Inc. (Cambridge), and Housing Now (a community housing sponsor in North Adams, Massachusetts).

Prepared papers, "Federal Subsidies in Rental Housing" (Working Paper No. 7, Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University, February 26, 1971, Revised February, 1972) and "Federal Income Tax Incentives in Low- and Moderate-Income Rental Housing" (prepared for the Joint Economic Committee, U. S. Congress, February, 1972, to be published by the Committee).

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I would like to acknowledge the early impetus to this work provided by the collaboration of several graduate students from M.I.T. and Harvard University on a computer program for housing investment analysis. Kent Colton, Charles Field, James Hester, Samuel Shearer and I put together the basic equations, which were then programmed for us by Michael Hester. Each of us then made a copy of the program and began modifying our copies according to our individual interests. In my case this base program provided a convenient start for eventually including all of the features of the Tax Reform Act of 1969 which are salient to real estate investment and for computing both the investment impact and cost to government of alternative tax rules. Howard Smith, of North American Development Corporation in Boston, offered numerous helpful criticisms in the early stages of the program.

Partial support for computing expenses came from the Department of Urban Studies and Planning, the Urban Systems Laboratory, and the Information Processing Center of M.I.T.

Fellowship support which enabled me to undertake this study came from the Cornell Aeronautical Laboratory, Inc. of Buffalo, N. Y. for my first two years at M.I.T. Tuition and stipend assistance was also provided, in my third and fourth years, by a Traineeship for the Spring Term, 1971 and a tuition fellowship for 1971-72 through the National Institutes of Mental Health. I am particularly grateful to Professor D. Quinn Mills, Sloan School of Management at M.I.T., for arranging for stipent support and assistance with research expenses during the summer of 1971 and part of academic year 1971-72; this support came from a grant to Harvard University from the Ford Foundation, Grant 70-462.

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For help with the typing I am indebted to Deborah Scogin for having the temerity to start the draft and, especially, to Ilse Fersing, who completed the draft and final copies.

I can't begin to thank in a few printed words my wife, Julia, for her support in countless forms and her steady confidence that I would someday finish. Our children, Walter and Ginny, gradually came to accept that this thesis research and writing might be "work" too.

CONTENTS

ABSTRACT 2

BIOGRAPHICAL NOTE 3

ACKNOWLEDGMENTS 4

LIST OF TABLES 7

LIST OF ILLUSTRATIONS 10

CHAPTER I: INTRODUCTION 11

CHAPTER II: THE PERSPECTIVE OF NATIONAL HOUSING POLICY 17

A. Roles of Housing 19

B. Policy Rationales 25

C. Policy Options 39

D. The Role of Project Subsidies 65

E. Summary 76

CHAPTER III: FEDERAL TAX POLICY IN HOUSING 79

A. Tax Neutrality 79

B. Income Tax 81

C. Tax Factors in Real Estate 88

D. The Debate on Tax Incentives 111

E. Summary 118

CHAPTER IV: MULTIFAMILY RENTAL HOUSING UNDER SECTION 236 121

A. Mortgage Insurance and Interest Subsidy 121

B. Tax Shelter Syndication 124

C. Policy and Administrative Issues 132

D. Private Response to Tax Incentives 136

E. Summary 143

CHAPTER V: BASE CASES 145

A. Rationale 145

B. Development Costs 146

C. Depreciation Elements 155

D. Feasibility Tests 161

CONTENTS (CONTINUED)

E. Annual Cash Flow and After-Tax Return 165
F. Gains Tax at Sale 170
G. Tax Sinking Fund 180
H. Investment Analysis 183
I. Investment Results 189
J. Sensitivity Results 199
K. Incentive for Developer to Hold Project 212
L. Deferred Payment of Capital Contributions 216
M. Summary 222

CHAPTER VI: INVESTMENT RISK AND ALTERNATIVE TAX INCENTIVES . . . 224
A. Departures from the Base Cases 224
B. Comments on Current Tax Treatment 237
C. Alternative Depreciation Allowances 242
D. Alternative Tax Treatment 246
E. Summary 249

CHAPTER VII: COST TO GOVERNMENT OF TAX INCENTIVES 253
A. Rationale 253
B. Base Case Costs 258
C. Direct Payment of Developer Fee 279
D. Summary 306

CHAPTER VIII: TRANSFER OF OWNERSHIP TO TENANT OR COMMUNITY GROUPS. 308
A. Operating Incentives in the Absence of Tenant Control . . 308
B. Syndication by Subsidiaries of Community Based Sponsors . . 310
C. Rollover 311
D. Alternatives to the Rollover Concept 325

CHAPTER IX: SUMMARY AND CONCLUSIONS 327

APPENDIX: COMPUTER PROGRAM FOR ANALYSIS OF INVESTMENT AND GOVERNMENT COSTS 338

BIBLIOGRAPHY 386

LIST OF TABLES

TABLE		
II-1	Substandard Housing in the United States	20
II-2	Federal Direct Building Programs	52
II-3	Legal History Related to Federal Role in Land Use for Housing	54
V-1A	Illustrative Development Costs, New Construction Base Case	148
V-1B	Illustrative Development Costs, Rehabilitation Base Case.	149
V-2	Development Cost and Depreciation Summary (Project Basis Includes Only Cash Costs)	152
V-3	Cost and Depreciation Summary (Project Basis Includes Developer Fee)	159
V-4	FHA Feasibility Tests	162
V-5	Annual Rent and Expense Elements for Base Case	164
V-6	Base Case Investment Assumptions.	166
V-7A	Depreciation and Amortization Schedules, New Construction	171
V-7B	Depreciation and Amortization Schedules, Rehabilitation	173
V-8A	Annual After-Tax Return, New Construction	175
V-8B	Annual After-Tax Return, Rehabilitation	177
V-9A	Income Tax at Sale, New Construction	181
V-9B	Income Tax at Sale, Rehabilitation	182
V-10A	Discounted Returns and Tax Sinking Fund Accumulation, New Construction	190
V-10B	Discounted Returns and Tax Sinking Fund Accumulation, Rehabilitation	192
V-11A	Base Case Investment Results -- Developer Holds Property	196
V-11B	Base Case Investment Results -- Investors Own Property	197
V-12	Payback Periods on Investment	200
V-13	Sensitivity of Investment Value to Project Parameters	206

LIST OF TABLES (CONTINUED)

TABLE		
VII-1A	Federal Revenue Losses, New Construction	260
VII-1B	Federal Revenue Losses, Rehabilitation	261
VII-2	Comparison of Government Costs and Investor Valuation of Accelerated Depreciation	263
VII-3	Comparison of Government Costs and Investor Evaluation of Sale Price	265
VII-4A	Sensitivity of Government Costs to Discount Rate, New Construction (DDB Depreciation)	270
VII-4B	Sensitivity of Government Costs to Discount Rate, Rehabilitation (5-Yr. Depreciation)	271
VII-5	Total Public Costs -- Discounted Present Value as a Percentage of the Mortgage Amount	276
VII-6A	Government Costs for Direct Payment of Developer -- New Construction	286
VII-6B	Government Costs for Direct Payment of Developer -- Rehabilitation	287
VII-7	Comparison of Current Government Costs and a Direct Payment Scheme	292
VII-8	Comparison of Investment Value and Government Costs under Alternate Depreciation Policies	299
VII-9A	Comparison of Investment Value and Government Costs under Alternate Tax Policies, New Construction	302
VII-9B	Comparison of Investment Value and Government Costs under Alternate Tax Policies, Rehabilitated Housing	303
VIII-1	Illustrative Rollover Calculation with Step-Up in Basis	317
VIII-2	Rollover Options	322
A-1	Input Parameters	342
A-2	Subroutine CSTEQ, Development Costs	345
A-3	Subroutine OPCST, Operating Costs	347
A-4	Subroutine TAXES	348

LIST OF TABLES (CONTINUED)

TABLE

A-5 Subroutine SALE 349

A-6 Subroutine RECAP (Program Variables) 349

A-7 Subroutine IRATE. 350

A-8 Subroutine COSTG 351

A-9 Sample Input for Rehabilitation Case 354

A-10 Sample Output for Rehabilitation Case 355

LIST OF ILLUSTRATIONS

FIGURE		
IV-1	Rehabilitation Tax Incentive for Development	131
IV-2	Rehabilitation Tax Incentive During Operation	133
V-1	Investment Value Dependence on Holding Period, Base Cases	202
V-2	Investment Value Sensitivity to Base Case Assumptions	207
V-3	Investment Value Sensitivity to Discount Rate	211
V-4	Internal Rate of Return for Base Cases	213
V-5	Dependence of Investors' Payments upon Discount Rate	220
VI-1	Dependence of Investment Value on Base Case Assumptions, New Construction	230
VI-2	Dependence of Internal Rate of Return on Base Case Assumptions, New Construction	233
VI-3	Dependence of Investment Value on Base Case Assumptions, Rehabilitation	235
VI-4	Dependence of Internal Rate of Return on Base Case Assumptions, Rehabilitation	238
VI-5	Effects of Tax Depreciation Changes on Investment Value, New Construction	243
VI-6	Effects of Tax Depreciation Changes on Investment Value, Rehabilitation	245
VI-7	Effects of Minimum Tax and Capital Gains Tax on Investment Value, New Construction	248
VI-8	Effects of Minimum Tax and Capital Gains Tax on Investment Value, Rehabilitation	250
A-1	Sequence of Operations for Program TAXCST	340

CHAPTER I: INTRODUCTION

This work undertakes a critique of the particular cross-section of the U. S. housing system found in Federally subsidized, privately owned rental housing whose development and operation is largely dependent upon Federal tax treatment of this type of property. The primary focus is upon the workings of the interest subsidy program for rental housing, referred to as Section 236 (12 USC 1715Z-1), created by the Housing and Urban Development Act of 1968 (82 Stat. 476). Special attention will be paid to the tax shelter which Federal income tax laws create through the depreciation allowances and capital gains treatment of Section 236 rental housing, especially in the version of the tax laws applicable to real estate established by the Tax Reform Act of 1969.

My interest in Section 236 housing and tax shelter derives from a basic concern with lower-income families whose housing options are limited basically by inadequate incomes, given competing needs. While the Section 236 program is directed primarily to moderate-income families, it is of interest in the question of the housing of lower-income families because a significant portion of a Section 236 rental housing project (up to 40 percent as of 1970) can be assigned to families obtaining additional rental assistance through either the leasing programs of local public housing authorities or through the Federal Rent Supplement program. Furthermore, one of the implicit justifications for a program not limited to low-income families is that the increase of supply in housing at price and quality levels just above the low-income housing market will enable

more direct filtering as the units previously occupied by those families entering 236 projects are vacated.

Once one begins an inquiry into the development of a 236 project, however, the importance of the tax elements becomes clear. The favorable depreciation allowances (especially for rehabilitation expenditures) for Federal income tax purposes are found to provide a means for a developer to obtain a substantial "fee" near the start of development because the tax losses which the project will generate have considerable value to high-tax-bracket investors. Several questions then arise:

> How large is the amount of funds which the tax allowances enable a developer to obtain? Is it larger than necessary?
>
> Are complexities or additional actors introduced into the housing development process as a result of the tax allowances?
>
> What sort of incentives are created both in development and during operation of the project as a result of the tax allowances?
>
> How costly to government is the tax allowance approach?
>
> Could the same objective be attained at least as well, at lower public costs, and possibly under better policy control by a more direct system of financial incentives?
>
> How well do the supposed beneficiaries, the tenants, fare in this system with regard to housing services and options for control over their housing environment?

This work was undertaken in an effort to examine these questions.

While national housing policy is a conglomerate of goals and pro-

grams, a brief examination of national housing policy is in order as background for this particular study and is included in Chapter II. An attempt is made to set in perspective the project subsidy approach of which the Section 236 program is an example.

Congressional intent with respect to the tax treatment of rental residences has become more explicit as a result of the Tax Reform Act of 1969 in that, while restrictions were being placed on the tax treatment of all other types of structures, the tax treatment of rental housing under limited-dividend programs was preserved and a new, five-year depreciation provision was created for certain rehabilitation expenditures on rental housing. Chapter III provides some background on the history of the Federal income tax, of depreciation treatment and of the role of tax incentives as well as describing the portions of the Tax Reform Act of 1969 which are relevant to low- and moderate-income housing.

The way in which the intent of the tax incentive legislation, viz., capture of private capital for housing production, actually operates turns out to be that of "syndication" or the bringing together of those with development and building skills with those high-tax-bracket investors who can use the tax savings offered by investment in housing development which enjoys favorable tax treatment. Chapter IV describes in a general way the workings of the Section 236 rental housing program for mortgage insurance and interest subsidy, and it also describes the way in which the program depends upon tax shelter.

The interaction of the favorable tax treatment, the favorable mortgage provisions, and the virtually assured rental market resulting from the rental subsidies is made explicit in the base case calculations of

Chapter V for typical new construction and rehabilitation projects. The investment value to the developer of these projects as well as to outside investors is explored, including an evaluation of the sensitivity of the results to the particular values chosen for project parameters. The computations were facilitated by a computer program developed as part of this investigation. The program is described in the Appendix. With the same base cases Chapter VI explores the investment consequences of some of the elements of risk involved.

While Federal housing programs involving direct expenditures as part of the annual Federal budget are under continuing scrutiny, only recently have the public costs in revenues foregone through tax incentives begun to receive serious attention at Congressional level. Major emphasis is given in this study to a careful consideration of the government costs involved in 236 projects, especially Federal costs in the form of foregone revenues. After developing a framework for comparison, government costs are examined in Chapter VII for the base cases (new construction and rehabilitation). The costliness to the Federal government of the current system leads to considerations of some options for alternative tax treatment under which incentives for development and operation are at the least preserved--and, in some cases, improved--at lower costs to government. An even more radical possibility, outright purchase of control by the government from the developer by replacing the investment value of the rental project with direct Federal payments, is also explored and the government cost compared with the cost of the present tax incentive mechanism.

In Chapter VIII, ways are evaluated by which tenants could gain more

direct control over their housing and housing services. The so-called "rollover" incentive included in the 1969 Tax Reform Act to encourage transfer of ownership of 236 rental housing projects to tenants is found to be essentially ineffective for that purpose. Included in the discussion of alternatives are: rollover changes within the tax system, direct incentives for sale to tenants, and syndication of the project by a tenant organization of the original project. Chapter IX is a summary of major observations and policy recommendations.

As a guide to the reader, some general observations about this work may be helpful. Chapter II on housing policy and Chapter III on tax policy are quite wide-ranging discussions of the background issues, context and the underlying reasons for the attention given here to the Section 236 program as a very specific example of what are termed project subsidies. The reader who already appreciates the background and complexity of Federal policy and programs in housing and income taxation may wish only to skim Chapters II and III, noting only the comments on the place of project subsidies in the scheme of housing policy in Chapter II and the summary of the relevant portions of the Tax Reform Act of 1969 in Chapter III. Neither of these chapters are represented as new research; they are essentially an organization of the background materials.

Those wishing to proceed to the heart of the work should turn to Chapter IV, where the description of the workings of the 236 rental housing program begins. Chapter V can be thought of as a description of a typical 236 project from the point of view of the developer; Chapter VI, the investor; Chapter VII, the Federal government; and Chapter VIII, the tenants.

Others have focused on the matter of tax shelter and of 236 housing before; my primary focus has been upon government costs and alternatives to the present tax incentives in the 236 program. In particular, I have (1) tested the sensitivity of the base case approach (often used for analyzing such projects) to variations in the relative make-up of project cost elements, and (2) devised analytical methods, programmed them and calculated the net revenue costs to the Federal government of typical 236 projects compared with net revenue costs of a large variety of means for substituting direct government payments for some or all of the tax benefits now enjoyed by this type of project.

CHAPTER II: THE PERSPECTIVE OF NATIONAL HOUSING POLICY

> The Congress hereby declares that the general welfare and security of the Nation and the health and living standards of its people require housing production and related community development sufficient to remedy the serious housing shortage, the elimination of substandard and other inadequate housing through the clearance of slums and blighted areas, and the realization as soon as possible of a decent home and a suitable living environment for every American family, thus contributing to the development and redevelopment of communities and to the advancement of the growth, wealth, and security of the Nation.
>
> --Housing Act of 1949, 42 U.S.C. 1441

> The Congress finds that this goal [of the Housing Act of 1949] has not been fully realized for many of the Nation's lower income families; that this is a matter of grave national concern; and that there exist in the public and private sectors of the economy the resources and capabilities necessary to the full realization of this goal.
>
> --Declaration of Policy, Housing and Urban Development Act of 1968, 12 U.S.C.1701t

While the primary focus of this work is on subsidized rental housing projects, some perspective in the analysis can be gained from a review of the nature of housing policy in the United States. The Congressional declarations of policy quoted above suggest the nearly global nature of potential housing policies and programs and also suggest the tendency to equate housing programs with production of houses. However, it would be folly to claim any one housing policy or program as the single "answer" to "the" housing problem, especially given the complex

nature of housing itself as an intersection of social, economic and political forces and interests. On the other hand, it is precisely this complexity which has made it difficult not to have a national policy on housing, at least in recent decades.

In this chapter the motivations for public intervention are reviewed in the context of the multiple roles which housing serves. The questions are, "What functions does housing serve?" and "Why should government intervene in housing production and the delivery of housing services?" and "What choices are available for public intervention?" Given the wide array of motivations discussed here a comparably wide range of options for housing policy is possible.

This chapter ends with a review of the role in U. S. housing policy of project subsidies, or subsidies in housing that are tied to particular buildings. As mentioned above, there is a strong tradition of viewing the housing problem as one of housing production. An analysis of a particular project subsidy program, the Section 236 rental program, must thus be viewed in the context of project subsidies generally; project subsidies, in turn, must be viewed against the more general motivations and options in housing policy.

A. ROLES OF HOUSING

Housing seems to have attracted policy attention in the United States because of its fundamental role in providing shelter; because of the "bundle" of rights, opportunities and responsibilities attaching to one's residential location and form of tenure; and because of the relative importance of the economic dimension of housing in household expenditures and in the national economy. While not always easy to separate, I want to look both at the importance of housing to the individual and to the society.

1. Shelter

Perhaps the fundamental policy aspect of housing is that it provides shelter. Shelter concerns have been viewed in terms of the physical adequacy of the housing unit, in terms of the affordability of adequate housing within a household's budget, and in terms of the relative quality of housing and housing services among class and income levels.

Absolute measure of the physical quality of housing has been offered by the Census Bureau's categories of sound, deteriorating and dilapidated structure and the presence of certain minimum plumbing facilities. One convention for defining substandard housing combines Census categories of all dilapidated units (not safe and adequate shelter and endangers health, safety or well-being, requiring major structural repairs or outright replacement) plus sound or deteriorating units lacking plumbing facilities (hot and cold running water; private, indoor bath and toilet facilities). As a result of serious problems of consistency in judgment by the Census enumerators on the matter of physical quality and a shift

to the use of mail questionnaires for the Census enumeration, only special surveys have developed this data since the 1960 Census. (U. S Bureau of Census, 1967) The high correlation between dilapidation and inadequate plumbing, however, allows the use of plumbing inadequacy as a surrogate for substandardness. Census data summarized for the House Subcommittee on Housing Panels by Schechter and Schlefer (1971) showed that in absolute, physical quality the housing stock has shown steady improvement, as indicated in Table II-1.

TABLE II-1: SUBSTANDARD HOUSING IN THE UNITED STATES

Year	Total Units	Number Lacking Plumbing	Percentage Lacking Plumbing	Percentage Lacking Plumbing Outside SMSA's*	Percentage Lacking Plumbing Inside SMSA's	Percentage Units Sub-standard
1950	46.1 mil.	16.3 mil.	35.4%	54.2%	20.6%	36.9%
1960	58.3 "	9.8 "	16.8	29.5	9.1	18.2
1968	65.6 "	5.5 "	8.4	16.1	3.9	9.4

(U. S. Census Bureau data cited in Schechter and Schlefer, 1971, pp. 19-20)

*SMSA refers to Standard Metropolitan Statistical Area

Substandard housing is not, however, uniformly distributed across the population. The incidence of substandard housing is three times as great for households outside SMSA's as for those inside SMSA's and is at least twice as great for non-white households as for white households at all income levels. Those living in substandard housing are more likely to be non-elderly renters or elderly owner-occupants. (See Census

data summarized in technical studies for the President's Committee on Urban Housing, 1967, p. 11.) Without diminishing the importance of the rural housing, the present work, being a study of rental housing, is necessarily urban in focus. Relying upon the special Survey on Economic Opportunity conducted in 1966 and 1967 by the Census Bureau, Schultze et al. (1971) have observed that nearly one-fourth of the substandard units are occupied by single, non-elderly persons (living chiefly in rooming houses without separate plumbing).

The magnitude of the problem of physical adequacy of housing is, of course, greater if additional components of housing are taken into account, such as the degree of overcrowding or the adequacy of the heating equipment. Of the occupied "standard" units in 1960, nine percent had more than one person per room. Over half of all rural houses and almost one-fourth of the units in metropolitan areas lacked central heat in 1960. (Census data cited in Cochran and Rucker, 1971, p. 526)

Since the quality of housing and housing services is related to price, the problem of substandard housing is particularly a problem of low-income households, who may have to allocate high proportions of income in order to obtain even substandard housing. Projections made for the President's Committee on Urban Housing (1968, p. 7) indicated that as of 1968 about 7.8 million U. S. families were unable to afford to pay the market price for standard housing that would cost no more than 20 percent of their total income. In 1960 almost one-fifth of all households renting standard housing were spending 35 percent or more of income for housing.[1] (Census data cited in Cochran and Rucker, 1971, p. 526)

---

[1]The rent-income ratio as a normative standard for housing expenditures has been challenged by Aaron (1972), who observes that while the ratio of housing expenditures to income varies widely, housing expenditures as a fraction [cont.]

While the issue of adequate housing has in the past been usually cast in absolute, Census Bureau terms, the issue in the U. S. is increasingly being viewed in relative terms and as an issue of distribution in the society. Housing has become a symbol as well as a measure of relative deprivation by the poor and minority groups despite the fact that in many cases the physical condition of even substandard housing in the country would be considered quite adequate in most parts of the world. (Glazer, 1967) As Professor Thurow of M.I.T. recently put it, "Our problem is not physical sufficiency but relative sufficiency. . . . In housing the problem is not one of providing adequate protection against the elements, but distributing the different qualities of housing across the population." (Thurow, 1971, p. 439) It must be remembered, however, that even in absolute terms the shelter problem is acute for segments of the U. S. population, particularly for Negro families in the rural South, for migratory farm workers, and for Indians living on reservations. (Cochran and Rucker, 1971, pp. 527-528)

While the matter of what constitutes adequate and appropriate shelter is obviously not settled, I cannot help leaning to the almost intuitive position expressed by Prof. John Myer on the role of housing in the lives of the poor:

> They have so little that what they do have, such as housing, can mean much to them--for good or bad. Home is the setting of much of creative life; it is where a person fails or succeeds as man-husband-father, woman-wife-mother,

---

[cont.] of total expenditures do not. The latter ratio is observed to be 36.5 percent for those with less than $1,000 annual income, while the ratio is 26.9 percent for those with $15,000 or over. Even that difference is reduced when family size and age are controlled.

> provider-receiver, child-sibling, adolescent. It is where we feel so sheltered that we can sleep. It is relief from the exposure of the outside world. It is where we cook and feed, eat and partake, make love. It is individual turf, territory. The physical shell that houses these central life activities and feelings can support them, allow them to succeed, be appropriate. Or it can frustrate them, induce failure--and that is very much another thing. (Myer, 1970, p. 135)

2. The Housing Bundle

Because housing fixes a person's place of residence, a bundle of services and opportunities (or lack of them) is associated with his housing: the socio-economic character of his neighbors, environmental amenities, city services (streets, water and sewer service, garbage collection, for example), public schools, access to employment, and so on. Recent debate over the appropriate Federal role in housing development in suburban municipalities has focused on the question of the rights of lower income persons and those in minority groups (primarily black and Spanish-speaking) to have housing and the attendant opportunities available versus the desire of these suburbs to minimize their tax burden, not to mention protecting their racial and class barriers. (Paul Davidoff, et al., 1970; Carnegie, 1971)

Clearly much of this bundle associated with housing could be improved without directly affecting the physical structures or the housing services per se available to households in a given neighborhood. Because these non-housing services and opportunities are associated with housing location, though, the degree to which they are lacking becomes part of a housing problem.

3. Housing in the National Economy

At the risk of seeming cynical, it would appear that a very important

fact about housing which has generated continuing national concern is its primary role in the economy. Indeed the earliest housing legislation in the U. S. affecting housing on any scale dealt with the problems of homeowners, or at least mortgagors, in the Depression, when Federal intervention was deemed necessary to avoid a complete collapse of the mortgage and credit system in the country. (See Haar, 1960; Meyerson, et al., 1962) In a recent year mortgage debt on one-to-four-family structures totalled 220 billion dollars. (U. S. Senate, 1966) Furthermore net mortgage investment recently has been more than five times the net investment in corporations through bonds and stock combined. (Maisel, 1965) The economic importance of the housing construction industry was outlined for a Harvard Business School group in a statement by HUD Undersecretary Richard C. Van Dusen (1970):

> Construction of conventional new housing units this year will account for 21 billion dollars of business activity, a little less than 2-1/4 percent of our gross national product. Adding in rehabilitations, repairs and alterations, mobile home production and other miscellaneous activities gives us a total residential construction industry of about 30 billion dollars in size, or about three percent of GNP. That's almost as large as our automobile industry.

While the primary interest of the present work is that of the social welfare aspects of housing, an appreciation of the economic role of housing helps to explain the preoccupation with production of housing units in housing strategies, even for the poor.

B. POLICY RATIONALES

In any attempt to get at the issues underlying the question of public responsibility in the housing of low-income persons, some effort must be made to see in what ways the private welfare of the low-income consumer of substandard housing is related to the public welfare involved in changing his housing consumption. Several levels of public concern seem to have developed:

1. Health and Social Threat -- Housing in poor physical condition and without elemental plumbing and sanitation facilities (running water and indoor, private toilets) is assumed to cause higher rates of morbidity (disease and illness), hence create a menace to the health of the general public and an increase in other public costs.

   Persons living in dwellings of quality well below the median in the population and located in "undesirable" neighborhoods are assumed by those more privileged to be more likely to be "unfit" and "unproductive" citizens because of the associated social pathologies of low self-esteem, distorted family relationships and resentment and hostility directed against society as expressed in crime, delinquency, and psychological pathologies in the form of drug addiction, alcoholism, diminished initiative and motivation, and so on.

2. Ugliness -- The appearance of slums is deemed unpleasant by those who can afford better and who also are better able to pay the public costs of changing this undesirable appearance,

3. Homeownership -- Ownership and the attendant responsibilities and control are viewed as encouraging better dwelling maintenance, greater family stability, and more community participation and support.
4. Market imperfections -- Private actions of housing consumers, suppliers, and lenders may lead to suboptimal allocations of resources to housing and may also lead to undesirable functioning of the market for housing and housing services and require collective solution through government action.
5. Housing as a Merit Good -- Appearance aside, sufficient numbers of citizens may also be dissatisfied, or suffer disutility, from their awareness that some of their fellow citizens are living at a low standard of living, of which housing consumption is an important part. Put another way, poor housing conditions become "the shame of the Nation" and justify public expenditures for remedies on the basis of national pride. Still others have felt that a whole range of underconsumption categories (as in food, clothing, medical services, education) jointly produce the undesirable features cited in (1) and (2), and that, as a result, the more fundamental public policy must be one of providing these goods and services directly at public expense.
6. Redistribution -- Others regard the existence of underhoused persons as an example of inequitable distribution

of resources and feel that the fundamental solution is one of general transfers of income to enable everyone to have the ability to choose the socially desired level of various goods and services.

1. Health and Social Threat of Substandard Housing

The first two arguments stated above apparently continue to have legislative appeal, even though the underlying assumptions as to causal connection between improved housing and health and reduced social pathology have been borne out in research only for the most extreme circumstances. As an isolated factor, improvement in housing conditions alone is apparently not as therapeutic as the reformers have hoped.

In his already classic monograph, Slums and Social Insecurity, Alvin Schorr (1963) attempted to make the case for government aid in the housing of the poor because of the importance of housing and neighborhood to a person's health, well-being and self-perception. Schorr realized that his argument was largely exhortation with little firm empirical evidence to support any causal relationships between good housing and healthy, productive citizens. Rothenberg (1970, p. 368) has summarized the social evils slums have been alleged to generate in the form of physical, psychological, and health hazards to inhabitants and passers-by: (1) slum dwellings are likely to be fire traps, significantly increasing the probability of general conflagration, (2) given overcrowding, filth, and inadequate sanitary facilities, slum areas are likely to be a health menace, increasing the frequency and severity of illness both to inhabitants and outsiders (through contagion), (3) slums breed crime, and (4) slums create personality and social adjustment difficulties. As Rothen-

berg points out these relationships may seem intuitive but are most difficult to attempt to measure.

No one argues, of course, that public housing is necessarily the most appropriate housing for the poor, but the physical conditions are, presumably, an improvement for those moving into public housing.

The study by Wilner et al. (1962), comparing one thousand families of similar circumstances--some of whom moved to public housing and some of whom remained in slum dwellings--found some reduced morbidity among those in public housing for those under 35 years of age and some positive trends in social psychological adjustment but little else. Another public housing study by Hollingshead and Rogler (1963) of forty families in Puerto Rico found that attitudes were actually more positive in the slum dwellers, apparently reflecting a preference for nuisances of nature (though one could argue how natural) rather than the nuisance of the bureaucratic rules of the public housing authority.

Aaron (1972) concludes that no study has shown both that (1) the beneficial effects of housing are due to housing rather than adequate income, and (2) the correlation between housing quality or tenure (homeownership) and socially or personally desirable characteristics are not joint results of other psychological, sociological or economic characteristics. This is not to say, of course, that no causal relations exist.

2. Ugliness

The slum clearance aspects of the early public housing program and of the urban renewal program seem to have had a basis partly in concern with the ugly or embarrassing appearance of slum dwellings rather than

primarily for the slum dwellers themselves. Slum clearance as a housing policy has fallen from favor on the basis of experience in U. S. cities, which has shown that demolition of slum dwellings has served primarily to reduce the housing supply and to displace low-income families to adjacent housing. (Gans, 1965) The current locus of concern with housing appearance would seem to lie in the conflict between private property rights and the use of the police power (so-called) of the state to enforce standards by the use of building and housing codes rather than in slum clearance or subsidy mechanisms to remedy the problem.

3. Homeownership

The ideal of homeownership has been advanced both because a dweller may prefer to own his residence and because of alleged public benefits from a home-owning citizenry. The study by John Dean (1945) on homeownership summarized the U. S. tradition that homeownership is somehow in itself a good thing: it offers greater security (though mortgage foreclosure greatly resembles eviction), it provides a means of forced savings in a valuable asset as the mortgage is paid, credit status is improved (if you keep paying the mortgage), it offers greater control or autonomy (freedom from landlords).

Much of the discussion on homeownership has assumed a single family dwelling. In the context of this work, however, the relevant forms of ownership of an apartment unit are the cooperative, in which an entire building or project is jointly owned by the cooperators, and the condominium, in which an individual unit is owned outright and the common areas are jointly owned (Liblit, 1964).

The primary advantages claimed for cooperative and condominium

forms of ownership have both economic and social dimensions.[1] In both cases the potential benefits to the individuals seem clearer than the public benefits derived. There are diffuse aspects of several of the public policy objectives discussed--the broad distributional area, the merit good aspects of the more publicly preferred form of tenure, and the positive neighborhood effects being made possible through government encouragement of homeownership. The private economic advantages could include: reduced rents through avoiding the payment of profits to an absentee owner, increasing after-tax income through the deductions allowable for Federal income tax purposes of the owner's share of local taxes and interest on mortgage loan (although this advantage decreases as taxable income decreases), building up equity in the property, minimizing losses from vacancies and collection difficulties often found in rental housing, keeping maintenance costs low because of an increased sense of responsibility on the part of the owners.[2]

Social benefits could accrue both to the owner-occupants and to the society: (1) the occupants enjoy greater control over their own housing and immediate environment than would be possible renting, (2) the cooperative spirit may spill over into other aspects of urban living (cooperative food supplies, child care, recreation programs, for example), (3) pride of ownership could lead to a stable, more attractive community,

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[1] See the discussion on cooperative housing in the summary report of the commission chaired by former Senator Paul H. Douglas (National Commission on Urban Problems, 1968, Part II, Ch. 4).

[2] For whatever the reasons, Sternlieb (1966 and 1970) has found correlations between good physical conditions of property and the presence of owner-occupants.

enhancing its livability and preserving land values, (4) vandalism, crime and delinquency could be reduced, and (5) an environment more favorable to racial and religious integration may be achieved. The primary disadvantages in these forms of ownership of apartment units lie in the organization required and the risks taken. The degree of organization required to establish them in the first place and to assure a satisfactory flow of housing services compared with the rental situation may be greater than low-income families with more immediate problems have the time or resources to provide. Further, since some cash payments are necessary at the outset and claim to the value of the property builds as the mortgage is repaid, the cooperator or condominium owner risks some expense or loss of his share in the value of the property if others abuse the property, or, in the case of a cooperative, default on their share of the mortgage payment.

At any rate, the promotion of homeownership has been a policy matter in the U. S. because of the public benefits, however diffuse, and the increased welfare which supposedly would be derived from a citizenry of homeowners. Most of the discussion has taken place around the idea of ownership of single family units. Dealing mainly with this area, Christa Carnegie (1970) has traced some of the arguments for and against homeownership programs for the poor which have been advanced in the Congressional debates and the political viscissitudes to which the homeownership ideal has been subjected in recent legislative proposals.[1]

In all of the above dimensions of policy rationale for housing there are elements of what the economists call neighborhood externalities.

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[1]See also the MIT thesis written by Jo Ann Newmann (1968) for her MCP degree.

That is, the nature of housing in cities is that the enjoyment of one's own housing is partly influenced by the way in which one's neighbors are housed and by the general character of the neighborhood that results. This has financial implications in that the purchase or sale of housing (either outright or of housing location and services through rental) obtains not only the value of a particular dwelling but of enjoyment (or suffering) of the whole neighborhood, as well. Housing is simply one of those areas in which an individual's consumption makes a difference to those around him.

There are two fundamental sources of these externalities: (1) true economic externalities which occur when individual rationality leads to collective irrationality, and (2) externalities which occur because some persons are economically unable, within the limits of their incomes and reasonable allocations thereof, to maintain the level of housing quality which their neighbors would desire.

The "prisoner's dilemma" is often cited as an example of true economic externality. Two adjacent property owners may find that if both owners made improvements to their property, both would maximize their return on investment. However, if either waits for the other to improve, the laggard will reap some windfall benefits in the form of slightly increased return without any additional investment. Thus without collaboration between them the individually rational action is to defer improvement and neither owner obtains the maximum possible return.[1] Matters are not necessarily so simple. Aaron (1972) observes that the "prisoner's dilemma" argument about externalities doesn't explain neigh-

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[1] A more elaborate example is described by Davis and Whinston (1965), who also include a brief description of the origins of the example in game theory, for which also see Luce and Raiffa (1957).

borhoods which are not declining or those which are improving. But where lack of individual action not only inhibits economic return but also constitutes a threat of some sort to public welfare, coercive solutions are called for and are the reasons for the exercise of zoning and housing code powers.

When these externalities have their origins in the income levels of the residents, public action becomes necessary if the desired level of housing quality is to be achieved. The merit good and redistribution arguments below can be thought of as involving, in part, the overcoming of the externalities of underconsumption of housing. In passing it seems worth noting that some of the apparent confusion in the issues of "blight," adequate housing, and controls arises from a lack of distinction between economic externalities and inadequate incomes.

Code enforcement programs, for example, have sometimes attempted to overcome the undesirable externalities of poor housing by coercive solutions without attention to the level of income of the residents involved. In the case of rental housing, if the owner complies, the results then are either reductions in the owner's return on the property or rent increases to cover increased investment. His other alternative is non-compliance. Unless the owner was obtaining windfall profits and can absorb a reduction in return, the low-income renter chooses between moving to quarters he can afford or higher rents, unless the owner refuses to comply. None of these options would seem to be improvements from the perspective of the low-income tenant.

4. Suboptimalities in the Housing Market

Except for the merit good and redistribution arguments to be dis-

cussed below, much of the underlying bases for public policy in housing could be said to involve housing market suboptimalities of one sort or another, including the neighborhood effects mentioned above. Besides the categories already discussed, the housing market may be inefficient because of information gaps, because of lags between changes in effective demand and supply response, because of "lumpiness" and location problems in the interrelations between housing submarkets or in the working of turnover in supplying housing for lower income persons, because of various conflicts between public interests and private property rights (as in issues involving a public need for land where market purchase could lead to "hold out" problems--an exploitation of neighborhood externalities), and so on. (See Aaron, 1972, or Grigsby, 1963)

Racial discrimination is an obvious injustice and impediment for some in the housing market. (McEntire, 1960) Housing is also intimately related to the urban land market, which is also subject to suboptimalities, such as the urban "land price ratchet" phenomenon described by Aaron (1972): a suspension in construction for whatever reason (perhaps a credit shortage) allows the price of land to jump from raw land prices to improved land prices, owing to demand pressures and continuing infrastructure investment by government. In the present context the point is that there are numerous reasons for direct intervention in the housing market generally and in particular for the benefit of low- and moderate-income persons because of the many inefficiencies and impediments in the market.

5. Housing as a Merit Good

The notion of merit wants is that there are certain forms of private consumption which serve a public purpose but which must be imposed by public policy because, within his available income, the sovereign consumer's choices would result in underconsumption of that particular good or service. (Musgrave, 1959, Ch. 1) The "merit good" in the case of housing would be that additional quantity of housing consumption for which the public is collectively willing to pay in order that a publicly desired level of housing consumption be reached by all citizens. The elements of a theory of merit wants might thus be outlined as follows:

1. A specific level of consumption of a private good is publicly desired.
2. Some consumers, while spending an acceptable portion of their income for this private good ("acceptable" also requires public determination), fail to achieve the desired level of consumption.
3. While the potential spillover from the necessary increment in housing consumption is widely valued (has positive utility) for those who would have to bear the expense of the necessary subsidy, there is no market mechanism for providing this subsidy; no single individual will provide his portion because there is no way to exclude others who would derive satisfaction from the spillover nor is this in any sense a rival good (the potential donors do not wish to compete for the housing).

The merit want case is thus not a polar case of either a public or private good but what Musgrave (1969) has called a mixed good. Thus, merit wants require a subjective theory of social goods, one which attempts to account for the external benefits derived from private consumption and to arrive at a level of subsidy which is required to achieve some sort of welfare maximization. Margolis (1968) has observed that whether the issue is one of interpersonal utilities or of locating all of the externalities of private consumption of the underprivileged which would have value to the privileged, preferences are not revealed through the market and must be elicited through the political process, though the problem by no means ends there. Marglin (1963) has presented rigorous analysis of the interpersonal utility problem in a piece dealing with the question of intergenerational transfers and the social discount rate.

Consider a person or class "R" of relatively rich persons and a person or class "P" of relatively poor persons who consume a lower quality of housing than that which R would be willing to subsidize in order that P reach the higher level. The reasons may range over some or all of those suggested in this chapter. It seems helpful to draw upon the concept of Ritschl that the same individual derives utility both from his functioning as a consumer satisfying personal needs, wants and interests and as a citizen interested in social cohesion and deriving satisfaction from meeting the needs of others. (Musgrave and Peacock, 1958) Buchanon and Tullock (1962) somewhat more narrowly observe that the same individual may evaluate some things as a profit (or personal utility) maximizer and others as a member of a social group,

especially if organized activity can eliminate external costs or confer external benefits. The classifications of interests might thus be typified following a transfer from R to P in the form of a housing subsidy:

	Utility as Consumer	Utility as Citizen
R	Utility from P's increment in housing consumption which reduces threat of disease, social disorder	Utility from improving lot of fellow-citizen
After subsidy	Utility from improved appearance of the community as a result of P's increased housing consumption	Utility from the degree of redistribution achieved through housing subsidies
	Utility from R's own housing	Utility from improvement in P's housing <u>per se</u>.
P	Utility from R's physical and social health resulting from R's own choice of adequate housing (or can the absence of a threat never thought of as a potential any way be considered to contribute to P's satisfaction?)	
	Utility from improved appearance of his own neighborhood	
After subsidy	Utility from P's own housing including the increment subsidized by R	

This situation seems to be one of asymmetric, reciprocal spillover of benefits accruing from housing consumption, provided P actually does enjoy some positive utility from R's housing consumption. However, the fact that P derives satisfaction from his increased housing consumption as a result of the subsidy seems to create a sort of "free rider" question. That concern would seem valid, however, only in the case in which

an equitable income distribution already existed before subsidy; in that case the collective decision might be to set housing standards and rent-income ratios so as to be compatible and then to simply require that standard housing be consumed without subsidy, in other words to enforce strictly a set of minimum codes. In the situation in which the income distribution is not considered equitable, what at first appears to be a "free rider" problem is recognized as simply a form of redistribution, albeit inefficient when viewed strictly as a redistributive mechanism, since P would not have chosen to allocate the entire subsidy amount to increased housing expenditure.

6. Redistribution

A society is continually in the midst of the political process of determining the equity of the distribution of resources in the society. This determination may involve considerations of the welfare of citizens having relatively little of the society's resources or may be concerned only that all members of the society have a reasonable opportunity to make free choices. To the extent that pure redistribution is a public objective, unrestricted cash grants would be called for. However, the traditional argument that cash transfers are necessarily more efficient than commodity transfers (such as housing) in raising the social welfare is valid only if one of the following is true: (1) the change in social welfare is a function of the utility (satisfaction) of the recipient alone (with no account taken of the utility of the donor), or (2) donors are beneficially concerned with raising the general welfare or utility levels of the recipient as perceived by the recipient but are indifferent to the composition of the consumption of the recipient. (Aaron, 1972)

If the distribution of resources in the society were already equitable, we would not need to make such considerations. If it is considered inequitable, then this argument suggests that the political process of arriving at the form of redistribution will involve merit good considerations as long as those who will be net donors have some preferences as to how the redistributed resources are used by the net recipients. This may give a paternalistic slant to the questions of redistribution but may nevertheless be a realistic one. Furthermore, the disadvantages faced by low-income persons may be compounded by factors other than lack of adequate income alone.

Both general redistribution and tied transfers may occur simultaneously, of course. Tax and income maintenance programs could be used to achieve the desired degree of equality in the general distribution of resources while specific government programs in housing, health care, and education, for example, could be used to achieve the desired degree of equality in each of these areas. (Thurow, 1971) But this leads us into the question of policy options for meeting the range of objectives discussed thus far.

C. POLICY OPTIONS

In view of the multitude of possible policy objectives it would be folly to attempt to describe policy options specifically suited to each objective but only to that one. Consequently, I have regrouped the set of objectives into four general areas for discussion: (1) redistribution, including the special redistribution of the merit goods case, (2) housing market actions, (3) overcoming neighborhood externalities, and (4) direct supply actions. The first and last areas are given most attention be-

cause of their relevance to the issue of subsidized rental housing and the role of Federal tax incentives in these programs. These groupings serve to organize the discussion without attempting to be mutually exclusive.

1. Redistribution

If we construe the term redistribution broadly, a number of policy options can be formulated. A partial list would be:

a. general transfers

b. transfers in kind (for example, subsidies tied to housing)

c. public expenditures in non-housing components

a. General Transfers

Redistribution achieved through tax and income maintenance programs would achieve some politically desired level of equality without specifically restricting use of the funds received for housing. Any problems arising from continued underconsumption (for one of the reasons introduced earlier) would have to be met through other direct housing programs of the government or through coercion, as in code enforcement programs.

It is possible that a degree of redistribution could occur, though unintended, through the working of specific housing programs. Aaron (1972) has argued that government subsidies encouraging the consumption of housing (or any other good more capital intensive than the average) will in the long run raise the yield on capital relative to wages, thus being counter to the original subsidy redistribution in all likelihood. Of course, if the subsidy induces new construction, in the short run the construction period is relatively labor intensive so that the transient effect on the growing edge of the housing market is opposite to the probable long-run effects. Broad government actions affecting wage and profit

levels could also have redistributive effects, relative wage increases tending to be redistributive downward (except to the unemployed) and relative profit increases tending to be redistributive upward.

Recent discussion of the possibilities of a Federally funded income maintenance program through a revision of the welfare system, as in the Family Assistance Program proposed by the Nixon administration (H.R. 4173), indicates that, while there is growing political support for general programs of income maintenance, the levels of support envisioned are quite low--starting at a guaranteed income of $1600 per year for a family of four, which is less than half the 1968 poverty budget levels set by the Social Security Administration (the "Orshansky poverty line" of $3,335) and only a fraction of the U. S. Department of Labor's lower budget of $8,925 for a family of four living in Massachusetts. (Schottland, 1970) The President's Commission on Income Maintenance Programs (1969) (also the Heineman commission, after the chairman) asserted that work disincentives would not be significant, thus challenging one of the major objections raised to general income maintenance. The major objection remaining is simply that such a program would cost too much--i.e., those with political power are just not interested in significant redistribution of resources.[1] Primary re-

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[1]The Family Assistance Program includes a work incentive arrangement similar to that proposed by the Heineman commission in that 50 cents of benefit would be withdrawn for each dollar of earned income over $720 per year, or benefit payments would be reduced to zero when earned income had reached $3,920 per year for a family of four. The Heineman commission recommended a minimum guaranteed annual income of $2,400 for a family of four with a reduction in benefits of 50 cents for each dollar earned, so that benefits would cease when earned income reached $4,800. Neither the higher levels recommended by the Heineman commission nor the concepts of a universal income supplement [cont.]

sponsibility, administratively and financially, for welfare payments remains with state and local governments with support from categorical Federal programs, such as Aid to Families with Dependent Children, Old-Age, Survivors Disability, and Health Insurance, Aid to the Blind, and Aid to the Permanently and Totally Disabled.

Shelter for poor families is one of the items for which the welfare payments are intended, although only in the case of "protective payments" are the funds allocated for housing paid directly to the landlord by the local welfare department. And housing expenditures account for the largest single item in a household's budget. (Martin Rein, 1972) A 1969 estimate by the Department of Health, Education and Welfare was that Public Assistance channels about 1.1 billion dollars annually into the residential inventory. About 11 percent of all Public Assistance clients residing in metropolitan areas in 1966 were in public housing (Rein, 1972). But most of the Federal housing programs are designed only to reach the near poor. As we shall see later, public housing rents have until recently been required to cover operating costs, thus have been out of the reach of the poorest families. We see, however, that even when general transfers are made, there is continuing concern with the housing expenditures of the welfare recipients and a hint of the merit good considerations which are more conscious in direct housing subsidy programs.

[cont.] program financed and administered by Federal government and making payments based on income to everyone who meets the test of need appear to have generated much political support.

b. Transfers In Kind

In-kind transfers for housing can be thought of in two general categories, housing allowances and project subsidies. In the case of housing allowances either cash or a voucher of some sort would be provided to eligible persons with the proviso that it be spent only to purchase housing services in some form. Project subsidies would be tied to particular buildings or groups of buildings in which family income would determine eligibility for the subsidy; the subsidy remains attached to the building if the family should move.

The report of the President's Committee on Urban Housing (1968) succinctly stated the arguments for and against housing allowances. Housing allowances would be desirable because:

1. The consumer is allowed to make his own choice in the free market;
2. A better match is possible between supply and demand in housing style, quality and location than is possible with subsidies tied to particular buildings or locations;
3. Public controversy over location of subsidized projects is avoided;
4. Administrative costs might be reduced compared with more directly subsidized and controlled methods.

On the other hand housing allowances have drawbacks, among them:

1. Immediate adoption of a massive housing allowance in a given community would likely inflate the cost of housing, at least in the short run, because most housing ser-

vices would be purchased in the existing housing stock (President's Committee on Urban Housing, 1968, p. 71);

2. In a tight housing market with few vacancies and much substandard housing, project subsidies may be a more direct and efficient way to promote rehabilitation and new construction.
3. Definitions for eligibility purposes of "standard" or "adequate" housing and of "insufficient" income would create equity questions if the result was to exclude low-income people already living in "adequate" housing; if they are included in the allowance then the cost increases without direct public benefit. (Grigsby, 1963, p. 279)
4. Factors other than low income alone may be responsible for poor housing conditions, such as racial discrimination, landlord discrimination against or exploitation of persons on Public Assistance (Rein, 1972), lack of adequate mortgage financing for improvements (Sternleib, 1970), inadequate information about the housing market and how to get the most out of it (Frieden, 1971).

As of this writing the HUD is in the process of setting up the experimental housing allowance program called for under Section 504 of the Housing and Urban Development Act of 1970 (P.L. 91-609), the purpose of which is to begin to unravel this complex of questions. There has been little other U. S. experience relevant to the concept of housing allowances. The limited previous experience lies in the area of welfare

payments for housing, mentioned above, a small experiment as part of the Model Cities program in Kansas City, Missouri (Mattox, 1971), and other government payments related to housing, though not necessarily as a matter of insufficient income nor of substandard housing, such as military housing allotments and relocation payments for those displaced by public programs. It would seem unlikely that the complex questions surrounding housing allowances will be answered in the near future.

c. Public Expenditures in Non-housing Components of Environment

As mentioned previously, the "adequacy" of housing is affected by the character of the neighborhood and of the services to which a household has access because of its residential location. To the extent that public programs and expenditures provide improvements in these categories for the less privileged but are funded by the more privileged (economically) these programs and expenditures have a redistributive element that may contribute to the improvement of housing conditions, broadly construed. Model Cities, education assistance, code enforcement, neighborhood improvement, augmented city services, medical assistance, legal aid programs--all are examples of Federal programs which may have elements of redistribution affecting the satisfaction of lower-income persons with their residential location. The Douglas commission identified improvement in urban services in areas predominantly occupied by low-income persons as a necessity, not only as a matter of equity but of political stability. (National Commission on Urban Problems, 1968, pp. 346-353) Improvements in access to employment through improvements in the transportation system may have redistributive elements related to residential location. Programs which enable residents to gain more control over

their own lives and to participate effectively in the local political system, such as attempted in the Community Action Programs funded through the Office of Economic Opportunity, might also quality. (Spiegel, 1968; Turner, 1968) The point here is not to go into any detail in all of these possibilities but simply to suggest the multitude of ways in which programs with redistributive features could contribute indirectly to housing improvement.

2. Housing Market Actions

Potential areas for Federal activity in the housing market could include assuring an even flow of mortgage funds into the residential construction market, acting directly to combat racial discrimination in housing choice, forcing or encouraging urban municipalities to allow a wide range of housing types and quality levels within their boundaries, and assisting in the flow of market information (especially to the less privileged).

Of all these possibilities the primary Federal activity has been in the area of mortgage finance. Stimulated by the crisis of the Depression of the late 1920's and early 1930's, a series of actions were taken to undergird savings institutions, to insure deposits of savings earmarked for housing loans, and to insure the mortgage loans themselves at high fractions of loan to value (the Mutual Mortgage Insurance Fund to cover mortgages insured through the Federal Housing Administration). (Haar, 1960) The predominant effect of these programs has been to undergird the market for single-family homes rather than for multifamily rental units upon which low-income families typically depend. Only very recently have the numbers of rental units produced under Federally insured loans

approximated the total of single-family units. (U. S. House, Subcommittee on Housing and Urban Affairs, 1970a.)

The record of Federal action on racial discrimination is not so positive. The 1938 FHA Underwriting Manual cautioned that "If a neighborhood is to retain stability, it is necessary that properties shall continue to be occupied by the same social and racial group." Not until two years after a 1948 U. S. Supreme Court decision did the FHA start a policy of refusing to insure loans on property with restrictive covenants. And as recently as 1967 the National Committee Against Discrimination in Housing was charging the Federal government with a series of policies either encouraging racial discrimination or allowing openly segregated patterns of location and assignment in Federally assisted housing units while failing to take affirmative action to combat racial discrimination. (The NCDH booklet How the Federal Government Builds Ghettoes is the source for the above history as well.) Despite the anti-discrimination provisions of the Civil Rights Acts of 1964 and 1968 there is not much evidence of aggressive action on the part of HUD or the Department of Justice in assuring non-segregationist location decisions for Federally assisted housing (Carnegie, 1971) nor for initiating actions to combat patterns of discrimination, nor even successful prosecution of private complaints submitted under the provisions of the Civil Rights Act of 1968. (Hecht, 1972)

Other Federal activities in the housing market have been marginal. Housing information centers, tenant organization, homeownership counseling have tended to be private activities with minimal Federal support. For example, Section 106(a) of the Housing and Urban Development Act of 1968

(P.L. 90-448) authorized the Secretary of HUD "to provide or contract with public or private organizations to provide information, advice, and technical assistance with respect to the construction, rehabilitation, and operation by nonprofit organizations of housing for low or moderate income families." Yet the program has never been funded, has not been included in the presidential budget nor has funding been actively sought by HUD. (Keyes, 1971, p. 172) While this stance partially reflects the attitude that profit-oriented developers are making a satisfactory response to the need for housing production, it may also betray a lack of concern with the supposed beneficiaries of HUD's production efforts, the eventual users of the housing. An even more direct indication is that the fiscal year 1972 appropriations by the Congress for a previously unfunded homeownership counseling program for families of low- and moderate-income previously disqualified from mortgage loans (Section 237 of the Housing and Development Act of 1968) were made despite the lack of a request for any funds in the President's budget request. (Journal of Housing, 1971a)

3. Control of Neighborhood Externalities

Dealing only with neighborhood externalities other than those traceable to low incomes, the primary government role is establishing standards and controls for development and property use. Zoning controls over land use as well as building construction codes and housing codes governing conditions of use have been a function of state and local government in the U. S. and seem likely to remain so. (American Society of Planning Officials, 1968, and National Commission on Urban Problems, 1968, Part III, Ch. 1) Federal attempts to impose or encourage standards taking into account benefits to low-income citizens have not

been particularly successful. The Workable Program for Community Improvement required of municipalities seeking Federal funds for urban renewal, code enforcement, and housing programs has been found to be counterproductive in the case of municipalities wishing to exclude low-income residents, since the municipality could rely upon the lack of a Workable Program as their excuse for lack of housing for low- and moderate-income persons. (National Commission on Urban Problems, 1968, pp. 177-178) Other Federal devices have been used in attempts to encourage localities to plan comprehensively for community development--the Community Renewal Program and the Neighborhood Development Plan, for example. Now the prevailing winds in the Administration and in the Congress seem to be blowing in the direction of greater local control over these matters with less specification being tied to the Federal funds supplied as block grants to a municipality or to a metropolitan or regional public authority of some kind. (Journal of Housing, 1971b)

4. Supply Policies

As a matter of housing policy, the Federal government could choose to act directly on housing supply in one of several ways: indirectly stimulating supply through income transfers to households (thus creating additional effective demand for housing and housing services), direct building by government agencies, encouraging building by private contractors for public agencies, stimulation of private developers to undertake construction or rehabilitation of housing, or encouraging homeownership.

a. Increasing Effective Demand

As mentioned under the discussion on redistributive policies, the U. S. experience with general income transfers is limited to the welfare

system, and the impact of welfare payments to low-income families on their housing or on supply response to their increased effective demand is ill-understood. There appears to be some indication that the augmentation of income is not the only component of change necessary for some families to increase their "effective" demand. (Rein, 1972) With regard to specific housing allowances there is the problem of demand inflation, especially of rents, in the short run. Allowance might be restricted to areas with a weak, or "loose" housing market, i.e., with significant numbers of vacancies in the appropriate price ranges. If the political anguish of a period of demand inflation in housing prices lasting several years could be endured and if the funding for allowances was assured for the indefinite future, one would expect the long-run effect to be one of increased housing supply (meaning services as well as stock) in the appropriate price ranges. (Schechter and Schlefer, 1971) The housing allowance experiment being undertaken by HUD is intended to develop information for dealing with these questions.

b. Direct Building

(1) U. S. Experience

In principle the Federal government could undertake to build housing directly, acting as developer and general contractor for acquiring sites, building units and managing them. There seem to be serious philosophical and political impediments, not to mention some legal questions, to such a course in the U. S. During the Depression of the 1930's the Federal government directly sponsored the construction of housing in an effort to shore up lagging housing production in the country, to create jobs, and to house the Depression poor. Some 21,600 units were built under the Public Works Administration enabled by the National Industrial Recovery

Act. (48 Stat. 195, 40 U.S.C. 401) Even in this case, however, the Federal agency rarely acquired the land directly, but depended on localities to assemble the land for housing sites; and the PWA constructed the units by contract rather than by the use of government employees. (Abrams, 1965) Housing for war production workers under the Lanham Act was constructed in a comparable framework in World War I (Meyerson, 1962) and in World War II. The legislation for these programs was careful to condition government action on non-interference with private enterprise and insisted that findings be made that unaided private enterprise was unable to meet the particular need before production of housing by direct government action would be allowed. There are also indications of aversion to allowing the Federal government to remain in the role of landlord any longer than absolutely necessary. The PWA and Lanham Act units, for example, were transferred to local public housing authorities once these were established under later legislation. Table II-2 summarizes the history of direct Federal building and the disposition of the resulting units.

The legal questions about direct Federal building programs revolve around the questions of eminent domain and of powers reserved to the States. While the development of war production housing under the Congress' powers was never challenged, the PWA housing program was contested in the lower courts. The lower court ruling was never reviewed by the U. S. Supreme Court, but the background of New Deal programs under the Roosevelt administration and the legal decisions that were made have shaped the Federal role in housing ever since.[1]

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[1] A more complete account of these developments can be found in Abrams (1965, Ch. II).

TABLE II-2: FEDERAL DIRECT BUILDING PROGRAMS

YEARS	ORIGIN	AGENCY	OBJECTIVES	APPROX. NO. UNITS PROD.	LAND ACQUISITION	FINANCING	DISPOSITION	REFERENCES
1917-18	WWI Defense Hsg.	Emergency Fleet Corp. of U.S. Shipping Board	Shipyard workers & families	9000 dwellings 6000 dorm.	By shipyard	Bought on contract, rented by EFC	Sold in 1918 for average of 37% of cost	Arch. Forum (1940a, p. 9) Arch. Forum (1940b, p. 78) Meyerson et al. (1962, Ch. 13)
1917-18	WWI	U.S. Housing Corp. (N.Y. corp. formed by Labor Dept.)	War production workers & families	6000 dwellings 8000 dorm-units (1)	Purchase by U.S. Housing Corp.	-----	Sold in 1918 for average of 37% of cost	Arch. Forum (1940b, p. 78) Meyerson et al. (1962, Ch. 13)
1940-48	WWII Lanham Act ('40) extended '41 by Temporary Shelter Act	Federal Works Agency (Dept. Interior) Subsumed Feb. '42 under Nat. Hsg. Agency	Military personnel, civilian employees of military, defense production workers & families	116,400 (80,000 permanent, or 'demountable'; balance 'temporary')	Federal purchase & development	Federal contract (initially cost-plus-fixed-fee, later fixed price)	Some sold to private indiv., some to local housing auth., some destroyed	NAHRO (1942, p. 61) J. Housing (1962) Kelly (1951)
1949	Wherry Act	-----	Military family housing	86,000	Leased to builder by Fed. gov't.	-----	-----	J. Housing (1952, pp.7-10)
1951	Korean War (Defense Hsg. Act)	HHFA	-----	-----	-----	-----	-----	U.S. Senate (1951) Defense Housing Act of 1951
1933-38	Depression	Housing Division of Public Works Admin. (Dept. of Interior)	Low-rent housing, 'pump-priming'	21,500 (51 projects in 36 cities - Abrams)	Federal purchase or condemnation (PWA planned & contracted houses)	45% capital grants 55% gov't. loans (Arch. Forum)	Acquired by local hsg. auths. (?)	Arch. Forum (1938, p. 412) Abrams (1965, Ch. 11)
1933-	Depression	Resettlement Admin. (Rexford Tugwell)	Gov't. city building 'pump-priming'	Greenbelt towns in Wisconsin, Ohio, Md.	-----	-----	Acquired by private parties (?)	Abrams (1965, Ch. 11)
1933-35	Depression	Federal Subsistence Homesteads Corp., Dept. of Interior	Shelter & food (garden) for low-wage families	1000	Federal purchase & development	Federal gov't. held 100% mortgage	-----	NAHO (1935)

(1) Arch. Forum reports these numbers. Meyerson reports 15,000 dwellings plus 14,000 dormitory units in both the EFC and U.S. Housing Corp. programs.

The central Constitutional housing issues were the validity of Federal spending and the use of eminent domain powers for housing under the "general welfare" clause of the U. S. Constitution (Art. I, Sect. 8): "Congress (has the power) to . . . collect taxes . . . to provide for . . . the general welfare of the United States." As the sequence of court rulings summarized in Table II-3 indicates, an initial favorable finding in 1934 supporting the PWA's condemnation authority for housing was quickly nullified by a contrary ruling six months later--both in Federal District courts. The PWA had apparently exercised eminent domain with the cooperation of the states and predominantly as a device for clearing titles. (National Association of Housing Officials, 1935) An initial appeal to the U. S. Supreme Court was withdrawn before hearing because the Roosevelt administration feared that an already hostile Supreme Court might render an unfavorable opinion and wreck other programs operating under the broad general welfare powers. Meanwhile, lower court findings in New York established the Constitutionality of the use of eminent domain by the city for Federally-aided public housing and even for transfer to the PWA of land condemned by the city.

Finally the U. S. Supreme Court in a 1937 ruling established the broad construction of the Federal authority under government welfare powers. The pattern of Federal spending under general welfare powers and state (or municipal) condemnation under doctrines of public use was established. The "public use" doctrine has gradually been expanded in court decisions to support not only public ownership for public use under Federal and State programs but also private ownership for non-public uses deemed to be for the public benefit or welfare, as in the Urban Renewal program. (Abrams, 1965)

TABLE II-3: LEGAL HISTORY RELATED TO FEDERAL ROLE IN LAND USE FOR HOUSING

July 1934	Ohio District Federal Court	U.S. vs Certain Lands in City of Cleveland and Adv. Loan Co.	Upheld right of government to acquire land for housing	NAHO (1935)
Jan. 1935	Kentucky District Federal Court (9 Federal Supp. 137) Upheld in Circuit Court of Appeals	U.S. vs Certain Lands in City of Louisville	Ruled housing not a Federal purpose, enjoined condemnation. (Not heard by U.S. Supreme Court.)	NAHO (1935)
1936	N.Y. Supreme Ct.	N.Y.C. Housing Authority vs Muller	Upheld city use of eminent domain for public housing (?)	Abrams (1965, Ch. 11)
1936	N.Y. Supreme Ct.	Matter of City of N.Y. (Bushwick Avenue)	Upheld City of N.Y. taking property for transfer to PWA	NAHO (1935)
1937	U.S. Supreme Ct. (301 US 548)	Steward Machinery Co. vs Davis	Accorded to Federal Gov't. primary authority for general welfare	Abrams (1965, Ch. 11)

While the Federal government has not used eminent domain directly for housing purposes since 1935, it has been argued that it could.

> The right of the Federal government to spend for a particular purpose carries with it the right to employ either regulation or eminent domain for the same purpose. [If] the Federal government is authorized to regulate in the general welfare, to spend for renewal of cities, or to provide decent homes for the poor, it may employ not only the spending power but any power best calculated to achieve the purpose. (Abrams, 1965, p. 218)

National study groups on housing and urban problems chaired by Paul Douglas and Edgar Kaiser concluded in 1968 that the Federal government could, other avenues failing, become the "builder of last resort."

> If both a locality within a State, and the State itself, fail in their responsibilities to help meet the present crisis in the supply of housing for low-income Americans, the Commission believes that the Congress should authorize an emergency low-income housing program under which the Department of HUD would, as a direct Federal operation equipped with the powers of eminent domain, build and have ready for occupancy such portion of 500,000 low-income housing units a year as remains unmet by local and State action. (emphasis added) (National Commission on Urban Problems, 1968, p. 192)

> The Committee recognizes that the Federal Government could assume full responsibilities for effectively and rapidly developing the full volume of subsidized housing needed to shelter millions of house-poor families. It could acquire sufficient land by condemnation, let contracts to private builders for housing development, and own and manage the completed projects.
>
> We believe that such massive Federal intervention in the U. S. housing market and Federal pre-emption of local prerogatives is both a drastic and as yet unnecessary step. The existing system for developing Federally subsidized housing should and must be relied upon to do the job. If it should clearly fail in the next few years, however, we recognize that it could well become necessary to turn to the Federal Government as the "houser of last resort" for the nation's lower income families. (President's Committee on Urban Housing, 1968, p. 36)

While the National Commission's recommendation is ambiguous as to whether the Federal government would actually be the builder, the President's Committee makes it clear that what it has in mind is government as developer, with private builder doing the construction under contract. Given the long struggle of public housing in this country the prospects of such Federal intervention as threatened above seem unlikely.

(2) Public Housing

The public housing program established by the U. S. Housing Act of 1937 (50 Stat. 888, 42 U.S.C. 1401 et seq.) was shaped by the political and legal history discussed above.[1] The authority for acquisition of land and for contracting for building lies in the hands of locally constituted housing authorities. The Federal role lies primarily in the financing of the development through an annual contributions contract with the local housing authority to cover debt service costs on housing authority bonds.[2] Amendments to the Housing Act made in 1969 (the

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[1] See also the discussion on public housing in the report of the National Commission on Urban Problems (1968, Pt. I, Ch. 3).

[2] The interest payments on bonds issued by local housing authorities are exempt from state and Federal income taxes. While not the main burden of this work, this tax exemption is another form of Federal subsidy of the capital costs of public housing. Others have shown that the net Federal costs would be reduced by removing the tax exemption and increasing the annual contributions to housing authorities to meet the increased debt service expense resulting from the higher interest rates which would have to be paid in order to market the bonds. The net Federal saving would accrue basically from cutting off the windfall gain to those bond purchasers who were in higher income tax brackets than the tax bracket of the marginal purchasers. That is, the authority must set the interest rate at a level at which it can sell all of its bonds; since the level of interest rate necessary to have a sufficiently high after-tax return for the last buyer allows much higher returns to purchasers in higher tax brackets who would have been willing to buy at a lower interest rate and still enjoy a satisfactory after-tax return.

"Brooke" and "Sparkman" amendments of P.L. 91-152) and in 1970 (P.L. 91-609) have allowed the Federal annual contributions to cover operating and maintenance expenses as well as debt service, both to overcome problems of rising expenses and to serve poorer families.

The local housing authority is responsible for management of the units, although contract management arrangements can also be made. Tenant payments ordinarily must cover the operating costs of the project; thus public housing is still too costly for destitute families. The maximum admission income levels are set by local housing authorities, but 20 percent of income must be less than 80 percent of rentals of available private housing. (Marcuse, 1969) Median family income in public housing as of 1970 was $2,501 (1970 HUD Statistical Yearbook, 1971, p. 108).

It has been found that in some cases development may proceed more rapidly if a private developer handles all of the development, including land assembly, based on an agreement with a local authority as to the basic requirements, unit types, construction quality, per unit price, and such. Under this so-called "Turnkey" arrangement the housing authority is not directly involved until the project is completed and ready for rental and management by the authority.

Leasing of existing units in the private housing market was established as an option for local housing authorities when Section 10(c) was amended and Section 23 was added to the Housing Act in 1965. (79 Stat. 451) Leasing has enabled local housing authorities to expand the number of units available while avoiding some of the problems which

have become associated with projects in which large numbers of poor families are concentrated. The leasing option for authorities has created a situation in between the supply-oriented project development and the demand-oriented housing allowance. Clearly leasing does not directly produce housing. But there seems to be some evidence that the availability of a guaranteed lease from the housing authority has enabled private owners to obtain the financing necessary and the confidence in the necessary income stream to undertake rehabilitation of existing units or even construction of new units. The option of authorities to allow eligible families to locate their own housing and then arrange for a lease between the owner and the authority does not seem to have been much used. While this would amount to a sort of rent certificate program, authorities have apparently not wanted to spend the time it would take to instruct the family in its housing search for a qualifying building and to inspect the units located until one was found which met authority standards. (Bach, 1970)

c. Stimulating Private Building of Privately-owned, Subsidized Housing

A more indirect Federal role in housing supply for low- and moderate-income persons is possible through the creation of favorable mortgage terms, through subsidies tied to capital costs of eligible projects and through favored tax treatment. Since much of the remainder of this work is devoted to the issue of tax incentives, no further mention is made here except to note that a standing Federal offer for a fee payable to the developer of projects meeting certain Federal guidelines would be an alternative to tax incentives as an encouragement to development.

Any action taken by the Federal government to improve the flow of construction funds and mortgage money into residential construction is in some respects beneficial to low-income households to the extent that housing supply increases. A later discussion will criticize the "filtering" arguments attached to programs for increasing housing supply generally without aiming the actions at low-income persons. The specific options for directly stimulating housing development for lower-income groups include:

1. Mortgage insurance available only for qualifying projects and guaranteeing loans at high fractions of loan to value (thus reducing the equity or down payment requirements) and long mortgage terms (to reduce the amount of annual mortgage payment).

2. Direct, low-interest loans for projects limited to eligible persons.

3. Interest subsidies tied to the mortgage amount and intended to reduce rents to eligible tenants through reduced project debt service costs.

4. Federal payments to owners to make up the difference between the rent-paying ability of low-income persons and the rent required to cover expenses plus profit.

The history of Federal programs in housing includes combinations of all of these possibilities:

1. Mortgage insurance--in the Section 231 elderly housing program started in 1959.

2. Direct loans--in the Section 202 elderly housing program started in 1959 and expanded in 1964 to include handicapped persons and families.

3. Interest subsidies--in the Section 221(d)(3) program (3 percent net interest rate) started in 1959 for families displaced from urban renewal areas or as a result of Government action and broadened in 1961 to include low- and moderate-income families; in the successor Section 236 program (net interest rate of one percent) started in 1968.

4. Federal rent supplements--in the Rent Supplement program (Section 101 of the Housing and Urban Development Act of 1965, 12 U.S.C. 1701s) designed for use in conjunction with the 221(d)(3) market interest rate mortgage program.[1]

The history of these programs to stimulate private development of rental housing suggests that there were other public purposes than meeting the needs of low-income families alone motivating them. In fact the Section 221(d)(3) and the successor Section 236 rental housing programs were openly programs designed not for the poor but for those able to pay all the costs of living in newly constructed or substantially rehabilitated housing except for a portion of the mortgage payment. The Federal subsidy is in the form of payment by HUD to the private mortgagee (mortgage holder, or lender) of the FHA mortgage insurance premium and the difference between the mortgage payment at market interest rate (within the ceiling established by law and FHA determination) and the mortgage payment at an interest rate of one percent on a loan guaranteed for a term of up to 40 years.

To be eligible for 236 housing a family must have an adjusted income (95 percent of regular gross income of members of the family over 21 during the preceding 12 months, less $300 per minor) which ordinarily must not exceed 135 percent of the local admission limits for public housing. However, in units accounting for up to 20 percent of the subsidy funds contracted for nationally the incomes of tenants at initial rent-up may be as high as 90 percent of the local admission limits for Section

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[1] Concise descriptions of the origins and operation of these programs are found in the Douglas commission report (National Commission on Urban Problems, 1968), the Kaiser committee report (President's Committee on Urban Housing, 1968) and in the review by Aaron (1972). The language of the statutes is collected in Basic Laws and Authorities on Housing and Urban Development (U. S. House, 1971a).

221(d)(3) housing, if the lower limits would make the project not feasible. The family payment for rent must represent at least 25 percent of adjusted gross income. As family income rises the amount of subsidy is reduced until, eventually, the subsidy may be reduced to zero and the full rent paid to cover the mortgage payment at market interest rates. As of March, 1970, the median gross annual income of families served by the 236 program was $5,089, about double the incomes of families in public housing or Rent Supplement projects (1970 HUD Statistical Yearbook, 1971, p. 125).

The 236 program has at least the potential for reaching lower income families than could be served by the interest subsidy alone, if leasing of units to the public housing authority or Rent Supplement payments are arranged for some of the tenants in a given project. The initial 236 legislation in 1968 limited proportions of these deeper subsidy programs to 20 percent in any one project, apparently to encourage economic integration and to avoid the stigma and problem concentration which had become associated with public housing. The maximum percentage was raised to 40 in 1969.

The Rent Supplement program reaches about the same income levels as public housing but operates in privately owned and operated housing. Originally proposed by HUD as a moderate-income program, it was changed by the Senate Banking Committee to reach lower-income levels by allowing Federal payments to make up for as much as 70 percent of the market rent in qualifying projects. The apparent intent of the Rent Supplement program to promote racial and economic integration has been stymied by pro-

visions attached in the House of Representatives requiring consent of the locality in which a rent supplement project is to be built, thus limiting location of these projects, by and large, to central cities. The hope that a project would have a wide range of income levels in its tenantry, including some who would pay the full market rent, has not been borne out either, as developers have tended to apply for rent supplements in all of the units in a project. This is attributed to amendments to the program which have been added by the Congress to insure that the costs and amenities of these projects were appropriately low for their poor tenantry. The upshot is that very austere projects result which are primarily marketable to those eligible for the maximum subsidy and least able to seek alternatives in the conventional housing market. (President's Committee on Urban Housing, 1968, pp. 64-65) Median family income in Rent Supplement projects as of 1970 was $2,185. (Kummerfeld, 1971, p. 469)

d. Stimulating Private Rehabilitation

Since the addition of units to the housing stock by new construction of all kinds, not just subsidized rental projects, amounts annually to only about 3 percent of the existing stock, it may seem surprising that more government attention has not been paid to the conservation and improvement of the existing housing. While the programs mentioned above have often permitted application to rehabilitation, only sparing use of them has actually been made for rehabilitating the existing housing. Rehabilitation seems to be a sort of step-child in Federal housing policy. As an example, the President's Commission on Urban Housing was challenged "to study this vital question: How can the resources and talents of private industry be directed in to the rehabilitation of urban slums?" (President's Committee on Urban Housing, 1968, p. 222).

But the Commission produced a report of 250 pages in which only 15 were directed to the question of rehabilitation and two thick supplementary volumes of technical studies dealing primarily with new construction.

The only specific Federal programs seeking to deal exclusively with rehabilitation of existing structures are the HUD grant and low-interest-rate loan programs (known by their section numbers in the Housing Act, 115 and 312, respectively)--available in areas designated for such programs as urban renewal, concentrated code enforcement, or the neighborhood development program--and the 221(h) program designed to encourage nonprofit sponsors to rehabilitate housing for homeownership by persons qualifying for a 3 percent loan. This program has been succeeded by a feature of the more general interest subsidy program for homeownership, the Section 235 program enacted in the Housing and Urban Development Act of 1968.

e. Encouraging Homeownership

Subsidy programs can be designed to encourage ownership either of single-family units or apartment units. The Section 235 program is the first U. S. program for directly subsidizing ownership of single-family houses for those who could not otherwise afford to own.[1] As noted by Rein (1972) some families, where state laws permit, have been able to undertake purchase of a house on the strength of their welfare payments. The 235

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[1]The income tax subsidy for homeownership, especially for those with high incomes, arising from the deductibility of mortgage interest and real estate taxes, has been exposed by a number of investigators. For example, Aaron (1972) computes that in 1966 homeowners received 7 billion dollars in tax benefits, equivalent to almost 17 percent of the 42 billion dollars collected from the entire personal income tax in that year.

program offers Federal insurance for virtually 100 percent loans on new or substantially rehabilitated housing and a maximum subsidy of the difference between the mortgage payment at market rate and the payment at one percent interest. The purchasing family must apply at least 20 percent of adjusted income for mortgage payment insurance and real estate taxes. Utilities, maintenance and repairs are additional costs. The maximum adjusted income levels are the same as for Section 236 housing. As of March, 1970, the median gross annual income of families served by the 235 program was $5,632, roughly double the incomes of families in public housing or Rent Supplement projects. (U. S. Senate, 1970, pp. 718-721)

For moderate income families with incomes too high to be eligible for 235 loans, the Emergency Home Finance Act of 1970 (P.L. 910351) authorized the Federal Home Loan Bank Board to obtain up to $20 per month for up to 60 months to reduce to an affordable level the mortgage loan payments on conventional loans. The program was named the Housing Opportunity Allowance Program. (U. S. Congress, 1972, p. 161) The administrative tendency to limit such a program to "safe" new construction rather than existing housing will probably limit its benefit to higher income families who can afford, or nearly afford, to carry mortgage loan payments on the full cost of new construction. There seems no end to the ingenuity of the Congress in finding ways of subsidizing the middle class.

Ownership in apartment buildings has been encouraged through the same programs as those for rental housing mentioned above--202 elderly, 221(d)(3), 236 (in which cooperatives may be formed by the tenants) and 235 which may

be used for the condominium form for ownership of individual units in an apartment building.

D. THE ROLE OF PROJECT SUBSIDIES

From the preceding discussion it can be seen that U. S. policy with respect to the housing of low-income persons has been oriented to solutions through project subsidies. That is, the subsidy provided is attached to a particular project or building and is made available to an eligible recipient only if that unit is occupied. The other major observation is that the subsidies provided have never been intended to assist literally destitute persons but those who could devote some personal income to housing, specifically in the public housing program.[1] Furthermore the trend has been to orient the project subsidy approach to higher income levels. While the public housing (including leasing) and Rent Supplement programs reach families in the $1,000 to $4,000 income range, the below-market interest rate programs tend to accommodate those with incomes between $5,000 and $8,000. (Kummerfeld, 1971, p. 459)

1. Equity Questions

This raises obvious questions of equity or distribution. Why should moderate income persons--and only a fraction of those eligible, at that--receive a government subsidy for their housing before poorer families have been served? Advocates respond that (1) building costs are so high that those who cannot afford to buy or rent the resulting housing within reasonable allocations of income should receive subsidy, and (2)

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[1] This is not to say, of course, that no public payments have been available; the data examined by Rein (1972) indicated that of all Public Assistance clients residing in metropolitan areas in 1966, about 11 percent were in public housing.

there are social advantages to having middle-income families located in the same projects with poorer families. One objection might be that new housing need not be assumed as the only source for adequate housing. (Isler, 1970, 1971; Frieden, 1963) However, there are also problems of both vertical and horizontal equity involved in the first position. Lacking sufficient funds to meet the housing needs of all those who are "housing poor," it seems inequitable to subsidize the relatively better off before the needs of all the relatively poorer are met, especially when the taxes of the poor may, in effect, be subsidizing those with higher incomes. Furthermore, unless enough subsidized units are available at all levels, equally eligible persons will be differently treated.[1]

On the matter of economic and class integration in housing, at least two responses can be made. First, the available funds would reach more of the poorest families if those better off paid their own way. Even in the case of subsidies tied to projects, some or most of the units could be rented to those who could pay the market rate; these are the persons who can afford to live in newly constructed housing anyway. Secondly, economic integration might better be achieved if the subsidy recipients were less identifiable than is the case when the subsidy is tied to a project and locational choice is restricted to the location of subsidized projects.

2. The Filtering Argument

Subsidies for moderate income families tied to newly constructed units might also be justified on the grounds that the so-called filtering process can be speeded up as a result of moves into subsidized housing by

[1] Concern with these equity questions, especially in view of the costs of overcoming them, is being reflected in Federal policy statements, such as the Third Annual Report on National Housing Goals. (U. S. President, 1971, pp. 23-24)

families just above the low-income families, thereby releasing those units.[1] The argument for subsidizing moderate income families would thus run that the same amount of funds could create effective demand for more new construction than if it were offered directly to poor families. Poorer families would ultimately benefit by greatly stimulated operation of filtering.

In an extension of some work on the turnover process in housing by Kristof (1965), the Institute for Social Research of the University of Michigan studied the moves resulting from 1,144 new units and found that an average of 3.5 moves result from the construction of one new unit. (Lansing et al., 1969) The chains of moves were found to be longer for higher priced new construction and for single-family houses. New apartment units renting for over $150 per month were found to generate an average of 3.9 moves, while those renting for under $150 per month generate an average of 2.4 units. By contrast, the new single-family units costing over $25,000 generated an average of 4.5 moves compared with 3.8 moves for those priced under $25,000. These are not unexpected results, since higher quality levels leave more possibilities for intermediate quality levels before an uninhabitable state is eventually reached in units vacated as a result of the new unit and since apartment units are more likely to end a vacancy chain as a result of undoubling (a new household

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[1] See Grigsby (1963, pp. 84-130) for a careful treatment of filtering concepts, and Lansing et al. (1969) and White (1971) for recent work on vacancy chains. I assume here that successful filtering would occur when value (price or rent) declines more rapidly than quality so that low-income families can obtain either higher quality and more space at the same price, or the same quality and space at a lower price than formerly. (Grigsby, 1963, p. 97) Note that filtering could occur without a move, for example, if the real price of rents declined while quality of services remained constant. A less demanding view of filtering would simply refer to used housing made available by turnover.

forms leaving another still residing in the unit they "vacate"). They do raise a question about the possible efficiency of filtering in the construction of moderate-income rental housing.

The Lansing et al. study also found that almost 10 percent of the moves in the chain from the new units included poor families (defined as those having an annual income less than the sum of $1,000 plus $500 per member of the household.)[1] However, the proportion of non-white families moving into new units comprised only 60 percent of their proportion in the population based on income and those participating in subsequent moves comprised only 70 percent of their share in the population based on income, thus revealing the workings of discrimination in the turnover process. It has been previously observed by Frieden (1968) that because the oldest, least desirable units tend to be concentrated in central cities, the turnover process still leaves black and poor families behind and concentrated in the least desirable areas even when it reaches them.

Unfortunately, the study by Lansing et al. did not obtain longitudinal data on prices, thus did not deal directly with the question of filtering. They did find that in most cases the prices paid by the families moving were higher than those for their previous quarters. Even if vacancy chains or chains of moves reach low-income persons, filtering is not necessarily working. The household locating housing in the used housing market presumably moves only because the new unit is an improvement but not necessarily at a reduction in market price of the new unit. Without a price reduction resulting from new construction, the turnover pro-

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[1] From 1,000 new units a total of 3,545 were made, 333 of which included poor households.

cess is thus simply instrumental in providing the same sort of opportunity for improvement or benefit which results from any other consumer purchase of a market commodity.

According to economist Lester Thurow (1971) there are several reasons to think that the filtering process won't work. For one thing, as the supply of housing increases the amount of housing demanded by middle- and upper-income groups rises. Existing families would occupy more space per person and more households would be established by children setting up households earlier and by the elderly maintaining their households longer. These are the trends that have actually been observed recently. Further, at any income level not only does a price reduction in housing lead to an increase in the quantity of housing demanded, but so does an increase in real income. Thus Thurow estimates that to achieve an 8 percent reduction in the price of housing would require a 20 percent increase in the quantity of housing, or approximately 12 million extra units over and above what is needed to house an already increasing population. Such a solution would obviously be very expensive, would benefit most those already better off, and would make the distribution of housing even more unequal than it now is. (Thurow, 1971, p. 445) In the arguments that filtering will ultimately benefit the poor even if the privileged are benefited more directly, we seem to have an example of the philosophy, "If the horses are fed, the birds will eat." (Origin unknown)

3. Employment and Location Policies

Other project subsidy arguments are that employment is stimulated and that government retains some control over location. But many other alternatives are open for stimulating employment, even within the construc-

tion sector. In principle the Federal role in subsidizing housing in new or rehabilitated units should enable public policy on location and tenant composition, for example, to be more directly controlled. There is some evidence that, unfortunately, the intermediaries between the origin of the subsidy and the actual implementation (in the form of Federal administration, builders, bankers, for example) may even thwart the interests and concerns of those eligible for subsidized housing. (Frieden, 1971) Furthermore the history of implementation of the project subsidy programs--from public housing to the 236 rental program--shows that the actual location of units has been seriously at odds with any definition of distribution of housing need, whether in terms of city/suburban location, rural/urban location, or regional distribution. The facts are that the actual distribution of units is at great variance with the distribution of those eligible for the several programs. (Kummerfeld, 1971; von Furstenberg, 1971; Cochran and Rucker, 1971) Even a subsidy system more oriented to those subsidized and allowing greater choice from the total housing market rather than being restricted to subsidized units could, of course, encounter the same problems of performance. The fundamental dysfunctions in the housing market for the poor and for rural families would likely plague a more direct subsidy system as well unless these dysfunctions were identified and corrective actions taken. Some of these dysfunctions and possible corrective actions have been mentioned above in the discussion on market failures.

4. The Political Context

Why then project subsidies? Several supporting reasons remain, the chief of which is political pragmatism. In principle the quality standards can be maintained at a reasonably high level in subsidized housing. Even in the complaints voiced about public housing and privately owned but subsidized rental housing no one argues that it was, when constructed, in worse condition than the lower end of the unsubsidized housing stock. There is a tendency to insist on quality levels that will assure units that will not be a political embarrassment because of appearance or short life. However, as Downs (1969) has argued, the limited subsidies voted by the Congress for direct housing aid generates fewer units under high standards than would be possible under a system of moderate quality standards.

Political support for project subsidies generally and for moderate-income groups in particular has, until the present, been stronger than for more direct, people-oriented subsidies or in general income transfers. Support for subsidies to moderate-income groups seems to lie in the fact that most voters are not poor and the support for redistribution among the non-poor is insufficient to deal directly with the problems of poverty and housing inadequacy of the poor. Not only are some elements of all the policy rationales mentioned earlier present in the political basis for housing programs, but some have argued that support for programs benefiting the poor is a matter of political coalitions, interest groups and categorical aid.

> There has always been strong resistance and lack of support for any form of shelter subsidy for low-income groups. This situation apparently is part of a more general pattern. All ideas for public assistance, whether for better housing

> or other purposes, that are based on income or means criteria alone seem to have been more widely opposed than programs in which the benefits were tied to some other variable. Aid for veterans, farmers, business, old people and others is legislated with relative ease even in the face of statistics indicating that a large proportion of the recipients in a particular group have no need for it, and in fact may be the beneficiaries of enormous windfall profits. (Grigsby, 1963, pp. 280-281)

Lawrence Friedman has noted that the Depression-era programs for the poor were actually programs for the "submerged middle class" who were really middle class in attitudes and life-style but only temporarily reduced to low incomes. The political support for starting the public housing he traces to this phenomenon. Friedman has observed that laws for the poor are unlikely to be generated unless (a) the poor are a majority and are politically represented, or (b) on balance, the legislation serves the interests of a class larger and broader than the poor. (Friedman, 1968) Housing programs reaching the middle class thus may reach broader support than those for the poor alone. Furthermore a project subsidy approach engenders the support of the building, real estate, and banking industries who stand to benefit. (Lilley, 1971a)

It is doubtless easier for those in Congress to feel that the housing problems of the country are being met head-on with a program directly providing housing. Further, the system for construction of new units seems more understandable and concrete than the complex and often obscure set of actors and actions involved in maintenance of the existing housing stock, in the delivery of housing services, and the workings of the market and financing institutions in this sphere. Finally, new or substantially rehabilitated housing units are discrete, countable evidence of government action, important in a society oriented to production. Thus an inefficient

program that provides some housing for the poor may seem better than an efficient program that can garner no Congressional support at all. (Downs, 1969)

5. The Future of Project Subsidies

Recent events are suggestive, though, that some flickering of support for alternative housing strategies may be emerging, partly as a reaction to some displeasure with the present project subsidy approaches. The set of papers prepared for the Subcommittee on Housing Panels of the House Banking and Currency Committee (U. S. House, 1971b), several of which have previously been cited, underscored the shortcomings of the project subsidy approach and laid a groundwork for regional, block grant approaches on the one hand and housing allowances on the other. Government concern with the mounting fixed costs of the interest subsidy programs may also slow down the project subsidy programs. The 1971 housing goals report of the Administration noted, "for the three fiscal years 1970 to 1972 (we) have already obligated the federal government to subsidy payments of perhaps $30 billion over the next 30 to 40 years. . . . By 1978 present estimates suggest that the federal government will be paying out at least $7.5 billion in subsidies. . . . Clearly the public interest demands that the federal government not stand impassively at the cash register and continue to pay whatever is necessary to feed runaway inflation of housing costs." (U. S. President, 1971, p. 22)

Neither have the project subsidy programs been helped by attention drawn to their failings. Added to the budgetary concerns are examples of builder exploitation, widespread difficulties in the management and operation of these projects, controversy over location of projects in suburbs, and a dim awareness that the tax losses in these projects are large.

(Herbers, 1972) An investigation into the 235 homeownership program conducted by Rep. Wright Patman, chairman of the House Banking and Currency Committee, revealed serious problems of exploitation of the home o purchasers in some cases, particularly in the cases in which existing houses with some moderate but inadequate rehabilitation were sold to unwary buyers. (U. S. House, 1970b) New 235 units have had problems, too; the Government Accounting Office recently found deficiencies in 25 percent of the units investigated. (Lilley, 1971b) In the case of the 236 rental program one dramatic exposure was the report that of the 40 projects, containing 4,300 units, in the Boston Rehabilitation Program (see Keyes, 1970), every project was in default on the mortgage payments as of early 1972. Twelve of the 40 projects were reported to be in assignment (the mortgagee, or lender, has assigned the mortgage to HUD) and 3 projects were in foreclosure (HUD takes title away from the project owner and assumes responsibility for management). (Hartnett, 1972) Location of subsidized rental projects outside of central cities often requires some action by the local municipality on zoning and draws the fire of those opposed to the potential tenants on economic or racial grounds. (Carnegie, 1971) The tax shelter attached to these projects also has a faintly scandalous air about it. (Hartnett and Thelen, 1971) Obviously a program which is supported because it produces highly visible results can also suffer because its failures are highly visible as well.

What are the prospects, then, for the project subsidy programs? First of all, the public housing program, for all its barbs and blows, continues apace with a shift in emphasis to Turnkey construction and the leasing program. The earlier project subsidy programs for rental housing under

private ownership were already in the process of being phased out and replaced by adaptions of the Section 236 rental program. Current legislative proposals would go further toward merging programs. But even in the face of the criticisms, the fiscal year 1972 projections for subsidized housing starts (including the public housing and homeownership programs) were 700,000--up from the estimated 1971 total of 550,000. (Lilley, 1971b) Nearly 200,000 of these units are expected to be 236 rental units. (Lilley, 1971a)

The National Association of Home Builders (NAHB) is credited by staff members of both the House and Senate committees with having pressured to insure that both the 235 and 236 programs would be acceptable to NAHB. These programs have since become a substantial source of business to NAHB members, who will not stand idly by while these programs are dismantled. (Lilley, 1971a, p. 439) According to a former aide to House Speaker McCormack, as reported in the National Journal,

> The curtain is going down on the old act, but you can't predict when the new one will start. Anybody who tries has got to keep [several] things in mind: The lobbies, and especially the homebuilders, can really drag their feet on any major change. There is no political mileage in this stuff--nothing to really grab Joe Public. We are doing what we do because we have to. You can run an intellectually bankrupt program almost forever, if no one is getting hurt; all you have to do is look at the farm program to see that. (Lilley, 1971b, p. 1543)

Because of inertia, because private business interests have a stake in their continuation, because some answer will be needed to the criticism that demand inflation of prices and rents will result from housing allowances (if they are tried) it seems quite possible that some form of privately owned but subsidized rental housing program will be part of the U. S. housing scene for the near future.

E. SUMMARY

This rather extended review of U. S. housing policy has hopefully indicated the complex of policy objectives and program options. It would seem necessary for there to be a mix of housing programs, some of which better satisfy certain objectives and some of which satisfy others. My argument is that whatever the need for other housing programs might be (including general income transfers, part of which would be spent on housing) there is likely to continue to be a place for subsidies attached to particular buildings, or project subsidies, because they satisfy some of the policy constraints better than more indirect or demand-oriented strategies.

General income transfers have been seen as one means for satisfying public objectives in housing, in that some of the income supplement would almost inevitably be spent on housing. The trouble is that not all of the income transfer would be spent on housing. Someday it may be shown that when all of the meritorious categories of consumption are accumulated (housing, food, health care, for example) the "slippage" in unintended expenditures by the recipients of a general income transfer system may be less than the accumulated administrative costs of in-kind subsidies in each of these areas. In any event, to the extent that control of housing expenditures lies in the hands of the dweller, some of the public objectives--such as improved exterior appearance of dwellings--may not be met.

Public actions to improve the workings of the housing market would seem likely to produce relatively small benefits for low-income people compared with the improvements which could be brought about more directly

either with housing supplied directly by public action or by direct income augmentation. Public actions to improve other elements of the housing bundle (such as neighborhood facilities or schools) could create improvements in the housing, more broadly construed, of those benefiting from these actions. But the trouble is that the benefit to renters is likely to be short-lived as the improved desirability of a neighborhood contributes to increased market value, sale prices, and ultimately rents.

Housing programs which attach subsidies to improvements in specific buildings and more particularly to either new construction or substantial rehabilitation, such as is the case with most current U. S. housing programs, got that way because of the production orientation of policymakers. Units produced are easy to count. Dwellers 'satisfied' are not easy to count. Despite the shortcomings of these project subsidies--in constraining locational choice, for example--they are likely, I believe, to remain an important component of U. S. housing policy, even if other strategies, such as housing allowances or general income maintenance programs, are implemented.

Because I believe project subsidy programs will remain an important component in the mix of housing programs, I think it worthwhile to examine more closely the nature of the total subsidy involved in these projects when, in fact, they rely for their development upon favorable tax treatment. In computing the cost to government of subsidized rental projects the "subsidy" involves not only the amounts directly appropriated, but also the Federal revenues foregone as a result of the favorable tax treatment. This does not mean that subsidized rental housing is the only kind of real estate which benefits from its treatment in the tax

laws, but it does mean that project subsidy programs such as Section 236 rental housing do rely upon the tax advantages, as will be shown. The particular relevance of the direct building experience described in this chapter will be seen in Chapter VII. There, government payment of the equity investment in replacing the tax-dependent investment value suggests that government could be the outright owner of 236 projects at less cost than at present.

Before getting specifically into a description of the way in which tax benefits are used in Section 236 projects, I wish to provide some background of tax theory and tax law which underlies the current treatment. The next chapter will deal with these issues first in a general way and then more specifically as they affect projects such as those under Section 236.

CHAPTER III: FEDERAL TAX POLICY IN HOUSING

Ideal principles are compromised in many ways, sometimes inadvertently and sometimes deliberately, in the real world of public finance. Our attention in this chapter is focused on the nature of non-neutrality of the tax system as regards real estate and subsidized rental housing in particular. This will require some review of the ideal of tax neutrality and review of the principles of income taxation and depreciation allowances. A brief history of the tax treatment of real estate will lead to a summary of the stage reached by the provisions of the Tax Reform Act of 1969, and the organizational forms used to benefit from tax allowances. The chapter ends with a brief summary of the debate about tax incentives.

A. TAX NEUTRALITY[1]

From the point of view of economic theory, the Federal system of taxes and public expenditures should implement public policy with respect to allocation, distribution and stability in the national economy. (Musgrave, 1959, Ch. 1) Adjustments are required in the allocation of resources achieved by the operation of the private market when free entry of private actors is precluded, when there are lumpy production factors, or when there are external economies (or diseconomies) which can only be altered by

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[1]The material in this section sets a framework of public finance which relies heavily upon the stance of Richard Musgrave (1959), but which is so greatly simplified here that it hardly qualifies as representative of his carefully worked out ideas. The monograph, Public Finance, by Otto Eckstein (1967) was also helpful and is a source for positions at variance with the one assumed in this section. The compilation edited by Edmund Phelps (1965) offers a useful range of opinions on the issues of the "proper" size and scope of government expenditures, as opposed to issues on "proper" taxation.

public action. Public policy on distribution deals with the basic issue of equity in economic terms; the most direct public tools for accomplishing the politically determined "proper" degree of equity are a combination of taxes and transfer payments. Personal incomes (and/or wealth) should be taxed according to ability to pay, while those deemed to have inadequate incomes should receive direct payments, according to this ideal system. Stability in the national economy is a public concern because fiscal policy (a combination of tax and expenditure policies) and monetary policy both affect the degree of unemployment and inflation. Except for these public purposes, tax policies should then be neutral. That is, the tax system should leave private production and consumption decisions unaffected by the tax system and the allocation of resources in the private sector should then remain undisturbed. A Treasury Department study for the Congress (1969) summarized the objectives of an ideal tax system: (1) tax burdens should be according to ability to pay, (2) the tax system should achieve horizontal and vertical equity (i.e., equity among those of similar economic circumstances and between those of different economic circumstances), (3) tax simplicity, (4) economic neutrality except where specific incentives are intended. In this chapter the concept of tax neutrality and of departures from that concept will be particularly relevant in the interaction between the Federal income tax and the tax rules on depreciation and capital gains.

B. INCOME TAX

1. Personal Income Tax[1]

Efforts in modern times to determine a "fair" system of taxation take as a starting point the notion expressed in 1776 by Adam Smith (1937) that one of the maxims of taxation should be equality, or contribution in proportion to ability by the subjects of a state. This concept breaks into two portions, vertical and horizontal equity. Horizontal equity is probably the easiest concept to settle, namely, that persons of similar circumstances should be treated equally by the tax system. (Simons, 1938) Vertical equity, or the question as to what differences there should be between the taxes paid by those of unequal income or wealth, is not so easily settled. The concept of vertical equity has in most cases relied upon Adam Smith's assumption that general taxes should be based on ability to pay. John Stuart Mill (1884) took Adam Smith's concept of vertical equity to mean equality of sacrifice, or that the burden of the tax should fall with equal force on all. Mill also was willing to distinguish between different types of income as deserving different kinds of treatment, as, for example, between profits, wages, and land rent. He also realized that even if the immediate burden of a tax was made equal, the possibility of shifting the burden of the tax to others made the ultimate incidence difficult to ascertain. Even in the case of a tax on personal income the net burden is not known until the distribution of benefits from public expenditures is also known. Pigou (1949) asserted that as a practical matter, the ultimate principle of taxation should be that of least aggregate sacrifice, implying

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[1]This material on the personal income tax is based largely on discussions by Richard Musgrave (1959, Ch. 5), Otto Eckstein (1967, Ch. 5), and a Joint Economic Committee report, The Federal Tax System (U. S. Congress, 1964, Ch. 2).

that government should take what it needs from the top income levels and work its way down. The trouble is that all of these notions require some accepted measurement of utility for comparisons amongst persons, which is as yet lacking. (Musgrave, 1959, Ch. 5) Furthermore the sacrifice arguments omit consideration of personal satisfaction derived from social welfare.

A corresponding principle of just taxation is the benefit principle, according to which persons should pay taxes according to benefits received. There are two major problems with this principle: the number of cases in which the benefits are directly measurable and attributable to individuals is very limited, and the principle assumes the equity of the pre-existing distribution of income and wealth. This principle has its primary application when the good or service rendered can easily be charged directly to the user, as in highway tolls or water and sewer "taxes." Since the focus of this work is upon income taxes and housing, the benefit principle has no particular relevance and will not be considered further.

Most western nations have moved beyond the proportional tax (a fixed percentage of income) thought to be just by Adam Smith to some form of progressive tax (in which the fraction of tax paid rises as income rises).[1] Whether a progressive income tax imposes equivalent burdens on all taxpayers is determined by the taxpayer's marginal utility for money (and, of course, whatever satisfactions it can obtain) as income rises. The burden

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[1] The rationale for progressive taxation put forth by the Report of the Canada Royal Commission on Taxation (1967) and some criticisms of the Commission's work by Blum (1967) can be found in a reader by Sander and Westfall (1970, pp. 218-233). For a discussion of theoretical possibilities for taxation on consumption (expenditures) advocated by Kaldor or on broader definitions of income (including change in net worth) advanced by Simons, see Goode (1964).

is maintained constant if as income rises the fraction of income taxed rises at just the rate with which marginal utility for money decreases. If a uniform tax rate schedule as a function of income is imposed on individuals differing in their marginal utility for money or, indeed, if a progressive rate schedule is imposed upon individuals whose marginal utility for money does not decrease as rapidly as the tax rises, then the burden of the tax is unequal. (Goode, 1964) Furthermore we still lack a reliable interpersonal measure of utility. Simons (1938) based his support of a progressive income tax on the grounds that incentive in the upper income ranges is largely non-economic, turning upon considerations such as power, prestige, and self-realization. In this case the problem of interpersonal comparisons of utility would be less crucial.

In The Uneasy Case for Progressive Taxation Blum and Kalven (1953) have summarized the arguments for and against the progressive income tax. Arguments against it include the following:

1. It complicates the positive law of taxation, because of the problem of interpersonal comparisons of utility and distortions in economic decisions.
2. It is politically irresponsible in that it is imposed on higher-income people by an oppressive lower-income majority out of their own self interest.
3. It dampens economic incentives, especially by discouraging additional work effort for lack of sufficient after-tax income. (Simons' observation about non-economic incentives not withstanding.)

Arguments for the progressive income tax include these:

1. It aids economic stability and the level of business activity by relieving inflationary pressures in times of rapidly rising incomes yet provides lower taxes (hence

more disposable or investable income) if income levels drop.

2. It is a logical rule for taxation if marginal utility for money declines as income increases.

3. It is in effect an equitable form of confiscation in that it follows the ability-to-pay principle and satisfies normative judgments regarding the social values of consumption expenditures by those of different income levels.

4. It lessens economic inequality, increases the economic equality and opportunity for children (who haven't had a chance to show whether they've "earned" economic rewards), and is a peaceful, nonrevolutionary means for redistribution of resources in society.

5. It is especially justifiable if some minimum, subsistence amount is exempted, although there are still arguments for the payment of some tax by everyone to ensure a sense of participation in and stake in the society.

As Blum and Kalven observe, the lack of a means for interpersonal utility comparisons leaves the above considerations about the progressive income tax resting on the great question of social ethics: To what extent are men responsible for their gifts and therefore deserving of reward? If the wealthy and the poor are not thus entirely because of their own efforts, but because of inheritance (or lack of it) and because of the context of a stable society and economy undergirded and protected by the state, then the tax system can rightly be used to reclaim some of the wealth for the functions of the state, including a redistribution to poorer citizens. In view of the differences in theoretical and philosophical arguments about the progressive personal income tax a political resolution is relied upon. We examine U. S. history on this question after a brief discussion about taxation of corporate income.

2. Corporate Income Tax

Imposition of an income tax upon corporations has been justified on the basis of the special privileges and benefits conferred upon corporations by the state, to which a corporation owes its life, rights, and powers. No one has suggested anything like personal utilities for money income on the part of corporations nor made serious arguments for progression in corporate tax rates. There have been issues raised, however, about the equity of flat tax rates on corporate profits in that once distributed as dividends, these same profits are subject to the personal income tax. Methods of integration of the corporate profits tax and the personal income tax have been proposed in order to restore the progressivity of the income tax. The volume by Pechman (1966, Ch. 5) provides a summary of these proposals. In this work the primary issues regarding tax incentives will be discussed in the context of the personal income tax because the incentives involve tax losses of most value to individual taxpayers. Much of the discussion, however, as in the magnitude of returns and costs to government in Chapters V through VII, is relevant for corporate owners of real estate as well as for individuals, particularly if the marginal tax bracket in which the losses are applied is at a rate of approximately 50 percent.

3. U. S. History

In the United States the progressive income tax has not always been supported. In fact, the country had been in existence for a century before there was any income tax at all. The following brief history compiled by the Joint Economic Committee (1964, pp. 14-16) serves to sketch the development of the income tax in the U. S.:

1861 -- First income tax enacted to help finance the Civil War.

1862 -- First income tax collections.

1872 -- First income tax act allowed to expire.

1894 -- Second income tax law enacted.

1895 -- Income tax law declared unconstitutional.

1909 -- Corporate excise tax levied on the net income of corporations.

1913 -- Ratification of the 16th Amendment to the Constitution established the basis for the modern income tax.

1913 -- An amendment to the Tariff Act of 1913 superseded the 1909 Corporate Excise Tax Act and provided for a tax at progressive rates on the income of individuals. Maximum rate for the individual income tax was 7 percent; corporate rate, 1 percent.

1918 -- Maximum tax rate on individual income raised to 77 percent; corporate income tax rate raised to 12 percent.

1930's -- Rates raised in an attempt to increase lagging revenues of the Depression.

1944-45 -- Individual income tax rates raised to all-time high, ranging from 23 to 94 percent, to finance World War II. The tax base was also broadened to cover most of the working population.

1945 -- Tax rates reduced following World War II.

1948 -- Income-splitting option for married couples filing joint returns allowed.

1950-51 -- Tax rates increased for the Korean "conflict."

1954 -- Tax rates reduced to pre-Korea levels; individual rates ranged from 20 to 91 percent, corporate rates 30 percent on the first $25,000 of net income and 52 percent on the excess over $25,000.

1964 -- Rates reduced: individual rates ranged 16 to 77 percent; corporate rates became 22 percent on first $25,000 and 50 percent on the excess.

1965 -- Rates further reduced (as a result of the Revenue Act of 1964): Individual rates ranged 14 to 70 percent; corporate rates became 22 and 48 percent.

The Federal tax structure had remained substantially the same as the version created by the Revenue Act of 1964 until the passage of the Tax Reform Act of 1969. (H.R. 13270, 91st Cong., Public Law 91-172) This Act made changes in the individual income tax in two key areas relevant to this discussion:

1. A minimum tax of 10 percent was imposed on tax sheltered income by adding Sections 56-58 to the Internal Revenue Code. "The minimum tax amounts to 10 percent of the sum of an individual's or corporation's tax preference income (i.e., income which would be taxed but which is not because of a tax preference) to the extent it exceeds $30,000 plus the regular income tax. . . ." (U. S. Congress, 1970b, p. 105) Items of tax preference of interest here include accelerated depreciation on real property and the excluded portion of capital gains.

2. The maximum tax on earned income was reduced from 70 percent to 50 percent by a section added to the Internal Revenue Code, Section 1348. (Income from investment, for example, is still taxed at a maximum rate of 70 percent.) The reason for establishing this limit was said to be a concern with the disincentive effect of high tax rates in the case of earned income. The other major reason advanced in a piece of "tax reform" legislation boggles the mind: "The Congress concluded that one of the most effective ways to prevent the use of tax avoidance devices is to reduce the incentive for engaging in such activities by reducing the high tax rates on earned income but only where tax avoidance

> devices generally are not used." (U. S. Congress, 1970b, p. 225) While income in excess of $30,000 which is sheltered under tax preferences is not eligible for the lower alternate maximum rate, the Congress obviously did not take the more direct route of removing the tax avoidance devices (relabeled "tax preferences") in the first place.

In summary, then, the Federal income tax has been in continuous effect only since 1913, has been closely associated with war financing, has retained the intention of progressivity in rates on personal incomes, but has steadily provided for reductions in the maximum rate since the high of 94 percent in 1945. Tax rates on corporate profits have remained at about 50 percent in recent decades. The nominal tax rates mentioned thus far are not necessarily, of course, the actual effective rates of tax. A dramatic exposition of the disparity between nominal and actual effective rates is found in the work of Goode (1964, p. 236), who showed that as of 1964 the maximum actual effective rates on personal income were just over 30 percent and, in fact, declined slightly for those with total incomes above about $100,000. The chief factor in this disparity for those with very high incomes is the tax treatment of capital gains, an area intimately related with that of depreciation in the case of real estate.

C. TAX FACTORS IN REAL ESTATE

1. Depreciation

a. Neutrality

Widespread use of depreciation deductions from taxable income in real estate is a relatively recent phenomenon. The notion of depreciation historically arose in connection with capital assets of various sorts (such

as machinery) used in production. (Meij, 1961) The fundamental idea is that a neutral tax system whould not penalize one whose income (or a corporation whose income) is derived from production depending heavily upon capital equipment. In one sense, part of the income from a current year should be regarded as a reserve for replacement of the machinery used (or whatever the capital assets are) whenever the equipment is obsolete or worn-out. Otherwise, the producer will be penalized by paying taxes on an exaggerated definition of income for the producing years of the capital asset, then will be forced to make a large cash outlay (or financing obligation of some sort, such as a loan or bond issue) for replacement at the end of the productive life of the capital asset. Note that the tax element would be biased in favor of the capital intensive producer if the total value of the capital asset were taken as an expense in the year of purchase (especially if purchased on borrowed funds). Such a possibility would allow other income to be offset, or sheltered, with the expense of the new capital asset; i.e., the full economic loss would be taken at the outset rather than over the years as it actually occurs.

Since a rational investment analysis takes into account the timing of cash flows, it makes a difference whether the deduction for the replacement cost can be made at the beginning, during the life of the producing equipment, or only at actual time of replacement. Furthermore, if depreciation allowances are too large or too small, then taxpayers will be favored or punished according to their tax rates. Assuming the objective of tax neutrality, Samuelson (1964, pp. 604-606) undertook to define "income" so as to make the present value of all assets independent of the tax rate to which each person is subject. He devised the following theorem:

> If and only if the true loss of economic value is permitted as a tax deductible depreciation expense will the discounted present value of a cash receipt stream be independent of the rate of tax.

According to Samuelson, it would then follow that

1. The fruits of a loan (interest payments) and interest deductions should be taxed at the same rate.
2. Appreciation in value ("capital" gain) should be taxed as ordinary income.
3. If a property on which depreciation has been taken is sold, the basis (value for tax purposes) of the property should be transferred to the new owner.
4. The only definition of depreciation relevant to the measurement of true money income is the putative decline in economic value, i.e., a reasonable estimate of the income producing ability of the particular asset.[1]

Tax law, however, has not consistently been made with neutrality as a basis, nor as a practical matter of administration can fine distinctions and individual decisions be made. In fact the primary focus in this work has to do with criticism of the deliberately non-neutral treatment of real estate. However, a discussion of the treatment of depreciation in U. S. tax law requires an understanding of the terminology used.

b. Depreciation Terminology

Certain key terms used in the definition and administration of depreciation allowances need to be introduced and defined at this point:

Basis -- the total value of the capital asset.[2]

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[1] Samuelson concludes that for rental property the depreciation should be a function of the net rental income before tax.

[2] In the case of real estate, the portion of value which is at- [cont.]

Adjusted basis -- the depreciable basis remaining after subtracting accumulated depreciation from the original basis.

Economic life -- the productive lifetime of an asset (assuming some minimum acceptable quality level of the output) established at purchase. At the end of its economic life the asset would have only salvage value.

Remaining life -- the remaining productive lifetime at some period during ownership.

Residual value -- the salvage value, if any, at the end of economic life.

Straight-line depreciation -- a claim of loss in value of the capital asset which is the same amount each year (the adjusted basis would be a straight line on a graph of adjusted basis against years of ownership). The constant amount of depreciation is the original basis less salvage value all divided by the economic life. The annual rate of depreciation is just the reciprocal of the economic life.

Declining balance depreciation -- a method of calculating the annual depreciation which permits an initial rate of depreciation faster than the straight-line rate, i.e., an "accelerated" rate of depreciation. For example, "double declining balance" (or 200 percent declining balance) depreciation would allow a rate of twice the straight-line rate to be applied to the adjusted basis to determine the amount of depreciation each year. Note, however, that the rate is applied to a declining balance (the adjusted

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[cont.] tributable to land is considered non-depreciable. It is common, of course, in urban areas for the value of real estate actually to appreciate in value, partly as a reflection of the increase in location value as a metropolitan area develops.

basis) each year, in contrast with the straight-line method, in which the rate is applied to the original basis. Thus the double-declining balance will produce an amount of depreciation of twice the straight-line amount for the first year, but in subsequent years the amount of depreciation under double-declining balance will be decreasing until, at some point, the amount of depreciation will actually be less than that under the straight-line method.[1]

Sum-of-the-years-digits depreciation -- another accelerated method of depreciation which is not quite as rapid as double-declining balance in the very early years but which soon provides for a larger annual amount of depreciation than double declining balance depreciation. The name of the method derives from the nature of the formula used to calculate the annual depreciation allowance, which is computed by applying a changing fraction to the cost of the property reduced by estimated salvage value. The denominator of the fraction is the sum of the numbers representing the successive years in the estimated life of the asset and the numerator is the number of years, including the present year, remaining in its useful life. The denominator, or sum-of-the-years-digits, can be computed directly without actually performing the sum as

$$D = (L + 1)L/2$$

where "D" indicates denominator and "L" indicates economic life.[2]

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[1] U. S. tax law, however, allows full depreciation to be claimed within the economic life of the asset by permitting a switch to straight-line depreciation. After the switch the depreciation allowance is based on the unrecovered cost of the asset and its remaining life at the time of change.

[2] The derivation of the formula for the sum-of-the-years-digits [cont.]

c. U. S. History

In the development of tax rules in the U. S., real estate has tended to be the beneficiary of rulings and legislation intended primarily for capital assets used by industry.[1] As a matter of administrative practicality it would be expected that rather broad categories of assets would be defined for purposes of depreciation allowances rather than to attempt to settle each case separately. The result has been a situation in which practices developed for general application have been used by holders of real estate, then later are found to result in favorable tax treatment of real estate, then still later found to be "necessary" or at least desirable incentives. A brief review of the history in the U. S. of the treatment of

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[cont.] denominator is straightforward. The denominator is defined as

$$D = L + (L - 1) + (L - 2) + \ldots + 2 + 1$$

or

$$D = L + (L - 1) + (L - 2) + \ldots + (L - L+2) + (L - L+1) + (L - L).$$

Upon rearranging to separate out $(L + 1)$ of the times which "L" occurs, we then can rewrite the denominator

$$D = (L + 1)L - (1 + 2 + \ldots + (L - 2) + (L - 1) + L) = (L + 1)L - D$$

or

$$2D = (L + 1)L; \quad D = (L + 1)L/2.$$

[1] The U. S. is not alone in providing favorable depreciation allowances in the tax system. According to a survey by Eckstein and Tanzi (1964, p. 230) most European countries now treat depreciation on a liberal basis. The United Kingdom does not allow declining balance universally but had been making use of investment allowances to create favorable deductions in the early years of an asset. More recently the British have changed from this investment credit system to a system of government grants for a period of years in exchange for industrial development complying with government policy on geographic location and type of investment. (Brannon, 1971, p. 176) In less developed countries taxation is often viewed as a device for the public sector to influence savings and capital investment on the premise that without favorable tax treatment some desired activities would not be undertaken. (Heller and Kauffman, 1963)

depreciation allowances may help to illustrate this sequence.[1]

Until 1934 claims of useful lives and methods of calculation of depreciation were left up to the taxpayer with the burden of disproving the validity of lifetime and depreciation methods being the responsibility of the Bureau of Internal Revenue. Agreements in 1934 between the House Committee on Ways and Means and the Treasury provided greater authorization to the Treasury to set allowable lifetimes of depreciable capital assets and provided a shift for the burden of proof to the taxpayer. By 1942 the Treasury had issued Bulletin "F" Tables of Useful Lives of Depreciable Property, which allowed a claim for useful life of 50 years for apartment buildings (as distinct from related equipment) or of 40 years for the life of a composite of apartment building and related equipment, such as heating, plumbing and electrical fixtures. Revenue Procedure 62-21, issued in 1962, reduced the allowable useful lives of many other assets, but not apartment buildings, although court decisions in specific, contested cases have allowed shorter lives to be successfully claimed (in the range of 33 years). (Slitor, 1968, p. 132)

Legislative precedents for the special 5-year "lifetime" concept as a means for allowing substantially accelerated depreciation as a specific tax incentive are found in the enactment in 1940 and 1950 of special 5-year amortization of certain defense production facilities connected with World War II and the Korean War. A similar 5-year write off was allowed in the late 1950's for grain storage facilities when it was felt that these facilities were in especially short supply. (U. S. Congress, 1964, p. 92)

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[1]Most of the following material, except where noted, is drawn from a recent study of the Federal tax system by the Joint Economic Committee. (U. S. Congress, 1964, Ch. 5)

Permissible methods for the calculation of depreciation rates (as contrasted with rules on lifetimes) were first defined for comprehensive categories of capital assets by the Revenue Act of 1954 and the Internal Revenue Code of 1954 which this legislation generated. In 1946, however, the Bureau of Internal Revenue had extended by administrative action the application of 150 percent declining balance as a depreciation method for buildings as an effort to assist construction of apartment buildings. The 150 percent declining balance method had hitherto only been allowed for group industrial equipment accounts under very specific conditions. (Slitor, 1968, p. 43) The Internal Revenue Code of 1954 provided for the first time that the double declining balance and sum-of-the-years-digits methods could be used for all newly constructed buildings, not just apartment buildings. The 150 percent declining balance method was made available for used buildings.

While housing as such had tended to be a peripheral category in most previous tax legislation, the Tax Reform Act of 1969 singled out housing as a special category for favorable treatment, chiefly by retaining favorable depreciation methods and recapture provisions (of which more presently) for housing while enacting more restrictive provisions for other types of real property.[1] The most dramatic real estate feature of the Tax Reform Act was the addition to the Internal Revenue Code of Section 167(k), which permits a 5-year amortization up to $15,000 per unit

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[1]The Tax Reform Act of 1969 was passed by the 91st Congress and became Public Law 91-172. Additional discussion of the provisions of the Act and reasons for change can be found in General Explanation of the Tax Reform Act of 1969 (U. S. Congress, 1970b). A helpful analysis of the real estate provisions has been made by Ritter and Sunley (1970), and an outline of the tax shelter advantages remaining or created by the Act is provided in an article by Grey (1971) and in the book, Urban Land Development, by David (1970).

of rehabilitation expenditures, provided at least $3,000 is spent within a two-year period and provided the units are rented to low-income families as defined by the Secretary of the Treasury. This offers a very accelerated depreciation schedule for rehabilitated housing, clearly far in excess of any decline in real economic value of this type of property, and, as will be seen, creates a very substantial tax incentive for investment in rehabilitated housing. This special provision is tentative, however, in that it applies only to rehabilitation completed before January 1975 unless extended by further legislation. For newly constructed housing the choice of double declining balance or sum-of-the-years-digits methods of depreciation was retained, while for other types of new buildings the depreciation method was limited to 150 percent declining balance. Used housing with a useful life of at least 20 years at acquisition was reduced from 150 percent to 125 percent declining balance depreciation, but other used property was reduced from 150 percent declining balance to straight-line depreciation, i.e., no acceleration in depreciation at all. Housing was thus consistently favored by the depreciation provisions of the Tax Reform Act of 1969.[1]

An important feature of the treatment of real property by U. S. tax law which was left unchanged by this most recent legislation is that the tax basis of a property can include the portion of the value of the property which is mortgaged. Since a Supreme Court decision in 1947, the Internal Revenue Service has allowed owners of mortgaged property to

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[1]The "rollover" provision added as Section 1039 to the Internal Revenue Code by the Tax Reform Act of 1969 as a means for encouraging sale of Federally subsidized rental housing to tenant groups is discussed separately in Chapter VIII.

depreciate not only their equity investment but the portion of costs covered by the mortgage loan as well.[1] If the real economic value (income generating capacity) of the property is not declining at the rate allowed by the tax laws for depreciation, then a very substantial tax advantage can result from this "leveraged" basis, since the entire value of the property can be depreciated by the owner, even though the owner has minimized his actual investment by obtaining a mortgage loan for most of the costs of development or purchase. Since most apartment buildings depreciate very little in market value for the first few decades after they are constructed, or even appreciate in value in some urban locations, the possibilities of accelerated depreciation and of a tax basis leveraged by the mortgage loan amount offer the opportunity to claim tax losses on apartment buildings far in excess of actual losses. (Taubman and Rasche, 1971, and McKee, 1971) We will examine the investment advantages of this situation for subsidized rental housing in a general way in the next chapter and then in some detail in the base case analysis of Chapter V.

Another feature of U. S. tax law favorable to housing which was left unchanged by the Tax Reform Act of 1969 is that certain construction expenses can be claimed as losses in the year incurred rather than capitalized

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[1] The Supreme Court decision, Crane v. Commissioner, 331 U. S. 1, has been interpreted to mean both that the mortgage loan amount can be included in the basis and that upon sale of the property the amount still outstanding on the mortgage loan is disregarded, for tax purposes, as an expense of sale. A suggestion of the legal attack which could be made on this "doctrine" has been made by Adams (1966) and a recommendation that the depreciable basis be limited to the actual investment has been made by the U. S. House Committee on Ways and Means (1956) and recently by McKee (1971). During the operation of mortgaged property the interest portion of mortgage payments is recognized as an expense for tax purposes, but not the principal repayment portion.

and depreciated over the useful life of the property.[1] Thus an investor who provides the necessary equity capital over and above the mortgage loan on a property to be developed is able to claim an immediate loss for tax purposes equal to the amounts spent during the construction period for interest on the construction loan, for real estate taxes, and for certain fees, such as those charged for mortgage processing. This feature of tax law thus acts like an instantaneous depreciation of part of the value of the building, even while it is still under construction. This feature obviously offers still another tax advantage for investment in new construction or in buildings with substantial rehabilitation.

2. Capital Gains Taxation[2]

a. Tax Equity Questions

On the other side of the coin from depreciation allowances is the question of taxation on the gain realized from a property when it is sold. To appreciate the handling of this tax question we shall have to consider briefly the concepts of capital assets and of "recapture" in the case of recovery at sale of accelerated depreciation allowances.

The U. S. tax system, in making special consideration for capital gains is attempting to make a conceptual distinction between so-called "capital" gains representing increased market value of investment property and normal income or profits from the sale of goods and services. The basic economic problem with capital gains is that while income from ordinary profits or wages and salaries is taxed annually as realized, gains

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[1] See Ritter and Sunley (1970, p. 45) for a criticism of this practice.

[2] I am indebted for most of the material discussed in the first part of this section to a 1964 staff study of the Joint Economic Committee, The Federal Tax System (U. S. Congress, 1964, Ch. 4).

on capital investments are taxable as a practical matter only when they are realized upon sale. Thus the timing of realization, unlike ordinary income, is subject to the discretion of the taxpayer, i.e., he can choose when to sell the capital asset. This feature tends to encourage the holding of an appreciated asset unless (1) a better alternate investment could be made with the net after-tax proceeds of sale, or (2) the currently held asset is expected to decline in market value in the future by an amount at least as much as the amount of tax which would be due upon sale. While there is some dispute as to the importance of this inhibition in capital mobility it is clear that the incentive to hold, rather than sell, a capital asset will increase with the rate of tax on capital gains.

As a matter of tax equity there are arguments for and against preferential treatment of capital gains:

1. A gains tax (of any kind) is a levy on capital; the owner of a capital asset cannot sell it and replace it with an equally valuable asset because the proceeds of sale are reduced by a gains tax. BUT, others would say, a tax on appreciation in capital value is legitimate, since it is just another form of income and since the tax is, after all, delayed until the gain is realized and not levied as market value changes.[1]

2. With the progressive income tax, the typical lump sum nature of proceeds from sale of a capital asset forces the taxpayer into a temporarily higher bracket and causes him to pay a higher tax than if the tax were paid at lower bracket

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[1]Appreciation in value of capital assets is included in classic definitions of income by Haig (1921, p. 7) as "the money value of the net accretion to one's economic power between two points of time" and by Simons (1938, p. 125) as "the algebraic sum of the individual's consumption and the change in value of his property rights during a period."

rates as changes in market value accrued. This argument might be accepted, but then the calculation for tax at sale should take into account the value to the taxpayer of the deferral of tax which he enjoys by not having to pay the tax as value changes.

3. Capital gains ought not to be taxed when they represent only general increases in prices (inflation). BUT this suggests that additional income tied to inflation should not be taxed; no one makes such arguments for ordinary income. Furthermore capital gains realizations are concentrated among those with the highest income, thus preferential treatment of capital gains subverts the ability-to-pay principle of progressive taxation.

b. U. S. History

In the absence of a clear weight of theoretical support of preferential treatment of capital gains, the empirical question remains, "How are capital gains treated in the U. S.?" Before 1922 capital assets were not explicitly defined in U. S. tax law. The Revenue Act of 1921 defined capital assets and provided that the full amount of gains and losses were to be taken into account in computing taxable income but that the taxpayer could elect a 12.5 percent alternate rate on capital gains. The Revenue Act of 1934 repealed the 12.5 percent alternate rate and set up a sliding scale from 30 to 100 percent of capital gains or losses to be taken into account in computing taxable income, depending upon the holding period. In 1938 depreciable property used in trade or business (like apartment buildings) was excluded from the capital asset category, but in the Revenue Act of 1942 special provisions were made to treat net gains on real property as capital gains. Taxpayers were offered the choice between including one-half of long-term capital gains (those occurring more

than six months after purchase) as ordinary income or of paying an alternate 25 percent tax on capital gains.

"Recapture" as a matter of tax law came into being as a consequence of the accelerated depreciation provisions of the Revenue Act of 1954. The 1954 provisions had made it possible to own a piece of property for a short while but write off a large fraction of its value (thereby avoiding tax on income from the property and possibly sheltering income from other sources with the excess losses) before sale and pay tax at capital gains rates on the difference between the adjusted basis and the sale price. To limit the use of this device to convert liability to ordinary income tax into capital gains taxes, the 1964 Revenue Act included Section 1250 in the Internal Revenue Code to "recapture" the lost income tax. Under Section 1250 all of the depreciation recovered at sale on a property owned 12 months or less became subject to tax at ordinary income rates. For property owned 12 to 20 months the "excessive" depreciation was taxed at ordinary income tax rates (to the extent that it was recovered in the sale price), where "excessive" depreciation means that taken in excess of straight-line depreciation. For each month over 20 months the percentage of excess depreciation taxed at ordinary income tax rates was reduced by one percent for each month held. Thus at the end of 120 months, or 10 years, none of the excess depreciation is taxed at ordinary income; all of the gain was treated as a capital gain. (In all these cases the excess depreciation was subject to recapture only if it is recovered in the proceeds of sale of the property.)

Recapture provisions were tightened for most property by the Tax Reform Act of 1969. Only limited dividend rental housing projects were allowed to retain the 120-month recapture rule. Other residential rental

property and rehabilitated property using the 5-year write off (Section 167(k)) were restricted to a 200-month rule; i.e., relief from recapture at a rate of 1 percent begins at the 100th month of ownership and extends to the 200th month. All other property (non-residential) became subject to full recapture, or tax at ordinary income rates on all of the excess depreciation recovered at sale. (Any additional gain is, of course, subject to tax at capital gains rates.) Thus housing was expressly favored, even if by omission, in both the depreciation and recapture provisions of the Tax Reform Act of 1969.

However, maximum capital gains taxes were raised by the Tax Reform Act of 1969. For individuals the first $50,000 of capital gains is taxed at the lesser of half the ordinary income tax rate or 25 percent. Capital gains over $50,000 are taxed at one-half the ordinary income tax rate, meaning that 70 percent bracket individuals will pay an effective maximum capital gains rate of 35 percent. Corporate capital gains are taxed at 30 percent.

For the sake of completeness it is necessary to mention here additional features of the treatment of capital gains in the U. S. tax system which favor housing investments. Capital gains taxation can be avoided or postponed through tax-free exchange (IRC, Section 1031), refinancing, involuntary conversion (IRC, Section 1033), and tax-free step-up of basis to fair market value for the heirs at the owner's death (IRC, Section 1014). (Slitor, 1968, pp. 141-144) Tax-free exchange involves exchanging a given property for one of greater cost; no tax is paid at this transaction because the gain on the first property is not realized. Or, after a period of time, the principal repayments on the mortgage loan can become substantial enough that the property can be refinanced with a loan

representing most of the value of the property; the cash withdrawn in the process is not taxed. Gains taxes are also avoided by reinvesting the gain on the receipt of insurance proceeds in the case of casualty loss or on the receipt of condemnation proceeds in the case of involuntary conversion of the property for public use. Finally, all of the depreciation which an owner has taken during his lifetime can be recouped by his heirs when they are allowed to step up the basis, tax free, to the fair market value; subsequent sale or depreciation starts from this stepped up basis.

3. Summary of Tax Incentives in Housing

The U. S. tax system has been seen to be anything but neutral to housing investments. Housing is favored by accelerated depreciation allowances, by the inclusion of mortgage loan amounts in the tax basis, and by favorable capital gains treatment. These provisions mean that large losses can be claimed early in the ownership period of a piece of property, even though the cash income generated by the property may be steady or even increasing. The upshot, then, is that excess losses are generated which may be used not only to shelter from tax the income from the property but also to offset income from other sources which would otherwise be subject to tax--the higher the tax bracket of the owner the greater these tax savings. The taxes thus avoided will at least be deferred, may never have to be paid at all, or at worst, will be paid at lower rates upon sale. Tax shelter has become an integral part of housing investment, particularly for rehabilitated housing and for limited dividend housing projects.

4. Organizational Forms for Tax Shelter Investment[1]

While most of the discussion in this work is addressed to the limited partnership syndicate form of ownership, some indication should be made of the range of possibilities for organizational forms for ownership in property generating tax shelter for the owner. The key factor in this type of investment is that of whether the tax losses can be applied to income from other sources.

a. Forms Other than Partnerships

The corporate form of ownership offers limited possibilities in regard to tax shelter, because the corporation itself must have sufficient income to use the tax losses generated by the real property; the tax losses cannot be passed through to shareholders in the corporation.[2] Furthermore the tax losses may be worth more to individuals subject to higher rates of tax than the 48 percent of corporations. While the tax on capital gains may be more favorable in some cases than for individuals, nevertheless a tax is paid (either at ordinary income rates or capital gains rates) before corporate income is distributed. Then, in the hands of the shareholder the distributed income is subject again to tax. But in the case of real estate ownership, the most critical problem is the inability of the corporate form to pass through to the shareholders the tax losses derived from depreciation allowances.

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[1]This material is drawn largely from work by Slitor (1968, pp. 147-154), an unpublished manuscript by Pat Clancy (1970), and the concise review of the limited partnership form by Schwartz (1971).

[2]This does not prevent a corporation from assuming the role of general partner in a limited partnership, especially after this mode of organization was given explicit Congressional approval in Title IX of the Housing and Urban Development Act of 1968 (P.L. 90-448, 82 Stat. 476) regarding National Housing Partnerships.

A special corporate form, the Subchapter S corporation , permits all tax consequences to be passed on to shareholders; but this option is available only if the corporation has no more than 20 percent of its gross receipts from rents and other forms of passive investment income and if it has a maximum of 10 shareholders. The Subchapter S form of organization thus has little practical application for real estate investment.

Real estate investment trusts (REIT's) were made possible by the Revenue Act of 1961 which added the "conduit" treatment for tax liability to qualified real estate investment trusts which had previously been limited to regulated investment companies (mutual funds). The trouble with a REIT is that, while cash distributions are not taxed until received by the shareholder (provided at least 90 percent of income is distributed), no pass through of excess losses to shareholders can be made. Moreover, the limitation of this form to trusts deriving at least 75 percent of income from real estate means that in most cases it would be impossible to generate enough cash income to make full use of the available depreciation on real property. REIT's therefore tend to rely more on a role as lender in real estate rather than as an equity holder.

b. Limited Partnerships

The particular advantage of the partnership form of business organization for real estate is that the partnership is not itself subject to tax and may pass through to the partners both income and the tax consequences of ownership. A <u>limited</u> partnership is even better suited to real estate ownership because it permits most of the partners to be passive, limited partners who are not subject to the unlimited liability usually associated with partnerships (as is the case of the general partner(s) in a limited partnership). Limited partnerships are set up under state

enabling laws which generally follow the Uniform Limited Partnership Act and provide for one or more general partners (called a joint venture if there are two or more general partners) who carry unlimited liability and are responsible for conducting the business of the partnership, while one or more limited partners are primarily passive investors with liability limited to the amount of their investment and with limited control over the operations of the partnership (chiefly such matters as sale of assets of the partnership or of partnership shares).

However, in order to enjoy the benefits of single level taxation (to the partners only and not to the partnership as well) the partnership must be organized and conducted so as not to be construed as an association with more attributes of a corporation than of a partnership, in which case the partnership would be taxed as a corporation and lose the pass-through benefit. Internal Revenue Regulations (Sections 301.7701-3(b) and 301.7701-2(a)(3)), indicate that such a partnership must have no more than two of the characteristics of a corporation, which are considered to be:

1. Centralized management -- This is usually the case in a limited partnership unless unusual arrangements, such as net lease by the partnership to a management agent, are made.

2. Continuity of life regardless of the death of individual members -- Provided the general partner is given the power to dissolve the partnership in the partnership agreement, IRS rulings have conceded that a partnership lacks continuity of life and therefore is not like a corporation in this regard.

3. Free transferability of interests -- It is fairly easy for a partnership to avoid having this characteristic simply by providing for consent by the other partners to the sale of a partnership share.

4. Liability limited to the assets of the enterprise -- Even though the limited partners do have limited liability, this corporate characteristic can be avoided provided the general partner is, in fact, liable to creditors. This means that the general partner must have some vulnerable assets outside the partnership and not just be acting as a "dummy" for the limited partners. It is possible for a corporation to act as a general partner. In this case the IRS has made rulings to the effect that no challenge will be made (hence the name "safe harbor rules") of the vulnerability to creditors of a corporation acting as a general partner provided the limited partners own no more than 20 percent of the corporation's stock and provided the corporation has sufficient assets. The asset (net worth) requirement is at least 15 percent of the total partnership capital (but not over $250,000) for a partnership in which less than $2,500,000 in capital is contributed by the partners and is at least 10 percent of the total partnership capital if the contributed capital is more than $2,500,000.

While this very general description is obviously not exhaustive of the legal possibilities and complications, it indicates that limited partnerships are usually able to avoid taxation at the partnership level, since the number of corporate characteristics can be limited to two.[1]

Limited partnerships used to develop government assisted housing are caught squarely between opposing government objectives regarding tax losses. Deductions in excess of income may be disallowed by the IRS on the strength of IRS regulations (Sections 183 and 704 of the Internal Revenue Code) and

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[1] More complete discussions of the legal questions and court decisions can be found in the M.I.T. Master's theses by Judelson (1971) and by Betnun (1971) as well as in such standard reference sources as the Commerce Clearing House Federal Tax Reporter under Sections 183 and 704 of the Internal Revenue Code.

of court decisions (particularly a 1960 Supreme Court decision, Knetsch v. U. S. 364 U.S. 361, 366), if the enterprise has as its main purpose the avoidance of Federal tax and is not engaged in for profit. Yet government assisted rental housing projects usually limit the dividends to a modest return on equity investment. However, the President's Committee on Urban Housing (1968, pp. 80-87, 238-239) explicitly pointed out the usefulness of the depreciation allowances in enhancing the investment attractiveness of government assisted housing. In direct response, the Housing and Urban Development Act of 1968 under Title IX "National Housing Partnerships" (P.L. 90-448, 82 Stat. 476) specifically encouraged the use of the limited partnership as a means of marketing tax losses. The report of the Senate Banking and Currency Committee described the workings of National Housing Partnerships:

> This title would authorize the creation of federally chartered, privately funded corporations to mobilize private investment and the application of business skills in the job of creating low and moderate income housing in substantial volume. . . . The partnership arrangement makes it possible to assure an adequate return to investors. . . . Assuming the member of the partnership is in a relatively high income tax bracket, his share of the depreciation losses, plus cash income from project operations would provide an after-tax return on his investment which would compare favorably with the return which most industrial firms realize on their equity capital. (U. S. Senate, 1969, p. 4085) (See also an article by Edgar Kaiser (1969), the chairman of the President's Committee.)

Then the Tax Reform Act of 1969 not only explicitly favored housing in its revision of depreciation and recapture rules, but a new and explicit tax incentive, the special five-year write off for rehabilitation expenditures on housing for low-income families, was added.[1]

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[1]The Tax Reform Act of 1969 also added special five-year write-off provisions for pollution control facilities, railroad rolling stock, [cont.]

Thus, while the tax avoidance challenge is probably not a serious problem, it is necessary nevertheless to include at least some suggestion of a "normal" profit motive in the partnership agreement.

A limited partnership enterprise usually distributes any dividends to partners in the same proportions in which the tax losses are assigned to partners. While it is possible for the limited partners to receive 100 percent of the profits and losses of the partnership, the usual arrangement is for the general partner--usually the developer--to retain a 5 percent interest. The developer receives additional compensation in the form of the excess of capital contributed by the limited partners over and above the cash costs of the project and often receives a residual interest in the proceeds of sale.[1] In this case the limited partners are usually first returned out of the before-tax proceeds of sale any of their original investment, if the original investment has not yet been recovered by the aggregate of dividend distributions. Then the developer/general partner and the limited partners divide 50-50 any remaining proceeds of sale. (It is up to each partner to pay whatever gains taxes may be due upon sale.) Such arrangements at least give the appearance of economic substance to the enterprise.

The importance of the real estate owner's claim to the value of the property covered by a mortgage loan has been mentioned previously in connection with the importance of depreciation allowances for real estate. In a limited partnership the partners share losses "to the extent of the

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[cont.] and coal mine safety equipment--all of which are more likely to be tied to a corporate enterprise than housing development.

[1]The way in which excess capital contributions arise is illustrated in Chapter IV at pp. 130-132 and is computed explicitly in Chapter V at pp. 216-222.

adjusted basis of each partner's interest in the partnership at the end of the partnership year in which such loss occurred." (Internal Revenue Code Section 704(d)) Now a partner's basis can be increased over his proportion of the capital contributed to the enterprise by his share of the liabilities of the partnership. (IRC, Section 752(a)) The trouble is that a mortgage loan secured by the property itself is not really a liability of the partnership nor of the individual partners. And a mortgage loan secured by the property is the usual pattern, since even the general partner(s) do not want to take on unreasonable personal liabilities in connection with the project. The trick, then, is to get the mortgage added to the basis of the limited partners as a pro rata share of the partnership liabilities. The Treasury provides a convenient artifice through a regulation allowing all partners to share a liability in their tax basis if none are personally liable for the obligation (the mortgage loan in this case): ". . . where none of the partners has any personal liability with respect to a partnership liability . . . then all partners, including limited partners, should be considered as sharing such liability . . . in the same proportion as they share the profits." (Treasury Reg. 1.752-1(e)) Thus loan agreements must be careful to force the lender to accept foreclosure as the only remedy available in the event of default on the mortgage.

One final mention of an area critical to the formation of a limited partnership: that of regulations regarding marketing of securities.[1] The marketing of limited partnership shares in a real estate syndication

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[1] Clancy (1970) and Judelson (1971, pp. 31-38) have more complete summaries than the one presented here.

(as this process is sometimes called) is treated by the Securities and Exchange Commission (SEC) as an offering of shares of a security unless it qualifies for a specific exemption under a section of the 1933 Securities Act. The exemptions available include:

1. The entire issue is offered within one state only, with none of the shares ever coming into the hands of an investor out of state. (Section 3(a)(11))
2. The issue offered is sufficiently small. This applies to offerings for under $50,000 or for those under $500,000 for which a filing with the regional SEC is required. (Section 3(b))
3. Offerings to investors not requiring the protection of the Securities Act. This usually means that the offering must be made to a small number (roughly 25) of sophisticated, well-informed investors who are sufficiently knowledgeable. Those who are wealthy enough to afford tax counsel and accounting services are considered "sufficiently knowledgeable." (Section 4(1))

Offerings not qualifying for one of these exemptions must go through the expensive and time-consuming procedure of registration with the SEC. In any event a syndication offering is still vulnerable to charges of fraud unless the offering circular makes a full disclosure of all of the potential risks of the project. (Federal Securities Act of 1934, Section 10(b)(5)) The grim tone typical of these offering brochures resulting from awareness of this danger is apparently not sufficient to dissuade investors in these ventures.

D. THE DEBATE ON TAX INCENTIVES

Both the definition of "tax incentive" and the value of tax incentives

as an instrument of public policy continue to be the subject of debate, as exemplified by a 1969 symposium on the subject conducted by the Tax Institute of America (1971). In that symposium Lester Thurow was quoted as defining a tax expenditure as any provision in tax law whose primary aim is not to achieve vertical or horizontal equity among taxpayers. (Tax Institute of America, 1971, p. 3) But such tax expenditures may be made to relieve disincentives in certain areas or may be unintended in the sense that taxpayers find ways of taking advantage of tax rules which were originally made for a different purpose. The term "incentive" I would prefer to reserve to those tax expenditures which are expressly adopted to induce private action in some area. (Surrey, 1971) The 1969 Tax Reform Act invented the term "tax preference" to refer to specified areas of tax law which were acknowledged to give special tax benefits, but which were not removed from the law. Bittker (1967) has indicated the difficulties involved in defining tax incentives and in achieving a truly comprehensive tax base which is without special privileges and benefits. But it is not necessary for present purposes to arrive at comprehensive definitions or principles. For one thing the Tax Reform Act of 1969 did give express approval to the tax favored areas in housing. For another, this work is directed specifically to the question of government subsidized rental housing and to the way in which the tax rules add to the investment value of this property--clearly a case of a tax incentive. A brief survey of the debate over tax incentives is undertaken, however, as part of the context of the particular questions addressed.[1]

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[1]The following discussion draws heavily upon the work of Surrey (1970a, 1970b, and 1971) and of Slitor (1968). In fact the general thrust of this work is in the same spirit and, in some senses, is responsive to [cont.]

Arguments against the use of tax devices as instruments of public policy designed to induce private action in some area include the following:

1. Erosion of the tax base -- Allowances for the avoidance of tax result in the necessity of raising tax revenues through higher tax rates generally than if the tax base were broader.

2. Inequity -- Since tax allowances as deductions against income are of most value to those in the highest income tax brackets, special tax benefits are limited to the wealthy and subvert the ability-to-pay principle of progressive income taxation.

3. Complexity -- Tax allowances increase the complexity of tax law, if the allowances are to be at all focused, and even then may provide new and unintended ways of avoiding taxes. Economic resources which could be more productive are devoted to tax planning on the part of taxpayers, individual and corporate.

4. Market distortions -- To the extent that an incentive is intended to shift market allocations, the market distortions induced by a tax allowance reflect public policy. But broad allowances may reward activities which were not intended to be favored and therefore produce unintended distortions.

5. Inefficiencies -- A windfall tax break may accrue to taxpayers whose behavior already coincides with that intended to be induced by the tax incentive. Furthermore, the

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[cont.] suggestions by Surrey (1970b) that the specific workings of tax incentives and means for replacing them with direct payments be developed in each of the major areas enjoying special tax treatment. Many of the objections to favorable depreciation allowances as a form of tax incentive have also been made by Eisner in a paper for the U. S. Committee on Ways and Means (1959, pp. 793-799).

amount of investment required of investors must be sufficiently low to attract all the investment capital desired and is therefore priced for investors in tax brackets below the maximum tax bracket. Thus government revenue losses are greater for very high tax bracket investors, since for a given amount of investment they obtain larger tax benefits. (Explicit examples of this are included in Chapter VII.)

6. Administrative and budgetary complication -- Both the administration of public policy and the budgetary decisions required to fund programs are divided between those acting directly and those acting indirectly through the tax mechanism. Thus in housing both the Department of Housing and Urban Development and the Internal Revenue Service are effectively involved in implementing housing policy, with HUD employing funds considered and voted by Congress and IRS administering a system of tax allowances in housing. Being imbedded on the revenue side of the Federal budget, tax incentives escape the periodic examination by Congress to which direct expenditure programs are subjected. With some expenditures made directly and some through foregone revenues, it is difficult to ascertain the priorities of various programs and segments of the economy. Congressman Wilbur Mills (1967) has referred to the tax incentive approach as "backdoor spending" in the sense that the funds, being diverted from entering the Treasury, are hidden from view. Some recent efforts have been made to work toward a more integrated concept of the Federal budget.[1]

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[1] See the original explanation of the tax expenditure budget concept by the Treasury (1969), the tax expenditure estimates in Surrey (1970a, 1970b) and his several references to other work in this area. A staff study for the Joint Economic Committee (U. S. Congress, 1972) has undertaken a review of Federal subsidies which counts some tax expenditures as subsidies.

7. Neglect of other alternatives -- If public policy calls for expenditure, attempting to make the allocation through a tax device tends to inhibit the search for direct expenditure methods.

8. Damage to the tax system -- Reliance upon tax devices encourages consideration of new ones, may result in incentives remaining in law long after their original purpose has been achieved or forgotten, and undermines taxpaying morale because the tax system appears to be a conglomeration of favors for other people. See Blum (1955) as well as Surrey (1970a).

What can be said <u>for</u> tax incentives?

1. Beneficial market interference -- Special tax allowances are a way of introducing economic influences for public purposes. Put another way, tax incentives provide a way for the private sector to undertake socially desirable activities which would otherwise be economically unfeasible. But, it is countered, this does not mean that a tax method is necessarily preferable to a direct expenditure to achieve the same economic effect, unless there are those to whom a dollar of tax avoidance is "worth" more than a dollar earned. (Tax Institute of America, 1971)

2. Private decision-making -- Tax incentives leave business decisions to private agents rather than having a government bureacracy intrude. (Does this suggest that the "public purpose" is ill-defined?) Presumably a conscious decision could be made to opt for minimal governmental supervision of a directly funded program, but this may be politically more difficult than with indirect incentives. But where very specific public objectives are intended by a tax incentive, substantial governmental involvement in certification that the activity is what was intended may be required anyway.

3. Permanence -- Because the magnitude of revenue losses is less obvious than that of directly budgeted expenditures and because tax laws undergo less frequent changes than program legislation and appropriation actions, an activity encouraged by a tax incentive can regard the incentive as more certain and reliable than a direct expenditure, which adds to business confidence and increases the likelihood that private parties will, in fact, undertake the actions intended.

4. Political pragmatism -- While perhaps lacking in economic rationality and suffering some inequities and inefficiencies, tax incentives represent a case of politics as the "art of the possible." It may be possible to accomplish an objective with a tax incentive that would be underfunded or rejected entirely if the Congress were forced to vote directly on the program and to appropriate funds for it. History shows that tax incentives "work."[1] With rare exceptions the testimony on the then proposed Tax Reform Act of 1969 hammered at the theme that the then existing tax incentives were essential to the operation of the real estate industry, and that the investment advantages of depreciation and capital gains treatment of real estate had been incorporated into the real

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[1] In the compendium, Tax Incentives and Capital Spending, edited by Gary Fromm (1971) a number of qualifications were made on the issue of how well the investment credit of 1962 and accelerated depreciation allowances for industrial equipment had "worked" to increase equipment spending. Bischoff found that the amount of equipment spending due to the investment tax credit was larger than the amount of the revenue losses, while both Bischoff and Coen found that for accelerated depreciation the private expenditures induced were less than half the present value of the revenue losses sustained. Arnold Harberger (Fromm, 1971, p. 264) noted that even these benefits may have been illusory, since their effect may have been primarily a shift of investment to tax-favored categories of business activity rather than a net increase in investment such as to increase overall business activity in the economy, as intended. In Chapter VII this work will explore these questions for subsidized rental housing.

> estate investment. (U. S. Senate, 1969, pp. 3925-4098, 4893-4962)

The tax incentives existing in real estate in general and in subsidized rental housing, in particular, are thus viewed as pragmatic ways in which to encourage housing investment and housing construction by increasing after-tax return. Arguments against replacement of the tax incentives by direct payments rely upon differences in assumptions about administrative complexity and about the likelihood of direct appropriations more than upon arguments based upon economic efficiency. Leon Keyserling (1971, p. 145), a former Chairman of the Council of Economic Advisors, expressed the argument this way:

> At a time when the imperative priority nature of housing and related aspects of urban rescue and renewal are so clear, and yet so grossly neglected, we cannot afford to mutilate the very limited stimuli available for these purposes, awaiting that unforeseeable future when we shall all be ready to spend immensely more federal funds directly.

On the other hand, the argument for preserving tax incentives weakens as the effective costs and modes of operation become better known. Slitor (1968, p. 99) summarized it, "Greater awareness of the Congress and the Executive Branch of the reality of tax concessions as hidden expenditures in the budgetary picture is weakening this aspect of the old strategic-tactical case for the tax approach.", and "It is difficult to legislate through the tax law any reasonable exactitude in the balance between remuneration and effort or contribution such as is called for in a procurement contract between government and business." (Slitor, 1968, p. 7) "As one examines the problems of suitable eligibility criteria for tax write-offs for low-income urban housing, this use of the tax system appears more and more to be essentially a complex and rather cumbersome

substitute for direct expenditures." (Slitor, 1968, p. 54)

In the succeeding chapters we shall examine the way in which the tax features enter as a development incentive in the Federal program for subsidized, privately owned rental housing (known as the 236 program after its section number in the National Housing Act) and the government costs involved in creating this tax incentive. The proposals for direct payments in Chapter VII are intended to show what advantages could result from a system of direct payments if they could be politically supported.

E. SUMMARY

In this chapter we have seen that the Federal tax system is anything but neutral with respect to real estate. The allowance for loss in value each year, the depreciation, is in excess of any reasonable measure of real decline in economic value. The tax that becomes due upon sale, moreover, can be paid at one-half the rate of tax on ordinary income, provided the property is held long enough. All real property enjoys these advantages, not just subsidized rental housing. We shall see in Chapters IV and V, however, that the availability of Federally insured financing for virtually all of the direct costs of the subsidized rental housing under Section 236 becomes a significant companion to the tax advantage, primarily because the owner of a property can claim the same depreciation losses regardless of whether a mortgage loan is held for 70 percent or for 99 percent of the value of the project.

Even at the level of the depreciation allowances, however, housing is favored over other kinds of property as a result of the Tax Reform Act of 1969. The priorities in depreciation allowances are as follows:

1. Rehabilitation expenditures on units to be rented to low-income families may be depreciated in a straight line over 5 years--a very fast write-off, or very substantial acceleration in depreciation.
2. New residential construction is allowed sum-of-the-years-digits depreciation or double (200 percent) declining balance depreciation.
3. New, non-residential real estate can be depreciated at 150 percent declining balance.
4. Used residential property can be depreciated at 125 percent declining balance.
5. Used, non-residential property can only be depreciated in a straight line over the normal economic life of the property.

The recapture rules which affect the portion of gain realized upon sale taxed at ordinary income tax rates were modified by the Tax Reform Act of 1969 to be more restrictive for all but Section 236 and the older Section 221(d)(3) rental housing programs under limited dividend sponsorship. That is, these projects begin to be relieved from the recapture provision at the 20th month and are entirely free of recapture by the 120th month (10 years), while for all other property the relief begins at the 100th month and is complete only at the 200th month (16-2/3 years).

While the debate on tax incentives reviewed in this chapter is far from concluded, the subsidized rental housing programs do benefit from favorable tax treatment. The underlying question of this work is whether the investment attractiveness of subsidized rental housing projects created by the favorable tax treatment could be replaced by more direct payments, since so much of the financing of the project is the responsibility

of government anyway. The next chapter offers, by way of simplified example, a view of the way in which government mortgage insurance, interest subsidy, and tax allowances converge for a Section 236 rental project. The high marginal tax rates of the graduated Federal income tax make tax shelter investments such as highly leveraged (high loan-to-value ratio) rental housing attractive to high income investors. Chapter IV seeks to illustrate the process of syndication as a way in which a developer of subsidized rental housing can literally capitalize upon the attractiveness of this investment to high income investors. As this chapter has shown, however, the process of syndicating such a project by forming a limited partnership is quite complex and requires careful steering through the treacherous shoals of tax law, IRS regulations, SEC restrictions and court rulings.

CHAPTER IV: MULTIFAMILY RENTAL HOUSING UNDER SECTION 236

When income tax allowances are intended to encourage investment for some purpose, it is important to understand just how the capture of capital works. The tax shelter provided by accelerated depreciation allowances and favorable capital gains treatment has become a primary source for generating development funds for low- and moderate-income rental housing, especially under the program for mortgage insurance and interest subsidy established under Section 236 by the Housing and Urban Development Act of 1968. The limited dividend allowed in these projects is too small to attract investment interest. But the magnitude of the tax losses generated (especially by qualifying rehabilitation expenditures) has made it possible for developers to sell ownership claims to these losses to high tax-bracket investors for amounts equivalent to between 15 and 25 percent of the mortgage amount, as shown in Chapter V. This chapter will include a brief explanation of the workings of the Section 236 program, a simplified example of the way in which tax shelter works, and discussion of the implications for the private sector and for the government of the tax incentive device for development of housing under Section 236. Detailed examples on tax shelter and 236 housing are left for Chapter V.

A. MORTGAGE INSURANCE AND INTEREST SUBSIDY

The rental housing program established under Section 236 of the National Housing Act by the Housing and Urban Development Act of 1968 basically offers insurance for a mortgage covering most of the costs of

development for either new construction or rehabilitation and also annual payments to the lender for part of the mortgage payment for the project. (P.L. 90-448, 82 Stat. 476, 478) Because of this Federal assistance with the mortgage payments, the owner is required to reduce the rents commensurately. Since this Federal payment can be as much as the difference between the mortgage payment at the FHA-established market interest rate and the mortgage payment for a 1 percent mortgage, a substantial rent reduction is possible and virtually assures the developer of nearly full occupancy by eligible tenants.

The mortgage amount for which Federal insurance is available depends upon the form of the sponsor, whether limited dividend or non-profit. For a limited-dividend sponsor the mortgage amount is 90 percent of "total replacement cost," where total costs include a "builder's and sponsor's profit and risk allowance" (BSPRA) of 10 percent of all other allowable costs (except land costs). The result is that a mortgage of approximately 99 percent of actual costs (exclusive of the BSPRA) is possible.[1]

Costs not recognized by the Federal Housing Administration in the mortgage calculation--such as excessive fees or construction loan interest over the FHA market rate and the salaries and overhead expenses of the developer/builder and his staff--often increase the effective cash investment to approximately 3 percent. The actual cash requirements may differ from 3 percent in a particular project, of course, depending on cost over-

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[1] Let actual total costs be denoted COST and assume land costs are 5 percent of total costs. The total replacement cost for FHA mortgage calculations is COST + 0.1 (COST - .05 COST) = 1.095 COST. The mortgage is 90 percent of total replacement costs, or 0.9 x 1.095 COST = 0.9855 COST. If actual costs were $1,000,000, the mortgage amount would be 90 percent of the sum of ($1,000,000 plus a BSPRA of $95,000) or $985,500.

runs not accepted by the FHA, organizational expenses, relocation expenses in the case of rehabilitation, the cost of working capital, and land costs. Furthermore, if the developer and the building contractor do not have an "identity of interest," then the BSPRA allowed is reduced by the amount of the builder's profit fee. In such a case, the mortgage amount is unaffected, but the builder's profit becomes an additional cash expense to the developer, who, in turn, claims full ownership. The examples in this chapter consider only the identity-of-interest case for simplicity.

On the operating side of the project, a 6 percent annual dividend is included in the rents. For purposes of computing the allowed dividend, the owner is deemed to have an equity of 10 percent of total replacement costs invested in the project, even though the actual investment may be much smaller.[1] Another area of potential profit from the project in operation is the management fee, which is typically 5 percent of the rent. This depends entirely on the scale and efficiency of the management, however, and is considered as a fee for services, not a source of profit. All other elements of rent must represent actual costs (or reserves for replacement); thus the dividend, if earned, is the only remaining source of before-tax profit. While the owner of a 236 project is allowed to include an allowance for the dividend in setting up rents, there is no assurance that the dividend will, in fact, be earned every year. Unless HUD approval can be obtained for rent increases to cover increased operat-

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[1] A non-profit sponsor receives no dividend from the rents but obtains a mortgage of 100 percent of total costs, including an allowance for sponsor expenses and a fee for a housing consultant. There is no sponsor's profit and risk allowance, of course, in the mortgage computation for a non-profit sponsor. Since non-profit sponsors pay no income taxes and are unable to use the depreciation, attention is devoted entirely to the limited dividend sponsor in the remaining discussion. Community-based sponsors may, of course, also be limited dividend sponsors as discussed in Chapter VIII.

ing expenses, portions of the rent which would have gone toward the dividend may have to be used for operating expenses, especially since approved rent increases tend to lag increases in operating expenses. Even if the maximum dividend is actually earned every year, however, the cash dividend is small compared with the tax savings which result from the depreciation allowances.

B. TAX SHELTER SYNDICATION

Because the 6 percent dividend allowed in rental projects such as those under Section 236 is not only small but not guaranteed, there would be little development occurring under profit-motivated sponsorship except for the tax advantages. Briefly, the advantages lie in the allowance for accelerated depreciation deductions and for payment of tax at capital gains rates on the gain realized at the sale of a project. The large losses which can be claimed for tax purposes as a result of the depreciation allowances have value to taxpayers in high tax brackets because the losses can shelter some of their taxable income from tax.[1] Thus the tax laws permit large paper losses (non-cash expenses) to be claimed for real property in the form of depreciation that owner/investors can apply to offset ordinary income on which Federal income tax would otherwise be due.[2] The result is that a large part of the after-tax return from such projects is in the

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[1] For property rented to low-income persons the Tax Reform Act of 1969 permits the rehabilitation expenditures to be written off (depreciated) over a 5-year period. New construction is eligible for accelerated depreciation but at rates slower than for rehabilitation. (See Chapter III.)

[2] The term "paper loss" is used to indicate that the loss taken in depreciation for tax purposes is not a cash expense but a loss existing only on paper (the tax forms).

form of tax savings, that is, income which would have been used to pay Federal income tax had the owner not been able to claim the depreciation. In order to gain an appreciation for the importance of accelerated depreciation in the returns available from a Section 236 rental project, we examine a greatly simplified example. More exact computations are discussed in the next chapter.

1. Investment Criteria

Fundamental requirements for undertaking development of rental housing include: (1) marketability of the units, with respect to location, type and level of rent, (2) sufficient net income from rents after payment of operating expenses to cover mortgage payments and have left sufficient after-tax profit for the owner, (3) willingness of a lender of mortgage funds to take a mortgage for the property for a high fraction of the actual total development costs. A 236 project suitably located would satisfy the marketability and mortgage requirements, but the cash dividend alone would not provide sufficient profit. A greatly simplified example may help to illustrate the developer's perspective and to show why the tax aspects of a 236 project are essential for its profitability to the developer. We begin by neglecting the role of depreciation allowances.

A typical 236 project of 100 units might have the following costs:

Total direct costs	$2,020,202
Builder's and Sponsor's Profit and Risk Allowance (10%)	202,020
Total replacement costs	$2,222,222
Mortgage amount (90%) (rounded)	$2,000,000
Builder/developer's cash investment (3%)	$ 60,000

In this project the annual dividend is 6 percent of an assumed equity of

$222,222 (10 percent of total replacement costs) or $13,333. The upper limit on before-tax profit, or return, is thus actually 22 percent on the actual cash investment ($13,333/$60,000). Neglecting depreciation for the moment and assuming the developer is in the 50 percent income tax bracket, his after-tax return is only 11 percent.[1] It may be less, of course, since the dividend is not guaranteed. Since this return is not competitive with the returns available from conventional real estate, we turn now to the role of allowances for accelerated depreciation as a device for increasing investment incentive.[2]

2. Depreciation Allowances

a. Straight-line Depreciation

If, in addition to the dividend, depreciation of the value of the building is allowed at a steady rate (straight-line depreciation) over the economic life of the building, a paper loss for tax purposes of $100,000 per year is created. This assumes that the value of the building is

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[1] Actually, with no depreciation, taxable income amounts to gross rents less all cash expenses except the principal repayment portion of the mortgage payment. The owner thus would have to pay tax on the principal repayment as well as the cash dividend, leaving him with an after-tax cash return of even less than 11 percent.

It could also be argued that the builder and developer could have earned a straight fee of 10 percent for their services if they had not chosen to own this project. In this case their "sweat equity," or imputed equity, would be 10 percent before tax and 5 percent after tax (for a builder/developer in the 50 percent marginal income tax bracket). The total equity would then be the 5 percent after-tax sweat equity plus the cash expense, $141,111 in this example. The after-tax rate of return from the project dividend would then be only about 4-3/4 percent--again hardly attractive.

[2] A study on tax considerations in multi-family housing investments conducted for HUD by the accounting firm of Touche Ross and Co. (1971, Vol. II) found that before-tax returns for a wide variety of multi-family rental housing ranged from 12.5 to 20 percent, while after-tax returns ranged from about 25 to 35 percent.

$2,000,000 and that its economic life is 20 years.[1] The taxable income from real estate operation is the sum of the cash profit left after all costs (including mortgage interest but not mortgage principal repayments) and the depreciation. The $100,000 paper loss more than offsets the taxable income from the cash dividend and mortgage principal repayments, at least in the early years, when the mortgage payment is mostly interest, and no income tax is due. The dividend from the rents is converted by the allowance of straight-line depreciation into at least a 22 percent after-tax return in our simplified example, and this type of investment begins to look more attractive.

b. Accelerated Depreciation

If, in addition, the property is eligible for accelerated forms of depreciation, which allow more annual depreciation to be taken in the early years than the normal straight-line rate, additional paper losses are created. (See Chapter III for a list of the available forms of accelerated depreciation.) New residential construction and qualifying rehabilitation expenditures are eligible for this favorable tax treatment. If our example is a rehabilitation project, it is eligible for a $400,000 paper loss in the first year rather than the $100,000 straight-line depreciation allowance above. Since the income from the property itself could already have been sheltered from tax under straight-line depreciation, the allowance for accelerated depreciation creates excess paper losses which have value as a tax shelter for persons with taxable incomes

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[1] A 20-year life is typical of the economic life which might be claimed for a used or rehabilitated building. An economic life of 40 years for a newly constructed building would generate only $50,000 of annual depreciation in this example, but would have the same type of benefit for after-tax return.

from other sources. The higher the income (hence the higher the tax bracket) of the person claiming this loss, the greater the value of the tax savings. For example, a $50,000 paper loss used by a person with $50,000 of income in the 50 percent tax bracket saves him $25,000 in taxes, while for a person in the 70 percent tax bracket use of the loss saves $35,000 in taxes. (I refer here to average marginal bracket in the range of income sheltered; see the sample calculation at p. 169.)

3. Taxes on Gain from Sale

To the extent that the sale price (less expenses of sale) exceeds the depreciated value of a building, the owner is subject to tax on the gain. Because it is recognized that the allowance of accelerated depreciation is an inducement to investment and generates returns in the form of tax savings, tax law provides (as discussed above at pp. 101-102). that for a period of time the amount of gain realized that is attributable to the excess of accelerated depreciation over what straight-line depreciation would have been is to be taxed, or recaptured, at ordinary income rates. This obviously encourages holding the property to diminish taxes at sale based on ordinary income tax rates.

It should be noted that even after the recapture period is over, taxes at capital gains rates are still due on the difference between the sale price and the depreciated value of the property. Expiration of the recapture period simply means that there is no portion of the gain taxed at ordinary income tax rates; all of the gain is taxed at capital gains rates. The taxes at sale thus reduce the net benefit from the depreciation allowances. Investment value has been enhanced in two ways, however: (1) the tax shelter defers payment of income taxes, and (2) to the extent that these taxes are eventually converted to capital gains taxes, the tax has

been not only deferred but converted to a lower value.

In the example at hand, consider the effect of the gains tax for a sale made in the 20th operating year for a mortgage balance of $1,660,000.[1] Neglecting the value of the land and building shell, the rehabilitated property has been fully depreciated and, because the recapture period has expired, tax is due only at capital gains rate on the full amount of the sale. That is, the taxable gain is the difference between the sale price (we assume the sale price is just the outstanding mortgage balance) and the adjusted basis, which, in this case, is zero. Leaving the complications of the minimum tax for the detailed calculations of Chapter V, the gains tax for this example is 25 percent of $1,660,000, or $415,000.

4. Combined Elements of a 236 Project

Developers of rental property subject to limited dividends restrictions (such as the Federal 236 program or some state-sponsored programs) find that the profitability of these projects is sufficiently enhanced by the favorable tax treatment that development is economically advantageous, frustrations and paper-work requirements of government agencies notwithstanding. For the developer who is not himself in a position to use the tax losses generated by these projects, a limited partnership is often formed in which the developer acts as general partner, and the limited partners are passive investors to whom the laws allow the tax losses to be passed. This approach to organizing a real estate venture

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[1] A 20-year holding period not only increases the investment value by deferring the time of payment of the capital gains tax but also represents the period during which a 236 project may not be sold without HUD approval. Choosing a sale price equal to the amount of the outstanding balance on the mortgage loan is typical of the assumptions made in marketing investment shares in 236 projects as a conservative assumption.

is referred to as a form of syndication. The advantage for the developer of a Section 236 project is that it allows him to raise much more money from the limited partner investors than is required to develop the project over and above the mortgage loan.

Now we have developed the essentials for a tax shelter investment. A limited partner/investor (actually a group of investors, in most cases) wishing to shelter income in the 50 percent tax bracket will typically be willing to invest a total of $500,000 in exchange for the $400,000 loss for each of the first five years which can be claimed as a result of ownership of the project subject to a capital gains tax of $415,000 when the project is sold for the mortgage balance in the 20th operating year. The developer receiving the investment contributions of the limited partners is obligated to use only as much of the capital as is required to finance the project. The remainder he can keep.

Figure IV-1 indicates schematically the elements of the tax incentive for development of this simplified Section 236 rehabilitation project. To cover costs and raise his fee, the developer relies both upon a mortgage commitment ($2,000,000) and capital contributions from investors ($500,000) who invest in anticipation of obtaining substantial paper losses as shelter for their income, or in this case approximately $400,000 a year in tax shelter (worth $200,000 a year in tax saving) for five years and eventual sale in the 20th operating year. If $60,000 represents the developer's cash costs and $100,000 the fee for the tax shelter broker, then the developer retains a "fee" of $340,000, or an amount equivalent to 17 percent of the mortgage (though it is clearly <u>in addition to</u> mortgage proceeds). Outside of the administrative and mortgage insurance role of the FHA plus the possibility of a small annual dividend, all of the in-

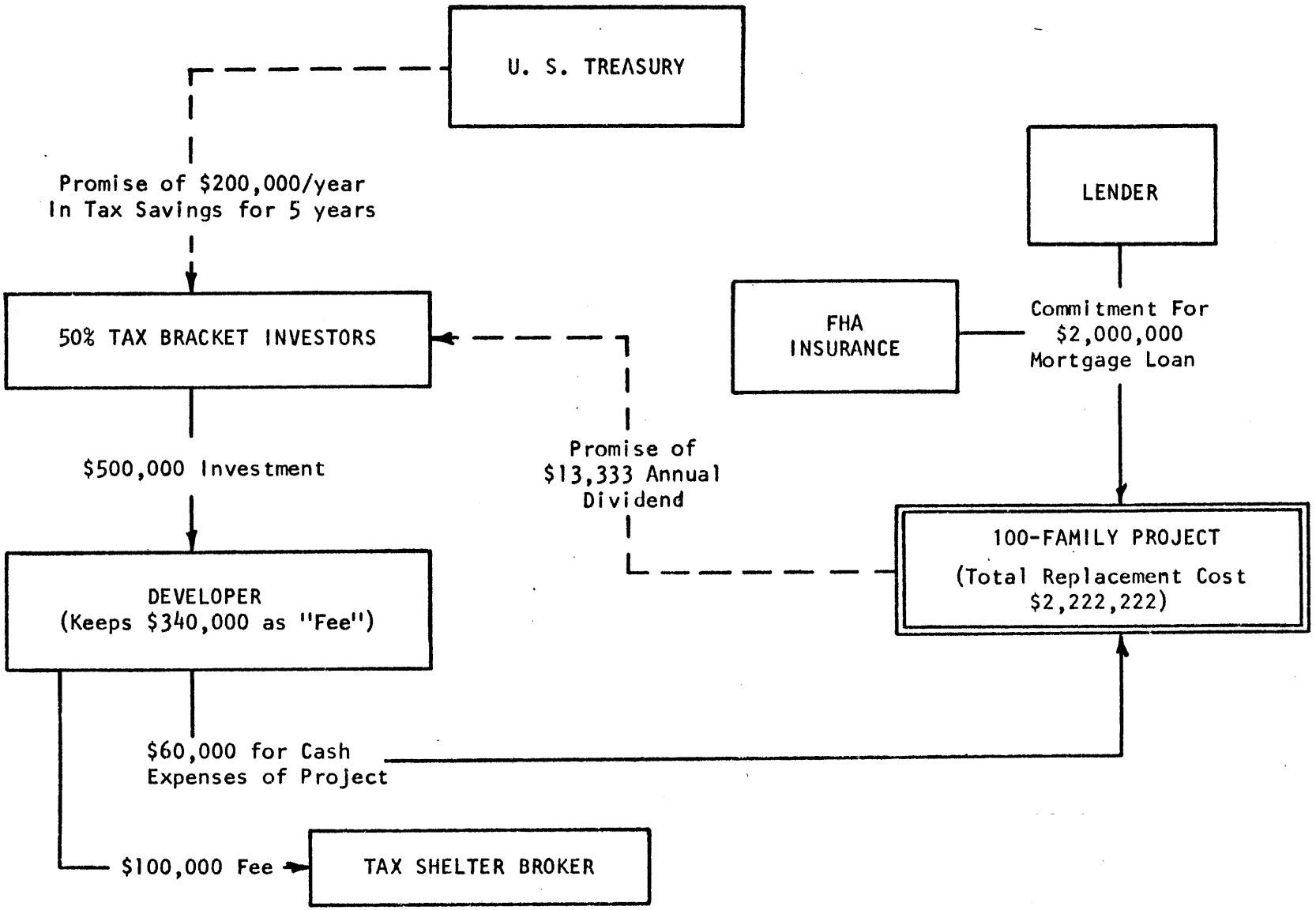

FIGURE IV-1: REHABILITATION TAX INCENTIVE FOR DEVELOPMENT

centive for development has come from the promise of depreciation allowances to create tax shelter.

Figure IV-2 indicates how the tax incentive works during the operating period of the property. The 50 percent bracket investors receive $200,000 a year for five years in tax savings from the Treasury and $13,333 a year (for the life of the project) in dividends from tenant rent payments. The tenant subsidy is approximately $100,000 per year for 40 years to make up the difference between the tenants' payments via rents on a one percent interest rate mortgage and an assumed market rate of 7-1/2 percent.

C. POLICY AND ADMINISTRATIVE ISSUES

As the diagrams just introduced illustrate, use of the tax incentive device causes at least two extraneous parties to enter the system, namely the tax shelter broker and the high bracket investors. Had the returns from the property not been tied to tax savings, the investor need not have become interested solely on the basis of his tax bracket. In fact the developer might have retained ownership on the basis of operating for profit the property in question. On the other hand, the investors do serve the purpose of screening the developer because they scrutinize the capabilities and integrity of the developer before entrusting their funds to the project. The Department of Housing and Urban Development has the administrative responsibility for processing the application for mortgage insurance and interest subsidy and for periodic reviews of the operating performance of the project. But the project cannot be successfully developed and operated without the participation of the Internal Revenue Service. The IRS may be called upon to rule privately on the tax status

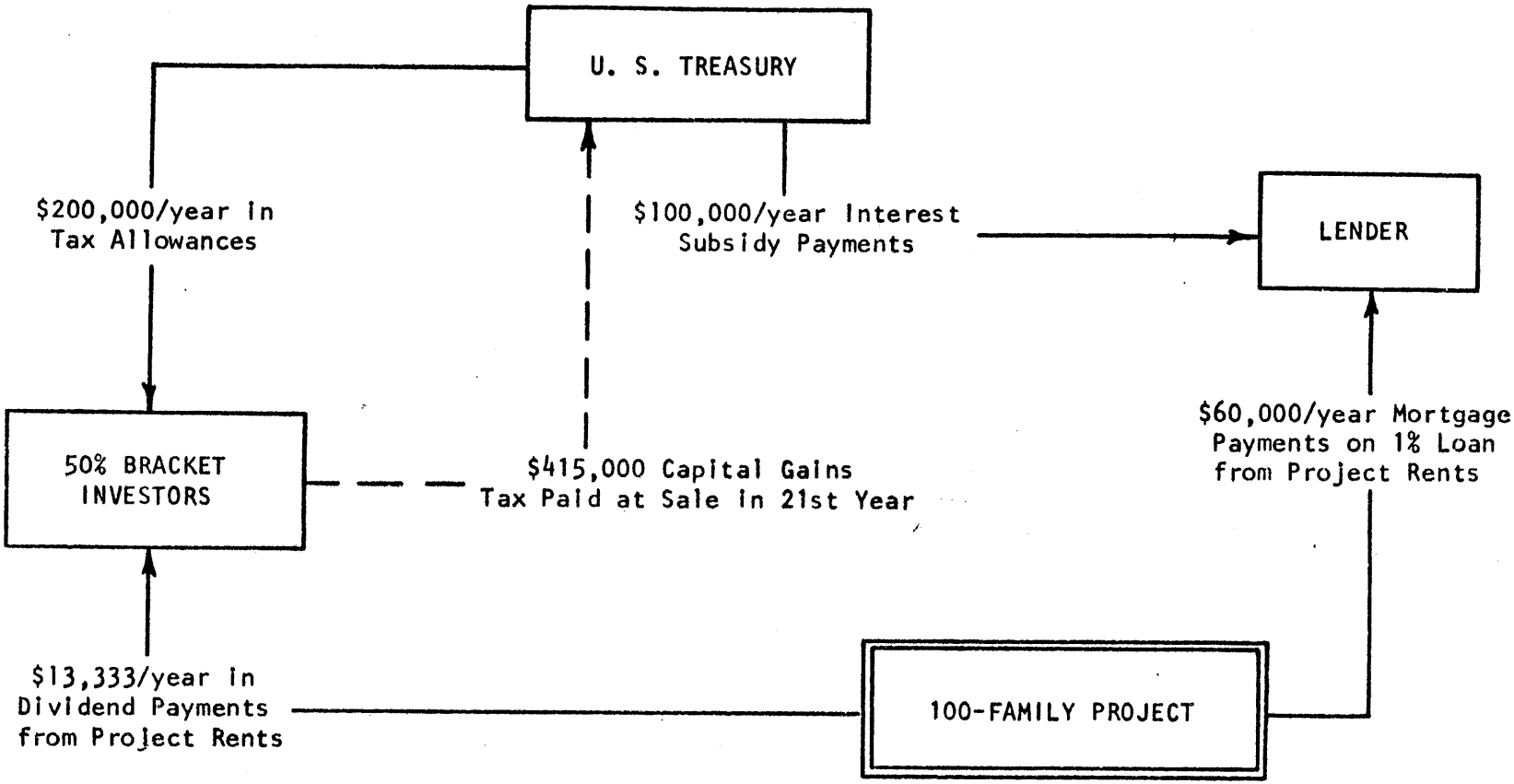

FIGURE IV-2: REHABILITATION TAX INCENTIVE DURING OPERATION

of a proposed syndication as a way to assure the investors that the prospective tax losses will be allowed by the IRS when eventually claimed. Further, the IRS may be a critical agency in the year-to-year operation of a project which has specific public policy constraints attached to it, such as is the case for a project claiming the special 5-year write-off of rehabilitation expenditures. The IRS must agree that the taxpayer's depreciation claim is, in fact, attached to "qualifying" rehabilitation expenditures and that the unit remains eligible for the special depreciation, which requires that it be "held for occupancy on a rental basis by families and individuals of low or moderate income, as determined by the Secretary (of the Treasury) or his delegate in a manner consistent with the policies of the Housing and Urban Development Act of 1968." (Internal Revenue Code, Section 167(k))

A suggestion of the administrative difficulties of this system of bifocal incentives is found in the efforts of the IRS to establish regulations for the 5-year write-off for qualifying rehabilitation expenditures. The tentative IRS regulations published August 4, 1970 set the eligible income level for tenants at 150 percent of public housing admission, with the apparent intent that this would be well above the 135 percent of public housing admission income used in Section 236 housing. (U. S. Treasury, 1970) However, HUD makes a number of adjustments in gross income which were neglected in the proposed IRS regulation, and the Section 236 program also allows a number of projects to rent under "exception" income limits based on 90 percent of 221(d)(3) income limits for rental projects financed under Section 221(d)(3) of the National Housing Act. The upshot would be that many projects qualifying for 236 mortgages and interest subsidy would nevertheless have tenants with incomes

too high for the units to be eligible for the special depreciation allowance for rehabilitation expenditures. This particular issue is apparently being resolved in favor of the HUD guidelines. (Department of the Treasury News, 1971)

Among many other candidates for resolution by IRS, however, are such questions as:

> Must the unit actually be occupied by a low-income tenant, or only "reserved" for such a tenant even though vacant?
>
> How shall project costs be allocated to units?
>
> What happens in the case of an eviction?

The point is that the tax incentive approach is not a mechanism obviously free of administrative problems. If the IRS makes these determinations, then it is implicitly making housing policy. If it does so independently of HUD, there is a danger of either mistaken judgments being made by IRS personnel inexperienced in housing matters or of a new housing administration bureaucracy being established within IRS. If HUD rulings and policy are allowed to govern, then the IRS has less control over the tax equity and revenue questions.

These questions at least suggest the complications of using a tax incentive for a highly focused public objective. Writing at a time when a number of elaborate proposals for tax incentives were being considered in the Congress (U. S. Senate, 1967), Richard Slitor (1968, p. 54) anticipated the tangle in which the rehabilitation incentive seems to find itself:

> As the better tax plans in this field now clearly recognize, fast tax depreciation for low-income housing in the inner

> cities (or housing accessible to the urban poor) would not be an automatic or virtually self-administering scheme. The standards and criteria for acceptability of projects in terms of physical characteristics, location, financing, and rental scales would almost certainly involve exacting regulations, certification procedures, and bureaucratic overhead. . . . As one examines the problems of suitable eligibility criteria for tax writeoffs for low-income urban housing, this use of the tax system appears more and more to be essentially a complex and rather cumbersome substitute for direct expenditures, having selective appeal chiefly for high-income investors.

Later chapters will focus on the additional question of government cost for the tax incentives attached to 236 housing and on the possibilities for direct payment options. However, in this chapter devoted to the general workings of the tax incentive in 236 housing it is appropriate to inquire further into the workings of the tax incentive as perceived by the private actors in housing development.

D. PRIVATE RESPONSE TO TAX INCENTIVES

1. Allocations of "Captured" Capital

In principle, the value added to a Section 236 project by virtue of the tax savings will cause these projects to be developed only if the inducement is sufficient to meet the price of the competition for each of the major actors involved in housing development and production. What is more likely, especially in the case of a broadly effective tax device such as accelerated depreciation, is that more than usual profits accrue to the scarce resources in the process and to the earliest participants. In somewhat pure economic terms these resources can be thought of as land, labor and capital. We might expect, therefore, that if some land (or building shells) were located so as to be particularly well suited for use in Section 236 projects, the price might be bid up. For new con-

struction at least there would seem to be nothing unique about land on which a Section 236 project could be built, compared with more conventionally financed rental housing, except for such distortions as exclusionary zoning. (See p. 23 above.) In the rehabilitation case, it might be that the buildings most suitable for rehabilitation--those needing complete rehabilitation from the walls in, thereby generating the most expenditures for the rapid depreciation allowance and also most likely to be empty, thereby removing the issue of relocation of tenants--could become scarce enough to lead to price inflation of these properties. (Sunley, 1971, p. 387) Heinberg (1971) suggests that, in fact, the amount of 236 appropriations allotted to rehabilitation may be more of a limiting factor than the land and buildings.

Capital requirements for a 236 project, as we have seen, are met largely through a federally insured mortgage but the funds involved must compete for general mortgage funds otherwise. The maximum rate allowed on FHA-insured mortgages has usually been set just at or below the market rates for conventional, uninsured mortgages. This has meant that lenders, in order to reduce the actual amount of the loan made to one on which something approaching market interest rates will be paid, charge the borrower discount "points." While the FHA interest rate is paid on the face amount of the loan, the actual amount has been reduced by the "points" so as to yield a normal return to the lender. In principle, some of the capital contributed for a Section 236 project by high bracket investors because of the tax shelter might be applied by the developer as payment for these discount "points" charged by the mortgage lender. The discount points increase the cash equity requirements and reduce the net amount available from the capital contributions for the developer.

Thus, the availability of a surplus of capital contributions, i.e., more than that required to induce the developer to create the project, provides a "cushion" for meeting expenses imposed by mortgage restrictions. In practice there is minimal need for this "cushion" because the lender can sell the mortgage loan at par to the Federal National Mortgage Association (FNMA) with the assistance of the Government National Mortgage Association (GNMA). (Aaron, 1972, Ch. VII)

To the extent that the total demand for construction labor and materials is increased by the availability of favorable mortgages and tax savings, a part of the capital attracted might also be required to pay higher prices for these factors, i.e., construction labor and materials. The practice seems to have been that rising construction prices, for whatever reason, have simply pushed up the amount of total replacement cost, hence mortgage loan amount rather than drawing off some of the attracted capital. That is, the developer, who is in the position of collecting the capital attracted by the tax savings, has ordinarily not depended upon the capital contributions to pay construction costs. In some areas such as New York City the construction costs have risen to such levels that the statutory limits on mortgage amounts have imposed a ceiling. It is true more generally, however, that part of the capital contributions may be held in reserve as an emergency source of funds to guarantee completion of the project in the event the costs over-run the original contract amount to such an extent that the builder just walks away from the job and another contractor must be found to complete the construction.

All the foregoing are possible resources which might stand to claim some of the excess capital which high-bracket investors would be willing to advance in exchange for the tax savings of a Section 236 project. But

the most ironic claimant of all is the tax shelter broker. While the other areas mentioned are, at least, necessary for a housing project to be developed and operated, the need for the function of the tax shelter broker is created by the device chosen to attract the investment capital--the tax shelter. Recent experience with low- and moderate-income housing projects has been that many developer/builders either do not understand the intricacies of the tax laws and tax planning or they regard their primary interest and role as lodging in the development and building process proper. There has arisen as a result the phenomenon of investment banking firms performing the role of broker/syndicator of these projects. These firms specialize in working out the tax implications, preparing offering brochures, structuring the partnership agreement and guarantees to define and protect the interests of all parties, and in finding the investors interested in limited partnership shares in such projects. In return the broker/syndicator retains a considerable fraction of the total amount raised from the limited partners. Partly by assuring the investors of a reliable and reduced risk project, the broker/syndicator is able to command maximum investment from the limited partners, so that the net amount to the developer/builder may be almost as great as if he had tried to market the shares himself. The broker/syndicator's fee may be in the range of 15 to 30 percent of the total amount of capital contributions raised (Lane and Edson, 1971; interviews at Boston Financial Technology, 1971). The precise magnitude is not as important as the observation that part of the tax revenues foregone end up not in increasing the capital available to housing construction and operation but in the private costs of administering the tax shelter--not to mention the public costs of administration borne by IRS. The usual arguments against more direct pay-

ments include assertions of increased costs of administration, but here we see that there are, in effect, administrative costs being paid, indirectly, from public funds anyway.

2. Response of Builders and Developers

Builders and developers appear to be responding to the incentives for the production of rental units under Section 236 and other programs which enjoy some of the same benefits in financing, rent assistance, and tax shelter. But there is some indication that there is only a subset of builders and developers who appreciate the potential benefits from this type of development. A survey of the members of the National Association of Homebuilders conducted in the summer of 1969 found that of the multi-family builders 30 percent responded "yes" to the question, "Are you planning to build or currently building low-income housing?" (Sumichrast and Frankel, 1970, p. 49) Impediments to the builders' interest in low-income housing were found to be primarily (1) high land costs, (2) government red tape, (3) too little profit, (4) zoning problems, and (5) inadequate allocations of program funds. (Sumichrast and Frankel, 1970, pp. 49-50)

These findings were confirmed by a study undertaken for HUD by the accounting firm Touche Ross and Co. (1971) on tax considerations in multi-family housing investments. Their six-city study of 137 representative investors (including 28 individuals and 89 real estate "groups") found that the chief deterrents to investment in low- and moderate-income housing were (1) low return, (2) FHA red tape, and (3) little knowledge of the market for this type of housing. However, of those not favoring low- and moderate-income housing 70 percent did not recognize the tax shelter

advantage of this type of investment. In the full sample 53 percent said they didn't measure the benefits of tax shelter, even though 67 percent used some form of accelerated depreciation. Those favoring low- and moderate-income housing as an investment were attracted by the financing, the tax shelter opportunities, and the marketability of the units. Of the 20 percent of investors who indicated that the Tax Reform Act of 1969 would have some effect on their multi-family housing investments, only 5 percent indicated that they would be drawn into increased investment in low- and moderate-income housing. (Touche Ross, 1971, pp. 12, 13, 63, 102, 124)

Production of units of housing under the 236 program and similar programs has without question increased markedly in recent years. The Third Annual Report on National Housing Goals (U. S. President, 1971, pp. 9, 30, 31) indicated that production of subsidized housing units increased from 225,840 units in calendar year 1969 to 469,750 in 1970. The number of units from HUD programs involving at least the possibility of tax shelter benefits under private ownership jumped from 69,050 units in 1969 to 163,880 units in 1970.[1] The Section 236 program for calendar year 1970 accounted for 109,770 units--4,950 rehabilitated and 104,820 new construction. Applications for mortgage insurance and interest subsidy allocations have consistently been so numerous that more interest subsidy funds are needed than the amounts appropriated. For example, the Second Annual Report on National Housing Goals (U. S. President, 1970, p. 45) indicated that as of March 6, 1970, requests

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[1] Tax-shelter benefits are possible, in principle, in leased public housing, Section 236 projects, Rent Supplement projects, state-assisted projects, and Section 221(d)(3) Below Market Interest Rate projects. There are no tax-shelter benefits in conventional public housing development; there is a tax preference, however, in that interest on housing authority bonds is tax-free.

for $144 million of subsidy allocations under the 236 program could not be filled for lack of funds. (I would estimate that this represents about 140,000 to 150,000 units.) The study by Aaron (1972, Ch. VIII) on Federal housing subsidies observed that in 1970 and 1971 the number of units for which 236 subsidy funds were reserved on approved applications was running about double the number of units for which actual commitments of appropriated funds could be made. It is impossible, of course, to credit the favored tax position of 236 housing entirely for this intense interest on the part of the development community. For one thing, some of these applications are from non-profit sponsors of 236 housing in which the builder only gets a direct builder's profit, and there are no tax shelter benefits involved. An analysis by Keyes (1971, p. 162) found that of all low- and moderate-income housing for which both for-profit and non-profit sponsorship is possible, for-profit developers accounted for about 66 percent of the units being produced. Furthermore, as the Third Annual Report on National Housing Goals (U. S. President, 1971, p. 7) recognized, a number of other economic factors were at work:

> In many instances, production under one of the various subsidized housing programs was the only way a builder could be relatively assured of finding a buyer who could afford the monthly payments associated with a newly produced housing unit and also finding mortgage money to finance the construction and purchase of the unit. Thus, many builders who had long avoided involvement with Federal subsidized programs shifted to where the action was in order to remain in business during the overall production decline.

Interestingly, the housing goals report for 1971 included for the first time mention of the role of tax incentives in rental housing and mention of the loss of tax revenues as an additional cost over direct budgetary outlays. (U. S. President, 1971, pp. 3, 37) The pertinence of these

observations is that increased reliance upon privately produced and owned property to provide Federally assisted rental housing calls for increased attention to the tax incentives and the accompanying revenue losses which at least potentially attach to these structures.

E. SUMMARY

This chapter has shown the importance of distinguishing between the developer and the investors in a typical Section 236 rental project. The developer brings the necessary skills for assembling all the elements of a project, while the investor is the person who, because of high income from other sources, can benefit from the large tax savings attached to a 236 project--provided the investor can pay the developer a competitive price for the privilege of getting the tax savings in future years. The amount the investor is willing to contribute to the developer depends, not on the amount of effort of the developer, but on the magnitude of the tax shelter created by a combination of the development of the project and the tax law. Because the developer can obtain a Federally insured mortgage loan for 97 to 99 percent of his direct costs, the surplus capital contributions of the investors become a handsome fee received at the outset of the project.

The dividend in Section 236 projects is limited and not guaranteed, while rents are controlled by the Federal Housing Authority. Thus the investment value of such a project might be too small to attract developers without some added incentive, such as that provided by the tax shelter. (It is important to note that the reduction in rent derives primarily from the Federal assumption of part of the cost of mortgage

loan repayment rather than the limitation on cash dividend to the owner.) We shall explore the magnitude of the incentive for development of a 236 project in Chapter V.

The reliance of developers of 236 projects upon the tax shelter component means that, in effect, the administration of this housing program is divided between the Department of Housing and Urban Development and the Treasury (Internal Revenue Service), especially in the case of the rehabilitation. The special depreciation allowances for rehabilitation expenditures are contingent upon a set of rules for amounts spent and persons to whom the units must be rented, which must be administered, not by HUD but by the IRS.

Private developers appear to have responded to this complex set of lures, so that there is a standing backlog of project applications for Section 236 mortgage insurance and commitments for interest subsidy payments. This raises the question whether the tax incentive could be reduced and still be sufficiently attractive to induce as much development as is covered by interest subsidy appropriations. That enticing possibility is explored only briefly in Chapters VI and VII. Having outlined the general configuration of 236 project financing, we turn now to a more detailed elaboration of a base case typical of those used in marketing tax shelter to high tax bracket investors. This groundwork is necessary for a detailed understanding of the way the tax laws are used now and for understanding the magnitude and distribution of revenue losses for these projects.

CHAPTER V: BASE CASES

A. RATIONALE

As a framework for analysis of the interaction between income tax incentives and the Section 236 mortgage insurance and interest subsidy programs, I have chosen to use a very explicit description of current practice, using examples called "base cases" for new construction and rehabilitation. The level of analysis is that of an illustrative rental project of 100 units. The primary focus is on project financing. A set of development costs and operating costs are taken to be representative of Section 236 projects, and typical financing and investment parameters are used in the base cases.

As an analytical device the base case approach offers the advantage of explicitness at risk of some sacrifice in generality. The analysis therefore includes tests of the sensitivity of the results to the particular values of project parameters chosen. I think the explicit, base case approach maintains a desirable degree of concreteness for the purposes of examining the way in which the development and operation of Section 236 rental housing actually works in conjunction with the tax laws, even at the risk of some challenge of the specific parameters, assumptions or tax devices used in the base cases. The base case approach also facilitates direct computation of government costs associated with the actual operation of these programs and in comparison of government costs under alternative schemes.

Finally, base cases have been used because the number of parameters

which would be involved in a comprehensive general analysis would be quite large. The use of base cases might be an appropriate starting point for eliminating parameters which would be inconsequential over their usual range for the particular questions being examined in a general analysis. The large number of potential variables, I suspect, is a primary reason why so much of the discussion of the relationships between real estate and taxation is done in terms of explicit numerical examples, as in the work of Anderson (1965), Slitor (1968) McKee (1970), Soelberg and Stefaniak (1970), and O'Block and Kuehn (1970).

B. DEVELOPMENT COSTS

Development costs assumed for the base cases for new construction and rehabilitation are summarized in Tables V-1 through V-3. The cost figures are intended to be illustrative of the build-up of costs considered by the FHA on the developer's application for mortgage insurance and interest subsidy allocation.[1] Since many of the fees shown vary from place to place and from time to time and have limits established by local FHA insuring

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[1]The costs used in this work were derived from a number of sources, including (1) the author's work experience with a Boston rehabilitation developer, the King-Bison Company (now HABCO), in 1969, (2) consulting in housing development performed for the North American Development Corp. of Boston in 1969 and 1970, for Housing Now Inc., a community housing development group which has initiated a new construction Section 236 project in North Adams, Mass. in 1970, and for Arthur D. Little, Inc. of Cambridge, Mass. in 1970 and 1971, (3) case study materials in housing development used at the Massachusetts Institute of Technology and the Harvard School of Business Administration in 1969 and 1970, (4) numerous other projects (both new construction and rehabilitation) on which the author had access to the FHA Form 2013 (used to summarize development and operating costs for project mortgage insurance and interest subsidy application). See p. 205 below for a comparison with national median values in connection with the discussion on sensitivity tests.

offices, they can only be viewed as illustrative.

Furthermore, while FHA requires that costs shown be actual costs and not the maximum allowable, applicants have often found devices for using the maximum costs allowable, such as (1) including the architect as a subsidiary enterprise which bills the maximum cost regardless of actual costs and fees which could have been charged on a competitive arms-length bid, (2) purchasing the land from a subsidiary enterprise at a price well above actual cost of the land to the subsidiary. HUD/FHA officially discourages such practices as inflating acquisition costs but nevertheless often allows it if the original purchase was six months or more prior to the developer's application.

Table V-1 illustrates the build-up of costs for illustrative 100-unit projects using the cost categories used by the FHA in arriving at a Total Replacement Cost (TRC), which is the basis for the mortgage computation (90 percent of TRC). Note that the TRC includes (1) an allowance for a Builder's and Sponsor's Profit and Risk Allowance (BSPRA) amounting to 10 percent of direct development costs and fees (but exclusive of land and building costs and the BSPRA itself), (2) a Legal and Organization Allowance, part of which may be needed for actual legal expenses, but the remainder of which may be used to cover expenses of the developer. The Total Replacement Costs of the new construction and rehabilitation project have both been set at approximately $18,100 per unit. This is not intended to indicate that new construction and rehabilitation projects are likely to have the same total costs, but to establish directly comparable projects. Sensitivity calculations will later show that the precise composition of costs is not a critical factor

TABLE V-1A: ILLUSTRATIVE DEVELOPMENT COSTS,
NEW CONSTRUCTION BASE CASE

100 UNIT PROJECT

ITEM	COST	COMMENTS
DIRECT CONSTRUCTION	$1,307,042	
FEES		
Builder's Overhead	36,140	-Approx. 2 to 3% of direct construction
Builder's Profit	--	-Waived, assume identity of interest between builder and developer
Architect's Fee, Design & Superv.	83,422	-Approx. 4 to 4-1/2% for design, 2% for supervision on direct construction costs
Bond Premium	16,004	-Approx. 1% of construction costs
TOTAL FEES	135,566	
TOTAL IMPROVEMENTS	1,442,608	
CARRYING CHARGES & FINANCING		
Constr. Loan Interest	39,512	-Interest for avg. of 1/2 mortgage at 4.85%
Real Estate Taxes	5,000	-Assumed on land only
Insurance	16,294	-Fire & Liability at 1% of mortgage
FHA Mortgage Ins. Prem.	8,147	-0.5% of mortgage
FHA Exam. Fee	4,888	-0.3% of mortgage
FHA Insp. Fee	8,147	-0.5% of mortgage
Financing Fee	32,587	-2% of mortgage
FNMA Fee	24,440	-1.5% of mortgage assuming FNMA purchase
Title & Recording	8,147	-Typically 0.5% of mortgage
TOTAL CARRYING CHGS.	147,162	-$139,014 taken as expense in construction year
LEGAL & ORGN. ALLOW.	10,591	-0.65% of mortgage
DEVELOPMENT COSTS	1,600,361	-Sum of preceding items
BLDRS. & SPONS. PROFIT & RISK ALLOW. (BSPRA)	160,036	-10% on direct development costs
TOTAL DEV. COST	1,760,393	
LAND	50,000	
TOTAL REPLACEMENT COST	$1,810,393	-Used for mortgage calculation

TABLE V-1B: ILLUSTRATIVE DEVELOPMENT COSTS, REHABILITATION BASE CASE

100 UNIT PROJECT

ITEM	COST	COMMENTS
DIRECT CONSTRUCTION	$1,207,597	-Direct costs average 12,076 per unit
GEN. REQ'TS.	--	-FHA currently allows $300 per unit for relocation expenses, where incurred.
FEES		
Builder's Overhead	34,152	-Approx. 2 to 3% of direct construction.
Builder's Profit	--	-If builder is distinct from developer, he is paid a fee which diminishes the BSPRA by the same amount.
Architect's Fee, Design & Superv.	77,456	-Approx. 4 to 4-1/2% for design, 2% for supervision on direct construction costs.
Bond Premium	15,030	-Approx. 1% of direct construction costs
TOTAL FEES	111,608	
TOTAL IMPROVEMENTS	1,319,204	
CARRYING CHARGES & FINANCING		
Construction loan interest*	39,581	-Assumes 4.85% on 1/2 total mortgage loan (as an average) over 1 yr. (typical of state housing finance agency rates). This is equivalent to conventional rates of 9% over approx. 1/2 yr.
Real Estate Taxes*	16,000	
Insurance*	16,322	-Fire and liability ins. at 1% of mtge.
FHA Mortgage Ins. Prem.*	8,161	-0.5% of mortgage
FHA Exam. Fee*	4,897	-0.3% of mortgage
FHA Insp. Fee*	8,161	-0.5% of mortgage amount
Financing Fee*	32,644	-2% of mortgage
FNMA Fee*	24,483	-Typically 1.5% of mortgage
Title & Recording Fees	8,161	-Typically 0.5% of mortgage
TOTAL CARRYING CHARGES	158,410	*All but title & record'g. taken as expense during construction, sums to $150,250
LEGAL & ORGN. ALLOW.	10,609	-0.65% of mortgage

(Continued)

TABLE V-1B (CONT.): ILLUSTRATIVE DEVELOPMENT COSTS, REHABILITATION BASE CASE

ITEM	COST	COMMENTS
DEVELOPMENT COSTS	$1,503,255	-Sum of preceding items
BLDRS. & SPONS. PROFIT & RISK ALLOW. (BSPRA)	150,325	-10% of improvement plus carrying charges plus legal & organ. costs
TOTAL DEV. COST	1,653,580	-Including BSPRA
LAND & SHELL	160,000	-Land at $50,000, shell at $110,000
TOTAL REPL. COST	$1,813,580	-Used for mortgage calculations

in the investment and cost-to-government conclusions.

Table V-2 compares the Total Replacement Cost involved in the application for mortgage with the resources required for the project. The largest portion, of course, comes from the mortgage loan. The cash equity required, however, is seen to be much less than the apparent equity of 10 percent of TRC. In the example described in Table V-2 the builder and developer are assumed to have what the FHA terms an "identity of interest." In this case the allowable BSPRA is 10 percent of actual development costs (exclusive of land and buildings).[1] Because of the value of the tax shelter it is quite common for the builder to agree to an identity of interest with the developer (assuming they are distinct in the first place) and to make some agreement about dividing the proceeds raised by selling interests in the project to limited partner investors. In the event that the builder chooses a guaranteed contractor's fee, the amount involved will generally be lower than if the builder shares some of the risk of getting the project in operation. In this case the builder's fee would then appear explicitly in the cost summary for the FHA and the BSPRA would be reduced by the amount of the builder's fee. In Table V-2 an identity of interest is assumed. The capital contributions of the limited partners

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[1]The BSPRA can be viewed either as a rough measure of the increase in value of the property created by the developer over the sum of direct costs or as an artifice for enabling the developer to obtain a mortgage loan in an amount greater than 90 percent of actual costs. With the limitation in cash return imposed in this type of project (the annual cash return may not exceed 6 percent of the implied equity of 10 percent of Total Replacement Costs) and the coupling between rental market and rent assistance in such projects it is difficult to arrive at a market evaluation of this hypothetical increase in value. In fact we shall shortly see that most of the increase in value exists because the property creates a tax shelter rather than that it creates a shelter.

TABLE V-2: DEVELOPMENT COST AND DEPRECIATION SUMMARY
(PROJECT BASIS INCLUDES ONLY CASH COSTS)

		NEW CONSTRUCTION	REHABILITATION
	DEVELOPMENT COSTS[1]	$ 1,600,357	$ 1,503,255
plus	BUILDER'S & SPONSOR'S PROFIT & RISK ALLOWANCE (BSPRA)	160,036	150,325
plus	LAND VALUE	50,000	50,000
plus	BUILDING SHELL VALUE	--	110,000
equals	TOTAL REPLACEMENT COST	$ 1,810,393	$ 1,813,580
less	MORTGAGE (90% of T.R.C.)	1,629,353	1,632,222
equals	IMPLIED EQUITY	$ 181,040	$ 181,358
less	BSPRA (non-cash)	160,036	150,325
equals	APPARENT CASH EQUITY	$ 21,004	$ 31,033
plus	DEVELOPER'S OVERHEAD[2]	27,876	17,933
equals	ACTUAL CASH EXPENSES	$ 48,880	$ 48,966
	DEPRECIABLE BASIS (Dev. costs + Shell + Dev. O'head OR Mortgage + actual equity-land)	$ 1,628,232	$ 1,631,188
less	EXPENSES CLAIMED DURING CONSTRUCTION	139,014	150,250
equals	NET DEPRECIABLE BASIS	1,489,218	1,480,938
less	BUILDING SHELL BASIS	--	110,000
equals	REHAB. EXPENDITURES BASIS	--	$ 1,370,938

Notes: (1) Total out-of-pocket costs for 100 units recognized by FHA except for land and shell value.

(2) Excess expenses not recognized by FHA for mortgage application (such as fees in excess of allowances, cost of working capital, office expenses) reduced by allowances in excess of cost (as on land value and legal & orgn. expense). The figures used here were found by subtraction, actual cash expenses being assumed as 3 percent of the mortgage amount.

are thus to be divided between the builder and the developer. Additional funds for the partnership may also be derived from arrangements for the architect and perhaps the legal staff to be partners. In this case the fullest allowable fees are claimed in the application for mortgage, but the fees are waived as a cash requirement. All partners then share in the net proceeds (including any excess of mortgage funds and the equity contributions of the limited partners).

While the FHA summary of costs would suggest that an actual cash expense of close to 1 percent is possible, Table V-2 includes additional allowances for development costs not acknowledged in the FHA summary. As suggested in the table, the additional funds would typically be required to cover administrative costs, expense of working capital during the development period, and other costs related to the project but for which there is no other source of funds. In principle these areas could include:

1. Costs of initial set-up of developing entity
2. Overhead costs for the developing entity
3. Relocation expenses when occupied units are acquired for rehabilitation (FHA currently allows up to $300 per unit to be entered as a relocation cost in the mortgage calculation.)
4. Construction cost over-runs (some of this may be recouped through FHA-approved change orders, but this cannot be assured)
5. Job training programs or excessive development costs arising from low efficiency of low skilled workmen
6. Any discounts charged either by the interim leader for the construction loan or by the permanent lender for the permanent loan. The magnitude of discount

depends on how much above the FHA limit in market-rate interest rates the actual market rates are.

7. Any management training programs undertaken by the developer.

Some of these costs may not be incurred, of course, in any given project. In the example shown, overhead expenses are assumed to be partly covered by the "organization" part of the legal and organization allowance in the mortgage calculation. The remaining net permanent cash requirement in excess of the mortgage proceeds is the equivalent of 3 percent of the mortgage amount in the example. Most developers could be expected to avoid as much as possible any costs which are not absolutely necessary to the project unless a separate source of funds were available; otherwise these expenditures subtract directly from the project profit.

As a working assumption based on conversations with those involved in the development business, I have taken the net cash cost for the typical base case projects to be the equivalent of 3 percent of the mortgage amount. Since the BSPRA is larger in the new construction case (there are more development costs to which the BSPRA applies), this 3 percent assumption arbitrarily forces a higher overhead to be assumed for the developer of the new construction project. This can be kept in mind later when the internal rate of return in cash equity is computed for the base cases; if the cash costs are not exactly equal for both construction and rehabilitation, then the internal rate of return would be affected. Small adjustments in the cash equity would not have significant effects on the present value calculations, since the only difference introduced would be in the total value of the project (basis) for purposes of depreciation allowances.

C. DEPRECIATION ELEMENTS

1. Treatment of Developer's "Fee"

Table V-2 also presents the depreciation summary for the situation in which only the actual cash expenses are included in the tax basis of the property. That is, the amount on which depreciation can be taken is the sum of all development costs (exclusive of any fee charged to the partnership by the developer but including the developer's cash overhead expense) plus building shell costs, if any. This would be the situation if the developer retained ownership of the project as his own investment. If the project is syndicated the capital contributions of the limited partner/investors in the project, of course, would exceed the actual cash requirements of the developer/builder/general partner. Otherwise the developer would not undertake the project.

However, the treatment for tax purposes of the developer's excess cash intake from the limited partner/investors over his cash requirements depends upon the way in which the developer treats this excess.[1] In some situations developers are attempting to leave themselves a preferable tax situation by claiming that the excess capital contributions either constitute a capital gain or a return of capital. In these cases the excess funds collected by the developer cannot be added to the total value of the project for tax purposes and do not contribute to the basis subject to depreciation. The depreciable basis is then the same as shown in Table V-2.

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[1] The developer may choose to claim the excess as a charge to the partnership for his services, i.e., a fee, which is then taxable income to the developer and a legitimate part of the total development costs as far as the investors are concerned. I shall return to this case shortly.

The developer's tax situation is a matter for resolution between him and the Internal Revenue Service. If the excess capital contributions are claimed as a capital gain, the developer must be able to satisfy the IRS that this excess represents an amount by which the project value has increased since he undertook the obligation of the mortgage and his own cash costs. In this case capital gains taxes must be paid by the developer on the excess.

Or if the developer has retained a sufficient claim to ownership of the profits and losses in the project, he might be able to claim that out of the total funds which were committed to the project in which he has a claim, part of the funds were returned to him as a return of capital in that they were funds belonging to him which were not required to complete the project. The developer's basis in the project would, of course, be decreased by the amount of capital returned.[1] Because the owners of a project can claim the costs actually covered by the mortgage loan as part of their depreciable basis in the project, the developer can arrange it so that he still has a claim to some of the value of the project even after removing all the excess capital contributions. For example, suppose a developer retained 10 percent ownership in a new construction project having a total value (amount covered by a $1,800,000 mortgage loan plus total of capital contributions of $200,000) of $2,000,000. The developer could claim a return of capital of 7 percent,

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[1]Note that while the reduction of the developer's basis diminishes his claim to the capital value of the project (hence to depreciation losses), the developer could continue to claim the portion of annual cash distributions defined by his partnership share.

or $140,000, amounting to exactly the excess of capital provided by the limited partners over the developer's cash costs of $60,000. The developer would then be in the position of having covered all cash costs, withdrawn $140,000 from the project, and having a claim to 3 percent of the original value of the project to depreciate over its economic life. Little tax shelter would result and capital gains taxes would be payable on the difference between the developer's depreciated basis in the project and his portion of the sale price. The point is that he would have escaped taxation on the original excess capital contributions of the limited partners. Such claims are regarded as risky in that the Internal Revenue Service has not established a position on them.

2. Construction Expenses

Table V-2 also shows that a number of items are claimed as an expense during the construction period and the depreciable basis is reduced by a corresponding amount. Construction carrying costs could, of course, either be included in the total depreciable costs (i.e., capitalized) or taken as an expense in the year incurred. The major items of construction carrying costs are the interest in the construction loan and the real estate taxes which must be paid during the development period. The fact that the construction expenses are chargeable as an expense means that they are an immediate offset for other income and serve as a tax shelter to the owner. In the syndication case they are paper losses to the investors in the sense that they require no further outlays of funds, yet can be claimed as a loss against other income. To the investor interested in maximizing early returns on an investment (as the investor is assumed to be in this analysis), taking the construction

items as an expense in the year incurred is preferable to taking them in the form of depreciation of the same total amount but spread over a period of years. In both cases, shelter for other ordinary income is offered, but in the expensing case the tax savings are realized in the development period rather than in several installments in the future.

Various fees actually paid during the development period can also be expensed when incurred; these include insurance premiums for fire and liability protection during development, FHA examination and inspection fees and title and recording fees. Some developers claim the builder's overhead payment as an expense, provided it is paid during development. Other payments to the contractor for direct construction costs are not eligible for a claim as an expense and must be added to the capital cost of the project.

3. Stepped-up Basis

Table V-3 summarizes the situation in which the developer claims the entire amount of the capital contributions as a fee, i.e., as a direct cost to the partnership. The developer who makes this claim is, of course, subject to ordinary income tax on such a fee; usually he would not claim the capital contributions as a fee unless he had excess tax shelter from some other enterprise with which to shelter the fee from income tax. In the case in which the developer claims the entire amount as a fee, the limited partners can be required to contribute slightly more capital because, irony of ironies, the developer's fee can be added to the depreciable cost of the project, thus creating a larger amount of depreciation, hence more tax shelter and more investment value. In this case, then, the total amount of capital contributions is increased as shown in Table

TABLE V-3: COST AND DEPRECIATION SUMMARY
(PROJECT BASIS INCLUDES DEVELOPER FEE)

		NEW CONSTRUCTION	REHABILITATION
	CAPITAL CONTRIBUTIONS BY INVESTORS(1)	$ 236,023	$ 396,556
less	ACTUAL CASH EXPENSES (Table V-2)	48,880	48,966
equals	NET PROCEEDS, DEVELOPER FEE	$ 187,143	$ 347,590
	DEPRECIABLE BASIS(2) (Dev. Costs + Shell + Dev. O'head. + Dev. Fee OR Mortgage + Cap. Contrib.-Land)	$ 1,815,376	$ 1,978,777
less	EXPENSES CLAIMED DURING CONSTRUCTION	139,014	150,250
equals	NET DEPRECIABLE BASIS	$ 1,676,363	$ 1,828,527
less	BUILDING SHELL BASIS	--	110,000
less	REHAB. EXPENDITURES BASIS(3)	--	1,500,000
equals	EXCESS REHAB. EXPEND. BASIS	--	$ 218,527

NOTES:
(1) Sum of payments made by limited-partner investors in exchange for cash dividends and tax losses from depreciation.
(2) Basis is larger than in Table V-2 because the developer fee is assumed to be a charge to the project, thus part of depreciable cost to the investors.
(3) Rehabilitation expenditures eligible for 5-year write-off are limited to $15,000 per unit.

V-3. In the section on investment analysis we shall see just how this amount is arrived at; for now it suffices to note that it increases, or "steps-up," the tax basis.

4. Other Refinements in Depreciation

In these examples we are concerned with a limited number of depreciable elements in a typical project, because I have chosen to limit this "realistic" description to one that is no more complicated than necessary. Actual practice is to divide the project into a number of depreciable elements, the objective being to achieve the shortest possible (allowable) economic life and the most accelerated form of depreciation allowed--all in the interest of maximizing the early depreciation and tax shelter benefits of the project. The five elements of the basis of a project used in this analysis are: (1) land, which is not depreciable, (2) construction expenses, which are usually expensed as discussed above, (3) the existing shell (in the case of a rehabilitation project), which is depreciated at 125 percent of the straight-line rate applied to the adjusted basis of this element each year (to simplify computations no shell depreciation is taken in the development year), (4) allowable rehabilitation expenditures (up to $15,000 per unit), (5) costs attributable to new construction or to the excess over allowable rehabilitation expenditures, depreciated at 200 percent declining balance (twice the straight-line rate applied to the adjusted basis of this element each year). Since accelerated methods of depreciation eventually reach a point beyond which the annual depreciation would be less than that for straight-line depreciation of the adjusted basis over the remaining economic life, a switch to straight-line depreciation is made where advantageous (see Hall and Jorgensen (1971)

for convenient formulas for this switching point).[1]

D. FEASIBILITY TESTS

1. Mortgage Limits

Table V-4 indicates the tests on mortgage limits which a project must meet in order to be eligible for mortgage insurance under Section 236 and also indicates typical tests for rent feasibility. The mortgage tests are the statutory limits defined in the Housing and Urban Development Act of 1968 (Public Law 90-448) as modified by the Housing and Urban Development Act of 1970 (Public Law 91-609). These limits are included here primarily to indicate that there are upper bounds on the allowable mortgage loans for these projects. Suppose in the present examples the project were composed of 50 two-bedroom units and 50 three-bedroom units. The mortgage limit test would then be (for a high cost of living area)

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[1] A few caveats are in order here. While the base cases use 200 percent declining balance (or double declining balance, DDB) depreciation for new construction or excess rehabilitation expenditures, some projects are marketed using slightly different treatment for the depreciation: (1) the sum-of-the-years-digits (SYD) method of depreciation, which is permissible as an alternative to the DDB method for new residential construction, yields a slightly higher present value for the tax shelter generated by the project (see later discussion on investment results), (2) in some rehabilitation projects the excess rehabilitation expenditures are treated more conservatively than the present case assumptions (DDB depreciation) and use instead the 150 percent declining balance method allowed for new non-residential property (this apparently a conclusion reached in view of the fact that the tax legislation treats rehabilitation as though it were non-residential construction with respect to the recapture provisions at sale), (3) some developers, as mentioned earlier, will break down the depreciation elements quite finely so as to be able to claim very short economic lives where permissible, as on equipment and appliances, for example, and thereby increase the annual depreciation which can be taken in the early years. The omission of this practice in the base case is consistent with the omission from taxable annual income of the payments which are included in the rent as reserves for replacement of such equipment. (See the discussion below on the determination of taxable income.)

TABLE V-4: FHA FEASIBILITY TESTS

A. SECTION 236 MORTGAGE AMOUNT (Limits established by Housing and Urban Development Act of 1968 as amended by Housing and Urban Development Act of 1969)

UNIT SIZE	BASIC MORTGAGE LIMIT	MAXIMUM MORTGAGE IN HIGH COST AREAS (45% above basic limit)
NON-ELEVATOR:		
Efficiency	$ 9,200	$ 13,340
1 Bedroom	12,937	18,758
2 BR	15,525	22,511
3 BR	19,550	28,347
4 or more BR	22,137	32,098
ELEVATOR:		
Efficiency	10,925	15,841
1 BR	15,525	22,511
2 BR	18,400	26,680
3 BR	23,000	33,350
4 or more BR	26,162	37,935

B. SECTION 236 RENT LIMITS (BOSTON, MASS.)

FAMILY SIZE	UNIT SIZE	REGULAR PUBLIC HOUSING ADMISSION INCOME LIMITS	MAXIMUM ADJUSTED INCOME FOR 236 ELIGIBILITY(1)	MAXIMUM 236 BASIC MONTHLY RENT(2)
1	Effic.	$ 4,200	$ 5,670	$ 118
2	1 BR	4,600	6,210	130
3	2 BR	5,200	7,020	146
4	2 BR	5,700	7,695	160
5	3 BR	5,900	7,965	166
6	3 BR	6,100	8,235	172
7 or more	4 BR	6,300	8,505	177

(1) Adjusted income limit is 135% of public housing limit. Gross income may include $300 per minor and a 5% allowance for payroll withholding.

(2) Maximum basic rent at 25% of adjusted income.

50 two-bedroom units @ $22,500 maximum:	$1,125,000
50 three-bedroom units @ $28,347 maximum:	1,417,350
	$2,542,350

The base case examples would qualify as being within the mortgage limits for high-cost-of-living areas. Both because of rising construction costs and the desire on the part of the developer to maximize the tax shelter generated by the project, there seems generally to be considerable pressure to push these upper bounds.

2. Rent Levels

The other constraint is that of rent levels. Since a large portion of the rent must be used to repay the mortgage loan for the project while the operating costs are relatively fixed, the mortgage payment must be kept sufficiently low that with the addition of operating costs the rent levels are still feasible. As indicated in Table V-4 these limits are set with reference to the local admission income limits for public housing. Once a project has been established as feasible at these rents, the actual project rent-up may proceed with some tenants admitted under the rule providing that of the national allocation of 236 interest subsidy funds 20 percent may be applied to tenants admitted with incomes up to 90 percent of the locally established (by the FHA office) limits for Section 221(d)(3) housing. Tenants with incomes higher than that eligible for the basic rent set with reference to the public housing admission income limits must pay 25 percent of adjusted family income for rent and would in most cases be eligible for less than the maximum interest subsidy in their rents.

Table V-5 outlines a sample build-up of annual project expenses and rent determination. While important for determining income eligibility

TABLE V-5: ANNUAL RENT AND EXPENSE ELEMENTS FOR BASE CASE

(100 UNITS, SECTION 236, LIMITED DIVIDEND SPONSOR, NEW)

BASIC RENT		
Annual Gross Income	$ 163,800	100% occupancy, $136.50 per month (2 Bedroom)[1]
Occupancy Rate	0.95	5% vacancies
EFFECTIVE GROSS INCOME	$ 155,610	
ANNUAL EXPENSES		
Administration	8,190	5% of gross basic rent
Operating	37,835[1]	Utilities, garbage & trash, janitor
Maintenance	16,380[1]	Repairs, extermination, insurance
Replacements	8,147	Reserve of 1/2 percent of mortgage amount, assumed as annual expense
Real Estate Taxes	24,570	Locally negotiated, 15 percent of basic rent here
TOTAL EXPENSES & TAXES	$ 95,122[1]	
NET INCOME BEFORE DEBT SERVICE	60,488	
MORTGAGE PAYMENT	49,626	Annual payment for loan at 1 percent for 40 years[2]
NET INCOME FOR DIVIDEND	$ 10,862	6 percent of implied equity

[1]These figures are low for typical high cost urban areas, where the operating expenses are actually limited by the allowable rent for feasibility (Table V-4).

[2]Total mortgage payment is $129,371 for 7 percent (plus 1/2 percent mortgage insurance premium) mortgage. Difference is paid by HUD and is treated by IRS as additional income. In other words, from an accounting point of view the income includes both rental income and the interest subsidy payment; expenses include the total market rate interest payment to the lender.

for a project, the rent levels do not enter the investment calculations for the simple reason that the annual cash profit is limited to 6 percent of the implied equity (10 percent of Total Replacement Costs). Rent levels may eventually affect the investment character of the project in a direct way, however, in that many developers, squeezed to qualify for feasibility on rent levels, in their initial application show marginal allowances for operating expenses in order to qualify the project. The hope is that once in operation the FHA will approve rent increases when the project expenses begin to exceed the project budget. Should rent increases to cover increased operating expenses be slow in coming or denied entirely, the cash dividend is likely to be sacrificed in combination with some attempts to reduce costs by undermaintenance. In the base cases it is assumed that the full allowable dividend is earned and paid for every year of operation. We will subsequently examine the investment consequences of the loss of the allowed dividend in a project.

E. ANNUAL CASH FLOW AND AFTER-TAX RETURN

Remaining key parameters necessary to establish the base cases for purposes of computing annual cash flow and after-tax return are summarized in Table V-6. The values shown are intended to be reasonably representative of current practice especially as projects are described for purposes of syndication. The sensitivity analysis to be described later will examine the effects of variations in these assumed values. Both the new construction and the rehabilitation projects are assumed to be 100 units with identical, or nearly identical, values for other project parameters where this is not an unreasonable assumption. Both projects are assumed

TABLE V-6: BASE CASE INVESTMENT ASSUMPTIONS

Project Size	100 Units
Average cost per unit	$18,100
Development period	1 Tax year
Economic life (tax purposes)	40 years, new construction; 20 years, rehabilitation
Mortgage loan interest rate	7 percent plus 1/2 percent mortgage insurance premium
Mortgage term	40 years
Investor's income tax rate	50 percent (for range of income sheltered or taxed)
Minimum tax rate on preference income	10 percent
Capital gains tax rate	25 percent (50 percent on taxable gain after excluding one half)
Investor's required rate of return (discount rate)	15 percent, new; 25 percent, rehabilitation
Holding period	20 years (following one year of development)
Sale price	Outstanding mortgage balance
After-tax yield on tax sinking fund	4 percent

to require a development and construction period of exactly one tax year. For the discount rate, or required rate of return (after tax), the difference between new construction (15 percent) and rehabilitation (25 percent) is intended to reflect the fact that the investment market generally assumes a rehabilitation project to involve more risk and uncertainty because of the nature of this type of construction and because of its likely location, viz., older sections of central cities.

Annual after-tax return from a Section 236 project for a project investor is essentially the cash dividend less income tax.[1] Since I am primarily concerned here with Federal housing and tax policies, I neglect the effect of any state and local taxes on income. As we shall see, the primary contributor to after-tax return will be the income tax portion of after-tax return, in that it turns out to be negative, primarily because of depreciation allowances.

Taxable income is defined as

Taxable income = Gross rent (including interest subsidy payments made to the lender on behalf of the tenants)
LESS Cash expenses (including all operating expenses, fees, and property taxes but only

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[1] In practice the 236 rent payment includes a portion for payments to establish a reserve for replacement of major items of equipment. To the extent these funds are not spent but accumulated they constitute residual taxable income to the project (although FHA regulations prohibit distribution of this reserve to project owners). Then when purchases are made out of replacement reserve they are reported as project expense in the year made. The project income exposed to tax by the replacement reserve payments is usually covered by claiming depreciation deduction using the shortest possible economic lives for the equipment to be replaced. However, for purposes of the base cases I have assumed that the amount included for replacement reserve payments in the rent is spent each year. No special depreciation is taken for replaceable equipment.

the total interest payments on the mortgage; principal repayments are not considered an expense for income tax purposes)
LESS Depreciation (a non-cash expense)

Income from a Section 236 project is treated as though the owner received the full market rent (including the interest subsidy payment from HUD) and then made mortgage payments at market interest rate. The interest payments are deductible as an expense but principal repayments are not. The gross rent for a project is built up from the components allowed by FHA. Thus

Gross rent = Annual expenses (except debt service and dividend)
PLUS Mortgage payment
PLUS Allowable annual dividend

In effect the taxable income is thus

Taxable income = Mortgage principal repayments
PLUS Dividend
LESS Depreciation

Annual Federal income tax is thus

Income tax = Income tax bracket rate TIMES Taxable income
PLUS Minimum tax rate TIMES Amount of preference items (excess depreciation)

After-tax return is then

After-tax return = Dividend
LESS Income tax

where "income tax" will usually actually be a tax saving on other income owing to the tax shelter created by the depreciation allowances.

When taxable income is negative because of the large non-cash depreciation expense allowance, the taxable "income" is actually a shelter for ordinary taxable income from some other source. In these cases the "tax" is in effect a tax saving generated for the investor by the project in that he avoids having to pay taxes which, except for this project, he would otherwise have had to pay.

The only preference income item of concern for the operation of a 236 project is the excess depreciation taken, defined as the difference between the depreciation taken and the amount of depreciation which could have been taken under straight-line depreciation over the economic life of the project element. (The excluded portion of capital gains will be considered later in the discussion on taxes at sale.)

This is probably an appropriate place to comment about the meaning of assuming an investor to be in the 50 percent tax bracket. The term really means that the taxpayer-investor is subject to an average tax rate of 50 percent on the amount of taxable income which is sheltered by the tax loss from the project.[1] The base case computations assume that

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[1] For example, an individual taxpayer with a taxable income of $48,000 except for the rental project in which he shares ownership but claiming a tax loss of $26,000 as a result of his share in the project has his taxable income reduced by $13,000. The amount of tax avoided is computed as follows:

Income Range ($1,000's)	Tax Rate	Tax
22 to 26	40%	$1,600
26 to 32	45	2,700
32 to 38	50	3,000
38 to 44	55	3,300
44 to 48	60	2,400
Income sheltered, $26,000	Tax avoided,	$13,000

Average tax rate in the range of income sheltered from tax,

$$\frac{\$13,000}{\$26,000} = 0.50$$

the investors are in the 50 percent marginal tax bracket for the range of income sheltered (or, in later years, income taxed) throughout the life of the project, taken to be 21 years in the base case.

The schedules of depreciation and mortgage amortization needed for the calculation of annual cash flow and after-tax return are summarized in Table V-7. The project years shown include the development year in the numbering. Tax basis is that for the beginning of the tax year and is the remaining depreciable basis, not including land. Mortgage balance in the table is the balance at the beginning of the year. With the depreciation and mortgage amortization schedules the annual after-tax return can be computed and is tabulated in Table V-8.

F. GAINS TAX AT SALE

In the base cases it is assumed that the project is sold at the end of the 21st year (20th operating year) at a price equal to the mortgage balance (either neglecting expenses of sale or assuming that the sale proceeds net an amount equal to the mortgage balance or assuming that the buyer simply assumes the mortgage with no other payment to the project owners). There is thus no cash from the sale. Federal capital gains taxes are due, however, on the difference between the sale price and the

TABLE V-7A: DEPRECIATION AND AMORTIZATION SCHEDULES, NEW CONSTRUCTION -- NO STEP-UP IN BASIS

DEPRECIATICN

2	74460.88	3	70737.81	4	67200.94	5	63840.90	6	60648.84
7	57616.40	8	54735.55	9	51998.77	10	49398.83	11	46928.89
12	44582.44	13	42353.32	14	40235.65	15	38223.87	16	36312.67
17	34497.04	18	32772.19	19	31133.58	20	29576.89	21	28098.05

BASIS

2	1489218.00	3	1414757.00	4	1344019.00	5	1276818.00	6	1212977.00
7	1152328.00	8	1094711.00	9	1039975.50	10	987976.69	11	938577.81
12	891648.88	13	847066.44	14	804713.06	15	764477.38	16	726253.50
17	689940.81	18	655443.75	19	622671.56	20	591537.94	21	561961.00

AMORTIZATICN

2	7169.69	3	7707.44	4	8285.56	5	8907.00	6	9575.00
7	10293.13	8	11065.19	9	11895.13	10	12787.38	11	13746.44
12	14777.50	13	15885.81	14	17077.25	15	18358.13	16	19735.06
17	21215.25	18	22806.44	19	24517.00	20	26355.75	21	28332.44

ADJUSTED MORTGAGE

2	1629353.00	3	1622183.00	4	1614475.00	5	1606189.00	6	1597282.00
7	1587707.00	8	1577413.00	9	1566347.00	10	1554451.00	11	1541663.00
12	1527916.00	13	1513138.00	14	1497252.00	15	1480174.00	16	1461815.00
17	1442079.00	18	1420863.00	19	1398056.00	20	1373539.00	21	1347183.00

TABLE V-7A (CONTINUED): DEPRECIATION AND AMORTIZATION SCHEDULES,
NEW CONSTRUCTION -- DEVELOPER'S FEE ADDED TO BASIS

DEPRECIATION

2	83818.13	3	79627.19	4	75645.75	5	71863.50	6	68270.25
7	64856.75	8	61613.90	9	58533.20	10	55606.50	11	52826.15
12	50184.84	13	47675.59	14	45291.81	15	43027.23	16	40875.86
17	38832.07	18	36890.46	19	35045.94	20	33293.64	21	31628.95

BASIS

2	1676363.00	3	1592544.00	4	1512916.00	5	1437270.00	6	1365406.00
7	1297135.00	8	1232278.00	9	1170664.00	10	1112130.00	11	1056523.00
12	1003696.88	13	953512.00	14	905836.38	15	860544.56	16	817517.31
17	776641.44	18	737809.31	19	700918.81	20	665872.88	21	632579.19

AMORTIZATION

2	7169.69	3	7707.44	4	8285.56	5	8907.00	6	9575.00
7	10293.13	8	11065.19	9	11895.13	10	12787.38	11	13746.44
12	14777.50	13	15885.81	14	17077.25	15	18358.13	16	19735.06
17	21215.25	18	22806.44	19	24517.00	20	26355.75	21	28332.44

ADJUSTED MORTGAGE

2	1629353.00	3	1622183.00	4	1614475.00	5	1606189.00	6	1597282.00
7	1587707.00	8	1577413.00	9	1566347.00	10	1554451.00	11	1541663.00
12	1527916.00	13	1513138.00	14	1497252.00	15	1480174.00	16	1461815.00
17	1442079.00	18	1420863.00	19	1398056.00	20	1373539.00	21	1347183.00

TABLE V-7B: DEPRECIATION AND AMORTIZATION SCHEDULES, REHABILITATION -- NO STEP-UP IN BASIS

DEPRECIATION ON REHAE EXPENDITURES

2	274187.38	3	274187.38	4	274187.38	5	274187.38	6	274187.38

DEPRECIATION ON STRUCTURE SHELL

2	6875.00	3	6445.31	4	6042.48	5	5664.82	6	5310.77
7	5310.77	8	5310.76	9	5310.76	10	5310.76	11	5310.76
12	5310.76	13	5310.76	14	5310.76	15	5310.76	16	5310.76
17	5310.76	18	5310.76	19	5310.76	20	5310.76	21	5310.76

DEPRECIATION

2	281062.38	3	280632.69	4	280229.81	5	279852.19	6	279498.13
7	5310.77	8	5310.76	9	5310.76	10	5310.76	11	5310.76
12	5310.76	13	5310.76	14	5310.76	15	5310.76	16	5310.76
17	5310.76	18	5310.76	19	5310.76	20	5310.76	21	5310.76

BASIS

2	1480937.00	3	1199874.00	4	919241.31	5	639011.50	6	359159.31
7	79661.19	8	74350.38	9	69039.56	10	63728.80	11	58418.05
12	53107.29	13	47796.53	14	42485.77	15	37175.02	16	31864.26
17	26553.50	18	21242.73	19	15931.97	20	10621.21	21	5310.45

AMORTIZATION

2	7182.31	3	7721.00	4	8300.06	5	8922.69	6	9591.88
7	10311.31	8	11084.69	9	11916.06	10	12809.81	11	13770.56
12	14803.44	13	15913.69	14	17107.25	15	18390.38	16	19769.69
17	21252.44	18	22846.44	19	24559.94	20	26401.94	21	28382.06

ADJUSTED MORTGAGE

2	1632221.00	3	1625038.00	4	1617317.00	5	1609016.00	6	1600093.00
7	1590501.00	8	1580189.00	9	1569104.00	10	1557187.00	11	1544377.00
12	1530606.00	13	1515802.00	14	1499888.00	15	1482780.00	16	1464389.00
17	1444619.00	18	1423366.00	19	1400519.00	20	1375959.00	21	1349557.00

TABLE V-7B (CONTINUED): DEPRECIATION AND AMORTIZATION SCHEDULES,
REHABILITATION -- DEVELOPER'S FEE ADDED TO BASIS

DEPRECIATION ON EXCESS REHAB EXPENDITURES

2	21852.59	3	19667.34	4	17700.59	5	15930.53	6	14337.48
7	12903.73	8	11613.35	9	10452.02	10	9406.81	11	8466.13
12	7619.52	13	7619.51	14	7619.51	15	7619.51	16	7619.51
17	7619.52	18	7619.52	19	7619.52	20	7619.52	21	7619.52

DEPRECIATION ON REHAB EXPENDITURES

2	300000.00	3	300000.00	4	300000.00	5	300000.00	6	300000.00
7	C.0								

DEPRECIATION ON STRUCTURE SHELL

2	6875.00	3	6445.31	4	6042.48	5	5664.82	6	5310.77
7	5310.77	8	5310.76	9	5310.76	10	5310.76	11	5310.76
12	5310.76	13	5310.76	14	5310.76	15	5310.76	16	5310.76
17	5310.76	18	5310.76	19	5310.76	20	5310.76	21	5310.76

DEPRECIATION

2	328727.56	3	326112.63	4	323743.00	5	321595.31	6	319648.19
7	18214.49	8	16924.11	9	15762.77	10	14717.57	11	13776.88
12	12930.27	13	12930.27	14	12930.27	15	12930.27	16	12930.27
17	12930.28	18	12930.28	19	12930.28	20	12930.28	21	12930.28

BASIS

2	1828526.00	3	1499798.00	4	1173685.00	5	849942.00	6	528346.69
7	208698.50	8	190484.00	9	173559.88	10	157797.06	11	143079.44
12	129302.50	13	116372.19	14	103441.88	15	90511.56	16	77581.25
17	64650.98	18	51720.70	19	38790.42	20	25860.14	21	12929.87

TABLE V-8A: ANNUAL AFTER-TAX RETURN, NEW CONSTRUCTION -- NO STEP-UP IN BASIS

CASH FLOW: (PROFIT=RPROF*IMPLIED EQUITY)

YR	AMORTIZATION	DEPRECIATION	TAXABLE INC.	EXCESS DEPR.	INCOME TAX	AFTER TAX RETURN
1	0.0	0.0	0.0	0.0	-69507.00	69507.00
2	7169.69	74460.88	-56428.79	37230.43	-24491.35	35353.75
3	7707.44	70737.81	-52167.98	33507.36	-22733.25	33595.65
4	8285.56	67200.94	-48052.98	29970.49	-21029.44	31891.84
5	8907.00	63840.90	-44071.50	26610.45	-19374.70	30237.10
6	9575.00	60648.84	-40211.45	23418.39	-17763.88	28626.28
7	10293.13	57616.40	-36460.88	20385.95	-16191.84	27054.24
8	11065.19	54735.55	-32807.96	17505.10	-14653.47	25515.87
9	11895.13	51998.77	-29241.25	14768.32	-13143.79	24006.19
10	12787.38	49398.83	-25749.05	12168.38	-11657.69	22520.09
11	13746.44	46928.89	-22320.05	9698.44	-10190.18	21052.58
12	14777.50	44582.44	-18942.54	7351.99	-8736.07	19598.47
13	15885.81	42353.32	-15605.11	5122.87	-7290.27	18152.66
14	17077.25	40235.65	-12296.00	3005.20	-5847.48	16709.88
15	18358.13	38223.87	-9003.34	993.42	-4402.33	15264.73
16	19735.06	36312.67	-5715.21	0.0	-2857.61	13720.00
17	21215.25	34497.04	-2419.39	0.0	-1209.70	12072.09
18	22806.44	32772.19	896.65	0.0	448.32	10414.07
19	24517.00	31133.58	4245.82	0.0	2122.91	8739.49
20	26355.75	29576.89	7641.26	0.0	3820.63	7041.77
21	28332.44	28098.05	11096.79	0.0	5548.39	5314.00

TABLE V-8A (CONTINUED): ANNUAL AFTER-TAX RETURN, NEW CONSTRUCTION -- DEVELOPER'S FEE ADDED TO BASIS

CASH FLOW: (PROFIT=RPROF*IMPLIED EQUITY)

YR	AMORTIZATION	DEPRECIATION	TAXABLE INC.	EXCESS DEPR.	INCOME TAX	AFTER TAX RETURN
1	0.0	0.0	0.0	0.0	-69507.00	69507.00
2	7169.69	83818.13	-65786.00	41909.05	-28702.10	39564.50
3	7707.44	79627.19	-61057.35	37718.11	-26756.86	37619.26
4	8285.56	75645.75	-56497.79	33736.68	-24875.23	35737.63
5	8907.00	71863.50	-52094.10	29954.43	-23051.61	33914.01
6	9575.00	68270.25	-47832.85	26361.18	-21280.31	32142.71
7	10293.13	64856.75	-43701.23	22947.68	-19555.84	30418.24
8	11065.19	61613.90	-39686.31	19704.82	-17872.67	28735.07
9	11895.13	58533.20	-35775.67	16624.12	-16225.42	27087.82
10	12787.38	55606.50	-31956.73	13697.43	-14608.62	25471.02
11	13746.44	52826.15	-28217.31	10917.07	-13016.95	23879.35
12	14777.50	50184.84	-24544.95	8275.77	-11444.89	22307.29
13	15885.81	47675.59	-20927.38	5766.52	-9887.04	20749.44
14	17077.25	45291.81	-17352.16	3382.74	-8337.80	19200.20
15	18358.13	43027.23	-13806.70	1118.15	-6791.54	17653.93
16	19735.06	40875.86	-10278.40	0.0	-5139.20	16001.60
17	21215.25	38832.07	-6754.42	0.0	-3377.21	14239.61
18	22806.44	36890.46	-3221.63	0.0	-1610.81	12473.21
19	24517.00	35045.94	333.46	0.0	166.73	10695.67
20	26355.75	33293.64	3924.51	0.0	1962.25	8900.14
21	28332.44	31628.95	7565.88	0.0	3782.94	7079.46

TABLE V-8B: ANNUAL AFTER-TAX RETURN, REHABILITATION -- NO STEP-UP IN BASIS

CASH FLOW: (PROFIT=RPROF*IMPLIED EQUITY)

YR	AMORTIZATION	DEPRECIATION	TAXABLE INC.	EXCESS DEPR.	INCOME TAX	AFTER TAX RETURN
1	0.0	0.0	0.0	0.0	-75125.00	75125.00
2	7182.31	281062.38	-262998.50	207015.56	-110797.69	121679.19
3	7721.00	280632.69	-262030.13	206585.88	-110356.44	121237.94
4	8300.06	280229.81	-261048.19	206183.00	-109905.75	120787.25
5	8922.69	279852.19	-260047.94	205805.38	-109443.38	120324.88
6	9591.88	279498.13	-259024.69	205640.56	-108948.25	119829.75
7	10311.31	5310.77	15882.09	0.0	7941.04	2940.50
8	11084.69	5310.76	16655.46	0.0	8327.73	2553.81
9	11916.06	5310.76	17486.84	0.0	8743.42	2138.12
10	12809.81	5310.76	18380.59	0.0	9190.30	1691.24
11	13770.56	5310.76	19341.34	0.0	9670.67	1210.87
12	14803.44	5310.76	20374.22	0.0	10187.11	694.43
13	15913.69	5310.76	21484.47	0.0	10742.23	139.30
14	17107.25	5310.76	22678.03	0.0	11339.02	-457.48
15	18390.38	5310.76	23961.16	0.0	11980.58	-1099.04
16	19769.69	5310.76	25340.46	0.0	12670.23	-1788.69
17	21252.44	5310.76	26823.21	0.0	13411.61	-2530.07
18	22846.44	5310.76	28417.21	0.0	14208.61	-3327.07
19	24559.94	5310.76	30130.71	0.0	15065.36	-4183.82
20	26401.94	5310.76	31972.71	0.0	15986.36	-5104.82
21	28382.06	5310.76	33952.84	0.0	16976.42	-6094.88

TABLE V-8B (CONTINUED): ANNUAL AFTER-TAX RETURN, REHABILITATION -- DEVELOPER'S FEE ADDED TO BASIS

CASH FLOW: (PROFIT=REPROF*IMPLIED EQUITY)

YR	AMORTIZATION	DEPRECIATION	TAXABLE INC.	EXCESS DEPR.	INCOME TAX	AFTER TAX RETURN
1	0.0	0.0	0.0	0.0	-75125.00	75125.00
2	7182.31	328727.56	-310663.69	237301.25	-131601.69	142483.19
3	7721.00	326112.63	-307510.06	234686.31	-130286.38	141167.88
4	8300.06	323743.00	-304561.38	232316.69	-129049.00	139930.50
5	8922.69	321595.31	-301791.06	230169.00	-127878.56	138760.06
6	9591.88	319648.19	-299174.75	228411.13	-126746.25	137627.75
7	10311.31	18214.49	2978.36	1977.43	1686.92	9194.61
8	11084.69	16924.11	5042.11	687.05	2589.76	8291.77
9	11916.06	15762.77	7034.83	0.0	3517.41	7364.13
10	12809.81	14717.57	8973.78	0.0	4486.89	6394.65
11	13770.56	13776.88	10875.22	0.0	5437.61	5443.93
12	14803.44	12930.27	12754.70	0.0	6377.35	4504.19
13	15913.69	12930.27	13864.96	0.0	6932.48	3949.06
14	17107.25	12930.27	15058.52	0.0	7529.26	3352.28
15	18390.38	12930.27	16341.64	0.0	8170.82	2710.72
16	19769.69	12930.27	17720.95	0.0	8860.48	2021.06
17	21252.44	12930.28	19203.70	0.0	9601.85	1279.69
18	22846.44	12930.28	20797.70	0.0	10398.85	482.69
19	24559.94	12930.28	22511.20	0.0	11255.60	-374.06
20	26401.94	12930.28	24353.20	0.0	12176.60	-1295.06
21	28382.06	12930.28	26333.32	0.0	13166.66	-2285.12

adjusted basis of the project (including land value). Because of the rapid depreciation available, especially for the rehabilitation case, sale at the mortgage balance subjects the owners to substantial gains taxes. This occurs because the mortgage balance drops very slowly in the early years, while the depreciation deductions are largest in the early years, leaving a basis for tax purposes well below the amount still due on the mortgage loan.

For the base cases there is no recapture tax to compute in either the new construction or rehabilitation cases because the recapture period has expired in both cases, i.e., 120 months (plus the development year) in the case of new construction and 200 months (plus the development year) in the case of rehabilitation. Later, when the investment consequences of sale at earlier times are examined, it will be necessary to consider the recapture tax. Even in the base cases, however, it is necessary to consider the tax on preference income in the form of the capital gains exclusion, i.e., the one-half of capital gain that is excluded from tax at ordinary income tax rates. The minimum tax (10 percent) must be paid on the excluded portion of capital gain to the extent that it exceeds the sum of the $30,000 exemption of preference items and taxes otherwise paid. In the present cases it is assumed that we are interested in a marginal calculation, i.e., one in which this particular investment must stand alone and not depend on the $30,000 exemption for preference items. The regular capital gains tax which must be paid (one-half the amount of capital gain TIMES the ordinary income tax rate) does reduce the amount of the excluded capital gain which is subject to the minimum tax. Table

V-9 summarizes the capital gains calculation for the base cases as well as for selected examples of sale in years earlier than the twenty-first. These will be needed later.[1]

G. TAX SINKING FUND

In cases for which the after-tax cash proceeds from sale are negative (because of the large gains taxes and zero cash proceeds after paying off the mortgage loan balance) a conservative assumption is made: sufficient after-tax returns from the latest possible years of operation of the project are placed into a tax sinking fund such that by accumulating at a modest after-tax rate of interest (4 percent) the value of the tax sinking fund is exactly enough to match the cash loss at sale. In such a case, the value of the after-tax returns of the project is computed only for the after-tax returns remaining after the tax sinking fund is established. This approach is taken because typical investors do not want to be presented with an investment having a period of years of re-

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[1] In the base cases we continue to assume that the project owner/investor is in the 50 percent income tax bracket and that the effective capital gains tax rate is thus 25 percent. Depending on the number of ownership shares into which the project is divided, however, the amount of capital gain subject to tax for any single investor may be so large that he would, in the year of sale, be forced into a higher income tax bracket. McKee (1970) makes the interesting comment that the combination of the minimum tax on the capital gains exclusion and the provision of the 1969 Tax Reform Act that the maximum bracket rate for earned income is 50 percent means that for a high-income taxpayer forced into, let us say, the 70 percent bracket because of capital gains upon sale of a 236 project he would be taxed on his capital gain at an effective rate of 46.5 percent. The base case assumption that the effective capital gains tax rate is 25 percent may be a bit optimistic. However, for a particular investor, a sufficiently small share of the project capital gain and tax provisions allowing income averaging over a period of several years mean that the base case assumption is not entirely unrealistic.

TABLE V-9A: INCOME TAX AT SALE, NEW CONSTRUCTION

```
SALE YR=  9         BASISF=  987976.69        ADMTGF= 1554451.00

GAINS TAX CALCULATION:  (NO STEP-UP IN BASIS)
 CASH FROM SALE=          0.0
 SALE PRICE,  1554451.00, LESS BASIS,   987976.69 LESS LAND,    50000.00 = TAXABLE GAIN,   516474.31
GAIN SUBJ TO RECAPTURE,   203397.31 TIMES RECAPTURE FRACTION,        0.24 = GAIN RECAPTURED,    48815.39
TIMES INCOME TAX RATE,  0.50 = RECAPTURE TAX,    24407.70
GAIN AS CAPITAL GAIN=    467658.88 TIMES CAPITAL GAINS TAX RATE,  0.25= CAPITAL GAINS TAX,   116914.69
PREF TAX=MIN TAX*(0.5*CAP GAIN -REGULAR SALE TAXES)=     9250.70     TOTAL TAXES ON SALE=    150573.06
AFTER TAX GAIN FROM SALE= CASH LESS TAX=   -150574.00

SALE YR= 10         BASISF=  938577.81        ADMTGF= 1541663.00

GAINS TAX CALCULATION:  (NO STEP-UP IN BASIS)
 CASH FROM SALE=          0.0
 SALE PRICE,  1541663.00, LESS BASIS,   938577.81 LESS LAND,    50000.00 = TAXABLE GAIN,   553085.19
GAIN SUBJ TO RECAPTURE,   215566.19 TIMES RECAPTURE FRACTION,        0.12 = GAIN RECAPTURED,    25867.98
TIMES INCOME TAX RATE,  0.50 = RECAPTURE TAX,    12933.99
GAIN AS CAPITAL GAIN=    527217.19 TIMES CAPITAL GAINS TAX RATE,  0.25= CAPITAL GAINS TAX,   131804.25
PREF TAX=MIN TAX*(0.5*CAP GAIN -REGULAR SALE TAXES)=    11887.02     TOTAL TAXES ON SALE=    156625.19
AFTER TAX GAIN FROM SALE= CASH LESS TAX=   -156626.00

SALE YR= 21         BASISF=  533862.94        ADMTGF= 1318850.00

GAINS TAX CALCULATION:  (NO STEP-UP IN BASIS)
 CASH FROM SALE=          0.0
 SALE PRICE,  1318850.00, LESS BASIS,   533862.94 LESS LAND,    50000.00 = TAXABLE GAIN,   734987.06
GAIN SUBJ TO RECAPTURE,   210746.13 TIMES RECAPTURE FRACTION,        0.0  = GAIN RECAPTURED,        0.0
TIMES INCOME TAX RATE,  0.50 = RECAPTURE TAX,        0.0
GAIN AS CAPITAL GAIN=    734987.06 TIMES CAPITAL GAINS TAX RATE,  0.25= CAPITAL GAINS TAX,   183746.75
PREF TAX=MIN TAX*(0.5*CAP GAIN -REGULAR SALE TAXES)=    18374.67     TOTAL TAXES ON SALE=    202121.38
AFTER TAX GAIN FROM SALE= CASH LESS TAX=   -202122.00

SALE YR= 21         BASISF=  600950.19        ADMTGF= 1318850.00

GAINS TAX CALCULATION:  (DEVELOPER'S FEE ADDED TO BASIS)
 CASH FROM SALE=          0.0
 SALE PRICE,  1318850.00, LESS BASIS,   600950.19 LESS LAND,    50000.00 = TAXABLE GAIN,   667899.81
GAIN SUBJ TO RECAPTURE,   237231.38 TIMES RECAPTURE FRACTION,        0.0  = GAIN RECAPTURED,        0.0
TIMES INCOME TAX RATE,  0.50 = RECAPTURE TAX,        0.0
GAIN AS CAPITAL GAIN=    667899.81 TIMES CAPITAL GAINS TAX RATE,  0.25= CAPITAL GAINS TAX,   166974.94
PREF TAX=MIN TAX*(0.5*CAP GAIN -REGULAR SALE TAXES)=    16697.48     TOTAL TAXES ON SALE=    183672.38
AFTER TAX GAIN FROM SALE= CASH LESS TAX=   -183673.00
```

TABLE V-9B: INCOME TAX AT SALE, REHABILITATION

```
SALE YR=  9         BASISF=   63728.80        ADMTGF= 1557187.00


GAINS TAX CALCULATION:  (NO STEP-UP)
 CASH FROM SALE=          0.0
 SALE PRICE,  1557187.00, LESS BASIS,    63728.80 LESS LAND,    50000.00 = TAXABLE GAIN,  1443458.00
GAIN SUBJ TO RECAPTURE,   824833.69 TIMES RECAPTURE FRACTION,        1.00 = GAIN RECAPTURED,   824833.69
TIMES INCOME TAX RATE,  0.50 = RECAPTURE TAX,   412416.81
GAIN AS CAPITAL GAIN=    618624.31 TIMES CAPITAL GAINS TAX RATE,  0.25= CAPITAL GAINS TAX,   154656.06
PREF TAX=MIN TAX*(0.5*CAP GAIN -REGULAR SALE TAXES)=        0.0      TOTAL TAXES ON SALE=    567072.88
AFTER TAX GAIN FROM SALE= CASH LESS TAX=   -567072.88


SALE YR= 10         BASISF=   58418.05        ADMTGF= 1544377.00


GAINS TAX CALCULATION:  (NO STEP-UP)
 CASH FROM SALE=          0.0
 SALE PRICE,  1544377.00, LESS BASIS,    58418.05 LESS LAND,    50000.00 = TAXABLE GAIN,  1435959.00
GAIN SUBJ TO RECAPTURE,   756097.63 TIMES RECAPTURE FRACTION,        0.92 = GAIN RECAPTURED,   695609.81
TIMES INCOME TAX RATE,  0.50 = RECAPTURE TAX,   347804.88
GAIN AS CAPITAL GAIN=    740349.19 TIMES CAPITAL GAINS TAX RATE,  0.25= CAPITAL GAINS TAX,   185087.25
PREF TAX=MIN TAX*(0.5*CAP GAIN -REGULAR SALE TAXES)=        0.0      TOTAL TAXES ON SALE=    532892.13
AFTER TAX GAIN FROM SALE= CASH LESS TAX=   -532892.13


SALE YR= 18         BASISF=   15931.97        ADMTGF= 1400519.00


GAINS TAX CALCULATION:  (NO STEP-UP)
 CASH FROM SALE=          0.0
 SALE PRICE,  1400519.00, LESS BASIS,    15931.97 LESS LAND,    50000.00 = TAXABLE GAIN,  1334587.00
GAIN SUBJ TO RECAPTURE,   206210.00 TIMES RECAPTURE FRACTION,        0.0  = GAIN RECAPTURED,         0.0
TIMES INCOME TAX RATE,  0.50 = RECAPTURE TAX,         0.0
GAIN AS CAPITAL GAIN=    1334587.00 TIMES CAPITAL GAINS TAX RATE,  0.25= CAPITAL GAINS TAX,   333646.75
PREF TAX=MIN TAX*(0.5*CAP GAIN -REGULAR SALE TAXES)=    33364.66      TOTAL TAXES ON SALE=    367011.38
AFTER TAX GAIN FROM SALE= CASH LESS TAX=   -367011.38


SALE YR= 21         BASISF=      -0.31        ADMTGF= 1321174.00


GAINS TAX CALCULATION:  (WITH OR WITHOUT DEVELOPER'S FEE ADDED TO BASIS)
 CASH FROM SALE=          0.0
 SALE PRICE,  1321174.00, LESS BASIS,       -0.31 LESS LAND,    50000.00 = TAXABLE GAIN,  1271174.00
GAIN SUBJ TO RECAPTURE,         1.31 TIMES RECAPTURE FRACTION,        0.0  = GAIN RECAPTURED,         0.0
TIMES INCOME TAX RATE,  0.50 = RECAPTURE TAX,         0.0
GAIN AS CAPITAL GAIN=    1271174.00 TIMES CAPITAL GAINS TAX RATE,  0.25= CAPITAL GAINS TAX,   317793.50
PREF TAX=MIN TAX*(0.5*CAP GAIN -REGULAR SALE TAXES)=    31779.34      TOTAL TAXES ON SALE=    349572.81
AFTER TAX GAIN FROM SALE= CASH LESS TAX=   -349572.81
```

turn terminated with a large loss. The tax sinking fund calculations for the base cases are presented in Table V-10. The accumulated value of the tax sinking fund is seen to be exactly equal to the cash required upon sale. Discussion of the discounting of the remaining after-tax returns and a further comment on the tax sinking fund follow in the next two sections.

H. INVESTMENT ANALYSIS

Before proceeding to discuss the investment value of the base case projects, this is an appropriate point at which to review briefly the choices of indices available for real estate investment analysis. My bias in this work is for using discounted present value, but because of the tradition of other methods--often little more than rules of thumb--I shall at least outline them.

1. Annual Net Cash Flow before Debt Service[1]

This parameter has been used as a way of relating the market value of a project and its cash flow before debt service and taxes. It is a measure of the possible before-tax return if the project were bought outright, or conversely, can be used to estimate market value from the net cash flow before financing and the appropriate capitalization rate, or before-tax overall rate of return. The relationship is thus

$$\text{Market Value} = \text{Net Cash Flow before Debt Service} \div \text{Capitalization Rate}$$

$$\text{or Overall Rate of Return} = \text{Net Cash Flow} \div \text{Purchase Price}$$

[1] Debt service means the annual payment on the mortgage loan.

The deficiencies of this index are:

-- it fails to take into account the value of tax losses available through depreciation allowances;

-- it fails to consider possible unevenness in cash flow over time;

-- it fails to consider the holding period (investment horizon) and consequences of sale;

-- it falsely assumes that the funds in a Section 236 project which are provided as interest subsidy payments by the Federal government are at least potentially available to the owner as a source of return in exchange for full equity financing of the project.

2. Annual Before-Tax Cash Return (after debt service)

This parameter, expressed as

$$\text{Before-Tax Return} = \text{Net Cash after Debt Service} \div \text{Equity Investment}$$

offers a measure of return on actual investment after obtaining a mortgage loan. In the case of a Section 236 project it would be a maximum of 6 percent annually on an investment presumed to be 10 percent of the original total replacement cost. The deficiencies of this index are:

-- tax consequences are not taken into account, specifically the fact that the portion of mortgage payment devoted to principal repayment is subject to tax as income and that no account is taken of the tax shelter available through depreciation allowances;

-- unevenness of after-tax returns over time is ignored;

-- holding period and consequences of sale are ignored.

3. Annuai After-Tax Rate of Return

Tax factors are taken into account on an annual basis and the re-

sulting after-tax return is divided by the original equity invested. There is still the problem of changes in the after-tax rate of return over the years the project is owned, which makes it difficult to compare the relative attractiveness of two different investments.

4. Average After-Tax Rate of Return

This index is calculated by summing all the after-tax returns, including the consequences of sale, subtracting the equity investment (to obtain total returns on investment), dividing by the number of years held (to obtain average return), and dividing again by the equity investment (to obtain the average rate of return on investment). Now everything but the time value or opportunity cost of money has been taken into account, but this is a major omission, unless the investor in question can see no difference between a dollar received next year and one received 20 years from now. In this work, I shall assume that the investor knows that funds available for investment could earn an after-tax yield elsewhere at some rate greater than zero, so that the further in the future a return occurs the greater it must be to warrant a given current outlay of investment funds.

5. Payback Period

This index interrupts the neat progression to discounted cash flow as an investment index, but it fits neatly nowhere itself. This index only indicates the period of time which must elapse before the after-tax returns reach a sum equal to the original equity investment. It indicates a recovery period after which any remaining returns are considered "gravy." The payback period, however, offers no way in which to take into account the tax consequences beyond the payback period, such as gains taxes at sale, nor to take into account the time value of the future returns from a project.

6. Discounted Present Value or Discounted Cash Flow

The basic relation I shall use for the discounted present value of the after-tax returns over the period of ownership of a project is

$$PV = \sum_{N=1}^{N=NY} \frac{ARET(N)}{(1 + RRATE)^N} + \frac{GSALE}{(1 + RRATE)^{NY}}$$

where ARET(N) is the after-tax return at the end of Year N,

GSALE is the net gain from sale after taxes and payment of balance due on mortgage,

NY is the year in which the project is sold, and

RRATE is the discount rate.

When GSALE is negative and a tax sinking fund is used to exactly match the amount of the negative value of GSALE, the value of GSALE is zero in such a case and the after-tax returns are truncated, or cut off, at the point where the tax sinking fund starts. With this index the above objections are met once the appropriate discount rate is selected. The discount rate is just the corresponding parameter to interest rate in a savings account having an interest rate with a yield equal to the return on investment elsewhere of comparable risk. For example, if the appropriate rate of return for a given type of investment is 15 percent, then an investment offering to repay $1.15 one year from now is worth (has a discounted present value of) $1.00

$$\text{or} \quad PV = \frac{\$1.15}{(1 + 0.15)} = \$1.00$$

A discounted present value analysis thus regards each year's after-tax return as the result of a mini-investment and asks, what should I be willing to invest now in order to have that future return represent an interest

rate on my funds of "X" percent? For investment purposes, then, each element of after-tax return can be regarded as partly a return of invested funds and partly as a return on (interest or yield from) invested funds. With this approach one need not have an investment in which the return on investment is received annually and the investment itself is returned at the end of the investment period. It is possible to consider investments with very irregular patterns of return yet be able to compare them (what is their present value?) with alternative investments.

A further comment about the tax sinking fund is in order. Some analysts insist upon discounting a negative return such as a net loss at sale at the investor's discount rate. However, at the high rates of return being demanded by investors in real estate syndications--in the range of 15 to 25 percent--using those rates to discount negative returns is the equivalent of assuming those are the interest rates with which the tax fund (outlined above) accumulates or, alternatively, that a small amount of funds in addition to those given the builder/developer can be invested at the outset elsewhere, not in this project, and compound at the same rate as his discount rate over the entire holding period. Because either of these assumptions are highly speculative, most of the computations shown here assume the tax fund approach. Some results will be indicated for the no-tax-sinking-fund case.

The tax sinking fund approach is admittedly a conservative one. If the investors demand 15 percent after-tax return in a new project or 25 percent in a more risky rehabilitation project, then these rates could be assumed to represent their opportunity costs, the implication being that the investor could always invest his money during the period of ownership and earn these rates of return. However, this requires that investment

opportunities equivalent to the projects at hand continue to be available and that accumulated cash returns could be withdrawn from such investments on demand in the year of sale of the project. These assumptions are apparently too speculative for the average tax shelter investor. The tax sinking fund analysis is the practice used. This does not mean that the investor must actually use a sinking fund, of course. He is free to do as he likes with his after-tax returns. Use of the tax sinking fund in the investment analysis is simply a conservative way of satisfying the investor's concern with the eventuality of large losses in the year of sale because of the gains taxes.

7. Internal Rate of Return

The internal rate of return of an investment with a specified equity investment and stream of after-tax returns is just that discount rate which will discount the stream of after-tax returns exactly to the original equity investment. That is, the sum of the discounted present values of all of the after-tax returns equals the equity investment. This method also allows comparison with alternative investments. However, in the event the investment in question has negative cash flows at some point in the future, these negative cash flows are discounted as heavily as the positive cash flows. The tax sinking fund introduced above is one way of overcoming this flaw in the internal rate of return as an investment index.

The relationship between discounted present value, after-tax returns, and the discount rate can be thought of in the following way: (1) one can set the discount rate (after-tax rate of return demanded by an investor) and

compute the discounted present value of a stream of after-tax cash flows, i.e., the amount which that investor would be willing to invest now in return for the specified stream of returns, or (2) one may set the present value at some level representing an actual investment and solve for the discount rate (RRATE in the formula) which will cause the sum of the discounted cash flows to exactly equal the input investment amount. In the latter case the discount rate found is the internal rate of return. These two investment indices will be of primary interest in the remaining discussion. The other investment indices will be considered only in a secondary fashion.

I. INVESTMENT RESULTS

In the next few sections the following investment analysis results will be described:

(1) investment value of a project meeting the description of the base cases,

(2) sensitivity to the parameters assumed in the base cases of the investment value of a project,

(3) relative advantages to the developer of selling a project through tax shelter syndication and of holding a project as an investment,

(4) advantages of deferred payment of capital contributions by limited partner/investors.

Later chapters will deal with investment risks, government costs and evaluation of alternative incentive devices.

Tax sinking fund calculations and after-tax return summaries for the rehabilitation and new construction cases are shown in Table V-10. Present values of the after-tax returns are found by discounting the after-tax re-

TABLE V-10A: DISCOUNTED RETURNS AND TAX SINKING FUND ACCUMULATION, NEW CONSTRUCTION -- NO STEP-UP IN BASIS

YR	RETURNS AND TAX FUND AFTER TAX RET	DISC PRES VAL	TAX SINKG FND	TAX FUND W/INTEREST
1	69507.00	60440.89		
2	35353.75	26732.55		
3	33595.65	22089.72		
4	31891.84	18234.31		
5	30237.10	15033.23		
6	28626.28	12375.98		
7	27054.24	10170.73		
8	25515.87	8341.23		
9	24006.19	6824.10		
10	14531.09	3591.89	7989.00	12298.62
11			21052.58	31162.79
12			19598.47	27894.59
13	ACCUM. PRESENT VALUE = 183834.00		18152.66	24843.06
14			16709.88	21988.96
15	PV/MRT =	0.1128	15264.73	19314.69
16			13720.00	16692.44
17			12072.09	14122.61
18			10414.07	11714.40
19			8739.49	9452.62
20			7041.77	7323.44
21			5314.00	5314.00

ACCUM. TAX FUND = 202122.00

TABLE V-10A (CONTINUED): DISCOUNTED RETURNS AND TAX SINKING FUND ACCUMULATION, NEW CONSTRUCTION -- DEVELOPER'S FEE ADDED TO BASIS

YR	AFTER TAX RET	DISC PRES VAL	TAX SINKG FND	TAX FUND W/INTEREST
1	69507.00	60440.89		
2	39564.50	29916.48		
3	37619.26	24735.32		
4	35737.63	20433.16		
5	33914.01	16861.31		
6	32142.71	13896.23		
7	30418.24	11435.39		
8	28735.07	9393.60		
9	27087.82	7700.09		
10	25471.02	6296.09		
11	23879.35	5132.74		
12	1502.84	280.89	20804.45	29611.07
13			20749.44	28396.90
14			19200.20	25266.05
15			17653.93	22337.79
16	ACCUM. PRESENT VALUE = 206522.00		16001.60	19468.34
17			14239.61	16658.29
18	PV/MRT = 0.1268		12473.21	14030.65
19			10695.67	11568.43
20			8900.14	9256.15
21			7079.46	7079.46

ACCUM. TAX FUND = 183673.00

SYNDICATION PAYMENTS:

PAYM.	DISC, PRES. VAL.	PAYM.	DISC, PRES. VAL.	PAYM.	DISC, PRES. VAL.	PAYM.
1	78653.94	2	68394.75	3	59473.75	

TOTAL PV OF CAP CONTRIB= 206522.44

3PAYMENTS OF 78653.94=TOT CAP CONTRIB= 235961.81 TOT CAP CONTR/MRT= 0.1448

TABLE V-10B: DISCOUNTED RETURNS AND TAX SINKING FUND ACCUMULATION, REHABILITATION -- NO STEP-UP IN BASIS

YR	RETURNS AND TAX FUND AFTER TAX RET	DISC PRES VAL	TAX SINKG FND	TAX FUND W/INTEREST
1	75125.00	60100.00		
2	121679.19	77874.63		
3	121237.94	62073.82		
4	120787.25	49474.46		
5	44398.42	14545.20	75936.44	142226.13
6			119829.75	215804.63
7			2940.50	5091.95
8	ACCUM. PRESENT VALUE =	264068.00	2553.81	4252.25
9			2138.12	3423.17
10			1691.24	2603.57
11	PV/MRT =	16.18	1210.87	1792.37
12			694.43	988.38
13			139.30	190.65
14			-457.48	-602.01
15			-1099.04	-1390.63
16			-1788.69	-2176.21
17			-2530.07	-2959.81
18			-3327.07	-3742.49
19			-4183.82	-4525.21
20			-5104.82	-5309.01
21			-6094.88	-6094.88

ACCUM. TAX FUND = 349573.00

TABLE V-10B (CONTINUED): DISCOUNTED RETURNS AND TAX SINKING FUND ACCUMULATION, REHABILITATION -- DEVELOPER'S FEE ADDED TO BASIS

YR	RETURNS AND TAX FUND AFTER TAX RET	DISC PRES VAL	TAX SINKG FND	TAX FUND W/INTEREST
1	75125.00	60100.00		
2	142483.19	91189.19		
3	141167.88	72277.94		
4	139930.50	57315.53		
5	126920.25	41589.23	11839.81	22175.44
6			137627.75	247857.50
7			9194.61	15921.97
8	ACCUM. PRESENT VALUE = 322472.00		8291.77	13806.30
9			7364.13	11790.12
10			6394.65	9844.21
11	PV/MRT = 0.1976		5443.93	8058.30
12			4504.19	6410.83
13			3949.06	5404.54
14			3352.28	4411.36
15			2710.72	3429.91
16			2021.06	2458.93
17			1279.69	1497.05
18			482.69	542.96
19			-374.06	-404.58
20			-1295.06	-1346.86
21			-2285.12	-2285.12
			ACCUM. TAX FUND = 349573.00	

SYNDICATION PAYMENTS:

PAYM.	DISC, PRES. VAL.	PAYM.	DISC, PRES. VAL.	PAYM.	DISC, PRES. VAL.	PAYM.
1	132160.50	2	105728.38	3	84582.69	

TOTAL PV OF CAP CONTRIB= 322471.56

3PAYMENTS OF 132160.50=TOT CAP CONTRIB= 396481.50 TOT CAP CONTR/MRT= 0.2429

turns which remain after the necessary returns are committed to the tax sinking fund to cover the tax liability at sale. Discount rates are 25 percent for the rehabilitation case and 15 percent for the new construction case. The resulting sum of present values represents the amount of money an investor in the 50 percent income tax bracket would be willing to pay to the developer at the outset of such a project in order to enjoy the after-tax returns offered by the project, with resulting yields of 25 percent and 15 percent respectively. Typical arrangements in such projects actually involve a schedule of capital contributions made over a period of years in several installments. We shall consider this at a later point in the discussion (Section L).

A developer has a financial incentive to produce a project as long as the discounted present value (using for discount rate the developer's after-tax rate of return on alternative investments) is sufficiently greater than his actual costs for developing the project over and above the mortgage amount. Passive investors (those not actively developing real estate but having excess funds to invest) will be willing to offer for a project the present value of the project to them at the average rate of return (after taxes) appropriate to investments of comparable risk.

As indicated in the discussion on syndication (Chapter III), the developer views this latter possibility as a way of obtaining immediate cash proceeds from a project as income now (or a fee) rather than as an investment. For the case in which the investor spreads his capital contributions over a period of time in several installments, the developer can be thought of as receiving a spread fee for his efforts or as enjoying some investment income on the fee foregone until it is covered by a capital payment representing fee with compound interest. For convenience I assume the developer's

discount rate to be the same as the investors' in the case of spread payments.

We recall from the description of project costs that the cash outlay which the developer must make is typically the equivalent of 3 percent of the mortgage; with this in mind we turn to the results of the present value and internal rate of return calculations for the base cases, presented in Table V-11. The present values are shown in terms of their relationship to the mortgage amount, that is, the present value is expressed as a percentage of the mortgage amount. This helps to give the results more generality and, in fact, represents an increasingly accepted practice in marketing this kind of investment--with good reason, since both the depreciation allowances (hence the tax savings of the project) and the allowable project dividends are related directly to the mortgage amount. From the point of view that development incentives are indicated by high present values and internal rates of return, primary observations from Table V-11 are:

(1) Given the discount rates assumed, the present value of both new construction and rehabilitation projects is much greater than the 3 percent cash required to develop the project over and above the mortgage and therefore offers a substantial incentive to the developer.[1]

(2) The present value of the rehabilitation project is much larger than that for the new construction project as is the internal rate of return in the case of a project held by the developer.

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[1] A later discussion focuses on the relationships between project investment value and the investors rate of return.

TABLE V-11A: BASE CASE INVESTMENT RESULTS -- DEVELOPER HOLDS PROPERTY[1]

	ANNUAL BEFORE-TAX CASH RETURN[2]	ANNUAL AFTER-TAX CASH RETURN[3]	INTERNAL RATE OF RETURN[4]	PRESENT VALUE OF AFTER-TAX RETURNS, W/TAX FUND[5]	PRESENT VALUE OF AFTER-TAX RETURNS, NO TAX FUND[5]	AVERAGE ANNUAL RETURN (AFTER TAX; NO TAX FUND[6]
NEW	22%	11.0	106.77	11.28	11.98	23.76
REHABILITATION	22%	11.0	183.86	16.18	19.51	25.99

NOTES: (1) EQUITY INVESTMENT TAKEN TO BE 3% OF MORTGAGE AMOUNT.

(2) DIVIDEND ÷ EQUITY

(3) TAX RATE X DIVIDEND ÷ EQUITY

(4) DISCOUNT RATE REQUIRED TO EQUATE PRESENT VALUE OF AFTER-TAX RETURNS WITH EQUITY.

(5) DISCOUNT RATE OF 15% FOR NEW, 25% FOR REHABILITATION; PV ÷ MORTGAGE.

(6) [(SUM OF ANNUAL AFTER-TAX RETURNS) + NET GAIN FROM SALE - EQUITY] ÷ (EQUITY X NUMBER OF YEARS HELD)

TABLE V-11B: BASE CASE INVESTMENT RESULTS -- INVESTORS OWN PROPERTY[1]

	BEFORE-TAX CASH RETURN[2]	AFTER-TAX CASH RETURN[3]	INTERNAL RATE OF RETURN[4]	PRESENT VALUE OF AFTER-TAX RETURNS, W/TAX FUND[5]	PRESENT VALUE OF AFTER-TAX RETURNS, NO TAX FUND[5]	AVERAGE ANNUAL RETURN (AFTER TAX; NO TAX FUND)[6]
NEW	5.26%	2.63	15.0	12.68	13.18	3.02
REHABILITATION	3.37%	1.69	25.0	19.76	22.39	2.75

NOTES: (1) EQUITY IS TAKEN TO BE THE DISCOUNTED PRESENT VALUE OF AFTER-TAX RETURNS OR OF CAPITAL CONTRIBUTIONS. BASIS INCLUDES CAPITAL CONTRIBUTIONS.

(2) DIVIDEND ÷ EQUITY

(3) TAX RATE X DIVIDEND ÷ EQUITY

(4) DISCOUNT RATE REQUIRED TO EQUATE PRESENT VALUE OF AFTER-TAX RETURNS WITH EQUITY.

(5) DISCOUNT RATE OF 15% FOR NEW, 25% FOR REHABILITATION; PV ÷ MORTGAGE.

(6) [(SUM OF ANNUAL AFTER-TAX RETURNS) + NET GAIN FROM SALE - EQUITY] ÷ (EQUITY X NUMBER OF YEARS HELD)

(3) Internal rates of return are very high when based on the 3 percent cash equity.[1]

(4) Development incentive (high present values and internal rates of return) is not markedly reduced by the assumption of the tax sinking fund in the case of new construction. In the case of rehabilitation, while present values and internal rates of return are reduced, they are still quite high.

(5) The discounted present value is higher when the project is sold to investors because it is assumed that their capital contributions are added to the depreciable basis as opposed to the 3 percent cash equity in the basis for the developer who holds the project.

For the sake of completeness Table V-11 also shows the values of some of the alternative methods of real estate investment evaluation. The average annual rate of return is low precisely because it does not take into account the fact that the large cash outflow upon sale occurs many years from the time at which funds are invested. Note that without a sinking fund the large negative after-tax proceeds of sale (cash loss) are discounted at the same high rate as for the positive returns--15 percent for new construction and 25 percent for rehabilitation. The present value is thus much larger if the tax sinking fund is not imposed because the cash

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[1] It could be argued that the developer's rate of return should be calculated on the basis of a "sweat equity" or the fee foregone by not selling the project. However, as discussed elsewhere, assuming the fee foregone to be exactly that which the investors would be willing to pay in exchange for project returns, the developer's rate of return is exactly the same as the discount rate for the investors, assuming the developer is also in the 50 percent income tax bracket. I have elected not to include arbitrary intermediate values of implied developer fee such as assuming it to be the BSPRA. A later discussion addresses the question of the developer's assessment of what he foregoes in the event he retains full ownership of the project.

loss at sale is effectively discounted at a much higher rate, hence is of smaller present value. Table V-12 shows that investors' net investment is always less than half the total funds eventually invested and that they are able to recover their invested funds quite early, especially in a rehabilitation project. Although this is a typical presentation used to convince potential investors in a syndication, it is a bit myopic in view of the substantial taxes which would become due if sale (or foreclosure) of the project because necessary in the early years of the project.

J. SENSITIVITY RESULTS

To assess the generality of the observations made using the base cases, some of the key parameters are examined to see what difference it makes for the investment parameters. For purposes of this sensitivity analysis, the "base case" is taken to be the one in which the basis for tax purposes is taken to include only the developer's 3 percent cash equity in addition to costs covered by the mortgage loan.[1] The results of interest are the differences between the present value calculation for this case and for the cases when the key project parameters are changed. The same relative changes could be expected if the base were taken to be that from the investor's point of view with his capital contributions added to the mortgage amount to arrive at project basis. Parameters evaluated are: holding period of the project, composition of development costs,

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[1] We have noted elsewhere that unless the developer chooses to take the capital contributions out of the partnership as a fee, then the tax basis for the limited partner/investors is the same as that which is described above as representing ownership by the developer, viz., mortgage plus 3 percent equity. In this sense the sentivity results are the same whether the owner is regarded as being the developer or separate investors.

TABLE V-12: PAYBACK PERIODS ON INVESTMENT

NEW CONSTRUCTION[1]

YEAR	AMOUNT OF CAPITAL CONTRIBUTED	ACCUMULATED INVESTMENT[2]	AFTER-TAX RETURN	ACCUMULATED RETURNS	NET INVESTMENT
0	78,653.94	78,653.94	- 0 -	- 0 -	78,653.94
1	78,653.94	157,307.88	69,507.00	69,507.00	87,800.88
2	78,653.94	235,961.82	39,564.50	109,071.50	126,890.32
3	- 0 -		37,619.26	146,690.76	89,271.06
4			35,737.63	182,428.39	53,533.43
5			33,914.01	216,342.40	19,619.42
6			32,142.71	248,485.11	(12,523.29)
			etc.[3]	etc.	etc.

REHABILITATION[1]

YEAR	AMOUNT OF CAPITAL CONTRIBUTED	ACCUMULATED INVESTMENT[2]	AFTER-TAX RETURN	ACCUMULATED RETURNS	NET INVESTMENT
0	132,160.50	132,160.50	- 0 -		132,160.50
1	132,160.50	264,321.00	75,125.00	75,125.00	89,196.00
2	132,160.50	396,481.50	142,483.19	217,608.19	178,873.31
3	- 0 -		141,167.88	358,776.07	37,705.43
4			139,930.50	498,706.57	(102,225.07)
			etc.[3]	etc.	etc.

[1] Both cases assume the developer's fee (excess capital contribution) is added to the tax basis of the project.

[2] No discounting.

[3] See Table V-8 for after-tax returns.

economic life, and discount rates. A later section will examine the effects on investment value of sale at prices other than the mortgage balance.

1. Sensitivity to Holding Period

Figure V-1 presents the present value as a function of the holding period for the base cases. The results of the present value calculations are presented as a percentage of the mortgage amount. This should not be taken to mean that the investment amount is a part of the mortgage. Quite the contrary; for example, in a syndication the present value can be thought of as the present value of the capital contributions made by the limited partners to the partnership. Dividing the present value by the mortgage amount is simply a convenient way of scaling it to the magnitude of the costs of the project. As will be seen, these results are only slightly dependent upon the details of the per unit cost figures; thus such a curve is actually broadly representative of this type of investment generally. The primary curve is appropriate both for a developer holding the property as an investment and for a syndicated project in which the excess capital contributions are taken as a capital gain or as a return of capital by the developer. That is, the basis is assumed to include only the costs covered by the mortgage loan plus the 3 percent cash costs but not including any possible excess capital contributions. A dashed curve shows the results for the syndication case in which the developer's fee can be added to the basis--a "step up" in basis in the language of the trade.

The ratios of present value to the mortgage amount, shown in Table V-11, are the final points on the base case curves of Figure V-1. The remaining points required to plot that curve of investment value against year

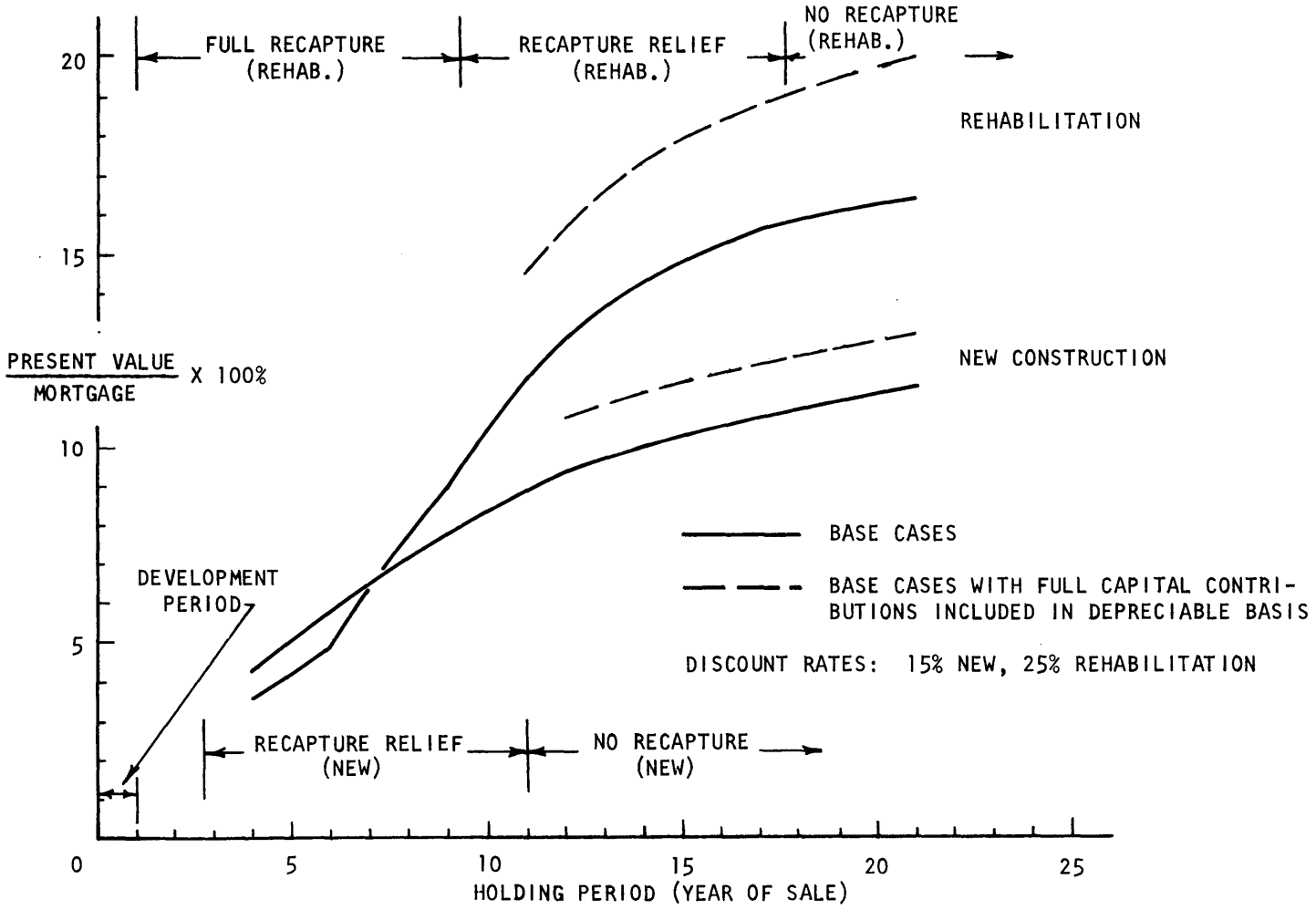

FIGURE V-1: INVESTMENT VALUE DEPENDENCE ON HOLDING PERIOD, BASE CASES

of sale were obtained by calculations like those illustrated. For all of the cases shown, it is assumed that the present value is computed only after sufficient funds from the annual after-tax returns have been set aside in a tax sinking fund to cover the cash requirements of sale. The basic sale price is taken to be the mortgage balance outstanding at the time of sale. Thus no cash is generated at sale to cover the income tax due on the gain realized for tax purposes (difference between the sale price and the adjusted basis, or original cost less depreciation taken). Additional results for other sale prices will follow.

For both new construction and rehabilitation the obvious incentive is to retain ownership of the project, other things being equal, for 15 or 20 years, especially in the case of rehabilitation, since the present value of the investment continues to rise for increasingly long holding periods. One is immediately struck by the effect of the tax penalty upon sale in the rehabilitation case: even though there is little return left from the project beyond the sixth project year, the value of deferring the tax payment is clearly indicated by the substantial rise in present value between the sixth and twenty-first years. This means that a developer promising an investor a holding period of 21 years could demand more than <u>twice</u> the capital contribution for the project compared with a project with a holding period of only six years. The incentive to hold the property in the new construction case is somewhat less extreme, as can be seen in the curve of investment value as a function of year of sale in Figure V-1. For the new construction case, the investment value increases with holding period both because after-tax returns continue to be positive for all 21 years (see Table V-8 of cash flow for base cases), even though some income tax

is due starting in year 18, and because capital gains taxes can be deferred until the year of sale.

Recapture of excess depreciation (that in excess of normal straight-line depreciation) at ordinary income tax rates is, of course, also diminished with increased holding period. The breaks or abrupt changes in slope of the basic curves in Figure V-1 (except for the sharp break when the 5-year write-off period ends for rehabilitation) reflect the influence of this recapture. In the new construction case reduction in the percentage of recapture begins at the twentieth month after the project is placed in service (assumed to be one year in the present case) and has been eliminated by the end of the tenth operating year (eleventh project year in this case); subsequently all gain is taxed as capital gain. Breaks in the curve of present value of the rehabilitation case occur at the end of five years of operation (when the special 5-year amortization has been completed), at the end of nine years of operation (reduction in recapture percentage starts at the 100th operating month, or 8-1/3 years), and at the end of the 17th operating year (18th project year), when recapture has been eliminated (after the 200th operating month, or 16-2/3 years).

While the investment value of new construction is comparable with rehabilitation for very short holding periods, for holding periods longer than about eight years a significant gap develops between the two cases, the discounted present value for rehabilitation reaching a present value of 16.18 percent of the mortgage at 21 years compared with a present value of 11.28 percent of the mortgage amount for the new construction case, given the assumptions used.[1] A question might be raised about the

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[1]These comparisons assume that the tax basis includes only the [cont.]

generality of these results; one might anticipate that some differences might occur depending on the variations in size of project or composition of elements in project value.

2. Sensitivity to Composition of Development Costs

Table V-13 indicates the ranges over which some important project variables were varied to observe their influence on project investment value.[1] These variations were found to result in a change of less than two percentage points in the ratio of present value of the investment to the mortgage amount for new construction and less than one percentage point for rehabilitation. Ranges of present values as a function of holding period for these variations are shown in Figure V-2. The relatively small impact on present value resulting from these variations should, perhaps, not be too surprising, since the mortgage amount is the key parameter in establishing the two primary sources of return--the depreciable basis for tax purposes (mortgage loan amount plus equity investment) and the annual dividend allowable (6 percent on an assumed equity of 10 percent of total replacement costs--the 10 percent remaining after a mortgage loan of 90 percent of total replacement costs). The tax shelter available in the rehabilitation case is so large that it tends to predominate in after-tax return, resulting in less sensitivity of after-tax return to other project parameters.

[cont.] amounts covered by the mortgage loan plus cash expenses but not the excess capital contributions to the developer in the syndication case.

[1] For comparison, the 1970 HUD Statistical Yearbook indicates that for Section 236 projects processed in 1970 the median project size was 98.6 units (Table 257); the median mortgage amount allocable to dwelling units was $14,975 (Table 257); the median land cost was $830 per unit, representing 5.1 percent of total replacement costs (Table 258). (U.S. Department of Housing and Urban Development, 1971, p. 244)

TABLE V-13: SENSITIVITY OF INVESTMENT VALUE TO PROJECT PARAMETERS

	TOTAL REPLACEMENT COST (TRC)	LAND COST (% TRC)	SHELL COST (% TRC)	CONSTRUCTION COST (% TRC)	CONSTRUCTION LOAN INTEREST[2]	PRES.VAL. MORTGAGE
NEW CONSTRUCTION:						
(1)[1] CAPITAL CONTRIBUTIONS INCLUDED IN BASIS	$1,810,393	2.8	--	72	4.85%	12.68%
(4) BASE CASE (DDB DEPRECIATION)	1,810,393	2.8	--	72	4.85	11.28
(3) SUM-OF-THE-YEARS' DIGITS DEPRECIATION	1,810,393	2.8	--	72	4.85	11.91
(5) HIGH LAND COST	1,811,654	8.3	--	67	4.85	11.14
(2) HIGH CONSTRUCTION LOAN INTEREST	1,832,126	2.8	--	72	10.0	12.08
REHABILITATION:						
(6) CAPITAL CONTRIBUTIONS INCLUDED IN BASIS	1,813,580	2.8	6.1	66	4.85	19.76
(8) BASE CASE (20-YR. ECON. LIFE)	1,813,580	2.8	6.1	66	4.85	16.18
(7) HIGH CONSTRUCTION LOAN INTEREST	1,813,580	2.8	6.1	66	10.0	16.73
(9) LOW SHELL COST	1,812,906	2.8	2.8	70	4.85	16.40
(8) LOW TOTAL COSTS	928,122	5.4	5.4	65	4.85	15.99
(9) HIGH SHELL COSTS	1,815,208	2.8	28.0	47	4.85	16.51
(9) HIGH LAND COSTS	1,813,580	5.5	3.3	66	4.85	16.02
(10) ECONOMIC LIFE 40 YRS.	1,813,580	2.8	6.1	66	4.85	15.40

[1] Numbers correspond to those on Figure V-2 of Sensitivity Results, where numbers appear in order.

[2] The base case interest rate is typical of construction financing through a state housing finance agency; conventional financing would require approximately 10%.

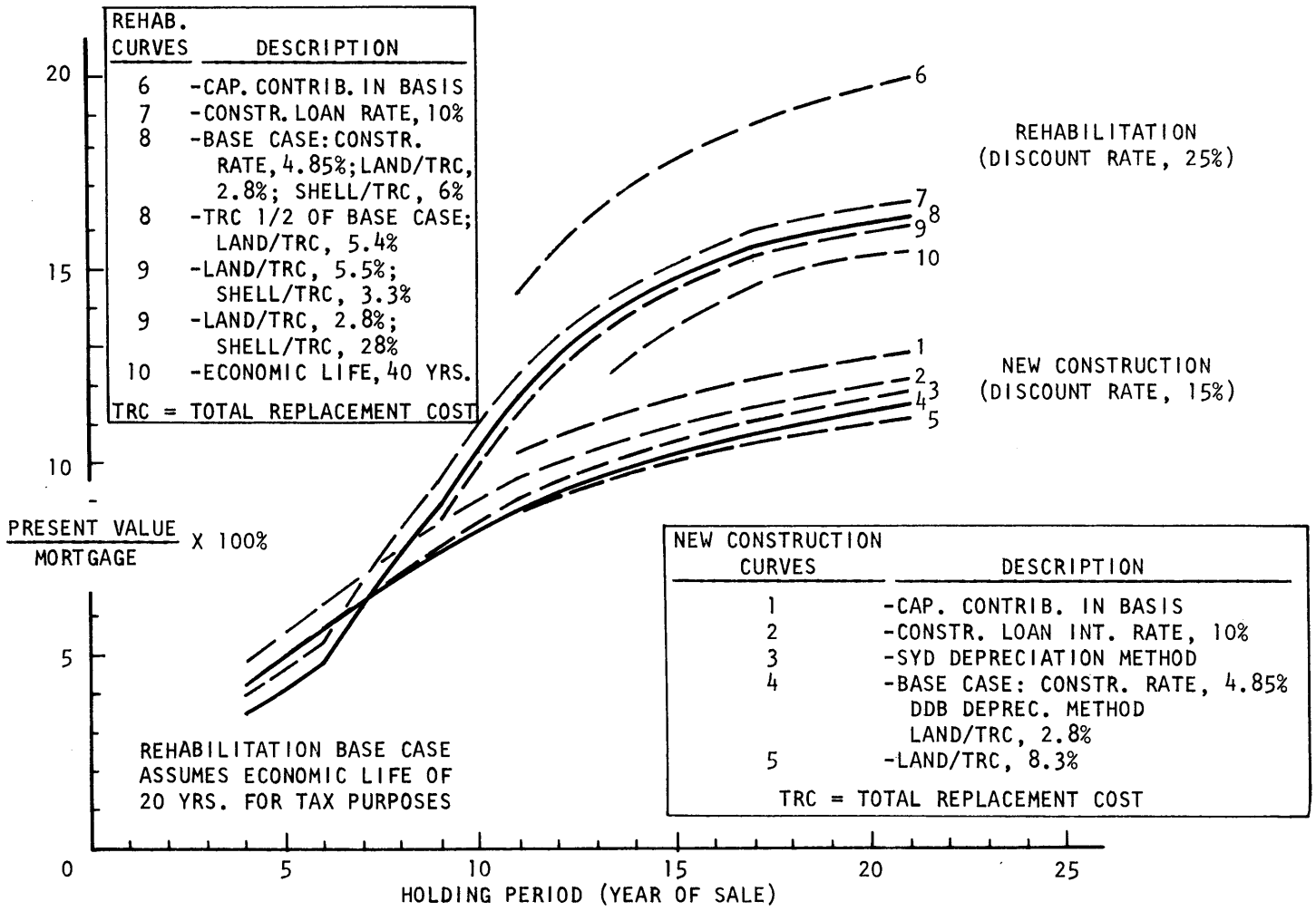

FIGURE V-2: INVESTMENT VALUE SENSITIVITY TO BASE CASE ASSUMPTIONS

In the case of new construction, because of the smaller depreciation allowances (compared with rehabilitation), investment value tends to be somewhat sensitive to variations in initial carrying costs which can be expensed in the year incurred (variations due, for example, to differences in interest rate on the construction loan or in real estate tax treatment during the construction period). However, the influences on investment value from these possible variations are not such as to overcome the differences in investment value between new construction and rehabilitation nor to obscure the observations drawn later about government costs involved in these projects.

3. Sensitivity to Economic Life

With respect to economic life, the rehabilitation case is found to shift downward slightly (less than one percentage point) in investment value if an economic life for tax purposes of 40 years, rather than 20 years, is used; i.e., the discounted present value drops from 16.18 to 15.4 percent of the mortgage amount (see Table V-13 and Figure V-2). This is clearly an extreme case, since IRS Revenue Procedure 62-21, Depreciation Guidelines and Rules (U. S. Treasury Dept., 1962) requires no more than 40 years as the economic life of new rental housing. On the other hand, an economic life of less than 20 years might be very difficult to support on a rehabilitation project, since even used property is allowed its modest acceleration in depreciation (125 percent of straight-line rate) only if the structure has at least 20 years of useful life remaining.[1] It is apparently possible for a developer of a rehabilitation project to argue

[1] Tax Reform Act of 1969, IRS Code, Section 167 (k).

that the life of the project is in excess of 40 years for mortgage purposes, but no more than 20 years for tax purposes.

The straight-line economic life is primarily important in the rehabilitation case in the definition of excess depreciation, where excess depreciation is the difference between the actual depreciation taken (including the 5-year write-off on rehabilitation expenditures) and the depreciation that would have been taken at the normal straight-line rate. The excess depreciation is subject to the minimum tax provisions each year and increases the amount of gain recovered upon sale which is subject to recapture at ordinary income tax rates (at least until the expiration of the recapture period--16-2/3 years). However, because of the magnitude of the tax shelter available in a rehabilitation project, even considering this interaction of the minimum tax and the economic life, the difference in rehabilitation investment value created by an investor's being forced to use an economic life longer than 20 years is seen to be of small consequence.

On newly constructed apartment buildings the Treasury guideline normally allows an economic life of 40 years. It is possible, however, to separately depreciate some components, such as elevators (10 years) or land improvements such as landscaping, paving, drainage facilities and the like (20 years) and thereby lower the effective economic life of the composite. (U. S. Treasury Dept., 1962) Furthermore, the courts have, in specific cases, ruled that shorter lives than those required generally by the Treasury may be justified.[1] (Casey, 1959) Some developers are apparently able to use an effective economic life for new projects of 33

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[1] As mentioned before, the omission of replacement reserves from the calculation of taxable income in the base cases essentially offsets the depreciation or expensing of replacements when they do occur.

years, which would improve slightly the investment value in the new construction case.

While some variations in investment value are thus created as the project parameters are varied, the computations presented in Table V-13 and Figure V-2 have shown that the sensitivities are not great, compared with the magnitude of the discounted present value, and that the investment value in the rehabilitation case is substantially larger than the new construction case, assuming a long enough holding period or project life.

4. Sensitivity to Discount Rate

The discounted present value of a stream of future returns is also clearly a function of the discount rate used. At this point, we are still considering the situation of a project having only a 3 percent cash equity included in the basis, either because the project is held by the original developer or, if syndicated, the developer chooses not to declare the capital contributions in excess of the 3 percent cash as a fee. The discounted present value in this situation is a measure used by the developer to assess the relative investment attractiveness of different projects. To the investor the present value indicates the amount he must offer. It is assumed that rehabilitation projects require the use of higher discount rates than new construction because of the greater risk involved with these projects. To evaluate the significance of a range of possible discount rates, computations with the base cases were made with discount rates for rehabilitation of 20, 25 and 30 percent and for new construction of 15, 20 and 25 percent. In practice, of course, market conditions help to establish the offering price for tax shelter investment based on a number of factors when such a project is offered to the investment market. The results, presented in Figure V-3, show that the rehabilitation case offers a larger

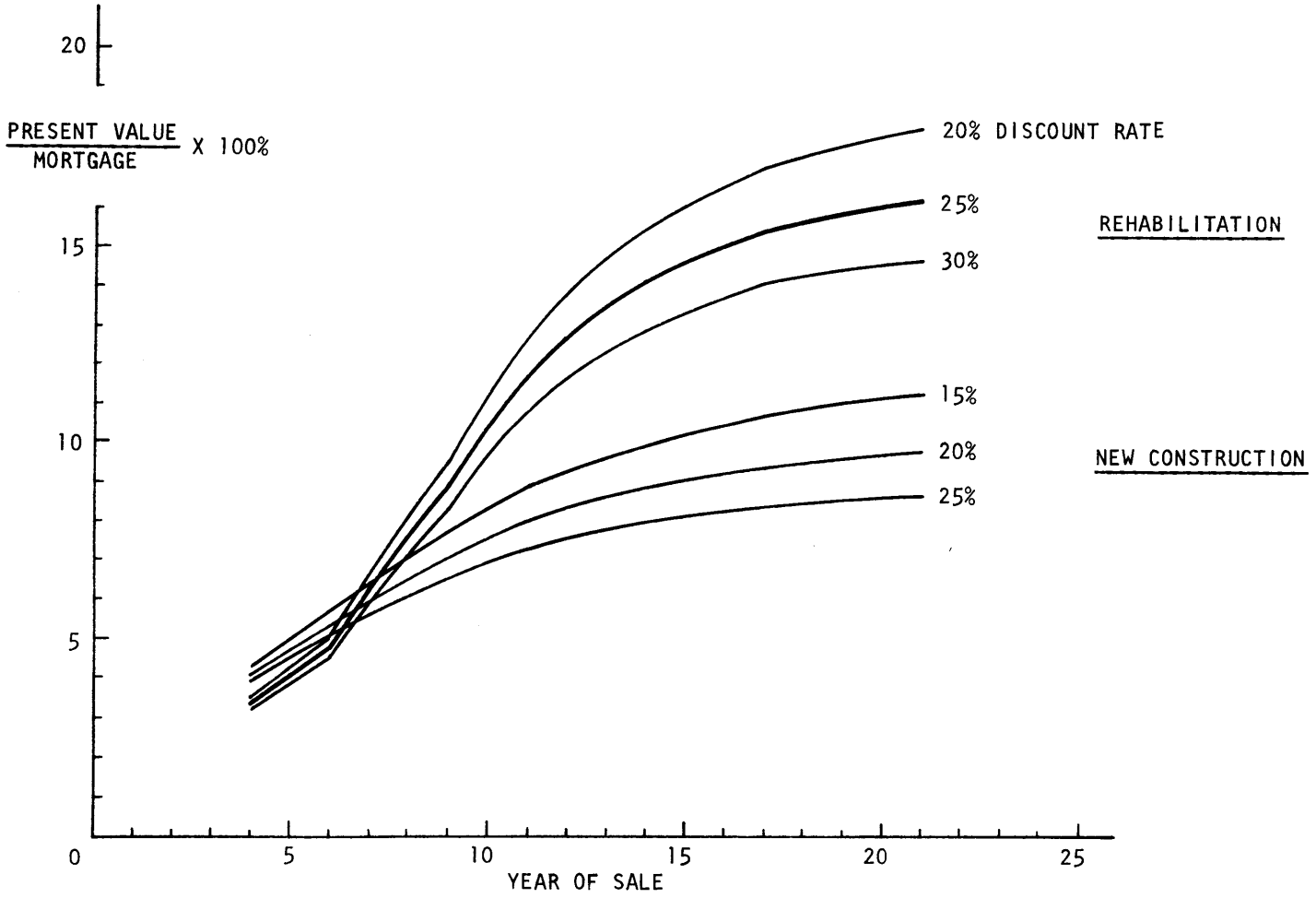

FIGURE V-3: INVESTMENT VALUE SENSITIVITY TO DISCOUNT RATE

present value (relative to the mortgage amount) as an investment even at very high discount rates. It should be noted, however, that with increasingly high discount rates the importance for investment purposes of the expensible carrying costs during construction increases (because they occur in the first year), while the importance of taxes payable at sale diminishes. Substantial changes from the base cases in the proportion of total development costs represented by expensible costs could make noticeable differences in investment value. However, to reduce significantly the difference between rehabilitation and new construction it would be necessary for expensible costs for new construction to be a much higher proportion of development costs than for the rehabilitation case.

Before turning to the question of investment value when the developer's fee is added to the tax basis, a final look is taken at the value of a project to the original developer.

K. INCENTIVE FOR DEVELOPER TO HOLD PROJECT

As discussed in the description of the Section 236 mortgage arrangements and of the base cases, the net cash required to develop a project, either new or rehabilitated, under this program can be quite low--in principle as low as one percent of the total amount and typically as little as the equivalent of three percent of the mortgage amount. Computations were performed for the internal rate of return (IROR) in both base cases assuming a three percent (of the mortgage amount) cash investment by the developer and assuming that the developer is in the 50 percent income tax bracket and remains in this bracket over the time the project is owned. Figure V-4 presents the IROR results as a function of the holding period. Because the equity assumed is so low (although realistically so), the in-

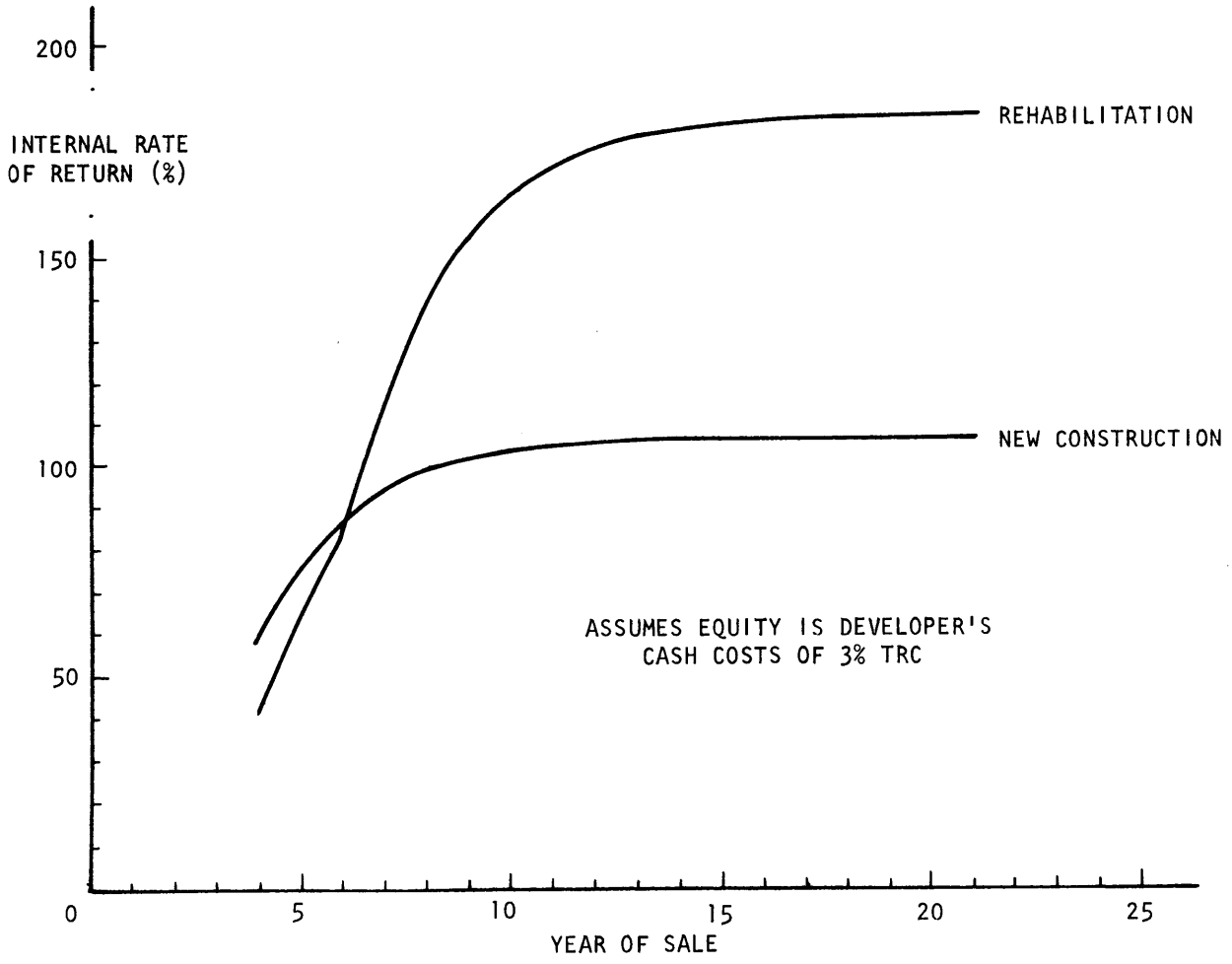

FIGURE V-4: INTERNAL RATE OF RETURN FOR BASE CASES

ternal rate of return is astronomical, approaching 190 percent in the rehabilitation case and 100 percent in the new construction case for holding periods longer than approximately 12 years.

Indeed, when the developer holds full ownership in the property on such a low equity amount, one might think of his after-tax return spread over the years of ownership as more in the nature of a fee for his services in establishing the project paid in increments over the years. Or one could argue that the developer foregoes a fee in order to claim the value of the investment created by his development activity. A measure of the fee foregone might be the fee obtained by developers of other non-tax-favored rental housing. But for new housing the depreciation allowances and economic life permitted are the same; only the recapture provisions differ, and for holding periods longer than 17 years the recapture provisions no longer apply. Since returns are not controlled on non-limited dividend housing, however, such housing might even have an additional increment in the fee to reflect the possibility of higher cash earnings. This possibility could be offset by less favorable financing arrangements in which the mortgage loan would not cover such a high fraction of development costs. In any event it is hard to isolate a reference case for the developer fee which is foregone on a Section 236 project in the situation in which he continues to hold the property.

As another way of thinking about the developer's choices, the discounted present value computations already presented in Table V-10 indicate the amount which investors would be willing to pay in order to claim the after-tax returns of the projects described. Now, if the developer considers the fee foregone to be the difference between the amount he could raise from limited partner investors and the actual cash requirements of

the project (in addition to the mortgage loan funds), he would be indifferent between keeping the project and selling it, because the present value to the developer (net of his cash costs) is exactly the same PROVIDED that the developer can expect sufficient ordinary income over the life of the project that he, too, could claim the value of the tax shelter on his ordinary income at an average rate of 50 percent AND the developer has the same discount rate (expected rate of return, after tax) as the potential investors. If the foregone fee is thought of in this light, the developer's rate of return on the sum of funds expended (cash requirements) and fees foregone is exactly the same as the investors', viz., equal to the discount rate used in the present value calculation.

There is a catch, though; what about the Federal taxes to which the developer is liable as a result of collecting capital contributions in excess of cash costs in the project? In the most favorable case the developer could argue that the excess funds are not really excess but a return of capital (since his tax basis can include costs actually covered by the project mortgage loan), hence not subject to any tax, although a capital gains claim will eventually occur at sale of the project by the partnership. If this possible capital gains tax is small enough and in the distant future (hence of very small present value), we might still conclude that the developer would be indifferent between holding the property and syndicating it, because the present values net of cash costs would still be equivalent in the two cases. Perhaps a more likely tax situation, though, is that the developer would be subject to some tax on the excess capital contributions, either at capital gains rates, if such an argument can be supported, or at ordinary income tax rates. In these cases, the developer would appear to be better off holding the property as an investment than

syndicating it, since the income after tax on the capital contributions from syndication would clearly be less than the present value of the project as an investment.

Yet many developers choose to sell ownership claims in such projects. Why? The primary reasons seem to be a combination of the following: (1) their marginal income tax bracket is lower than the income tax bracket of the marginal investor in this type of investment, i.e., the developer has less ordinary income than the investors, (2) they already have sheltered the income which would be otherwise subject to high tax rates by projects in which some or all of the ownership is retained (in a way a variant of the first reason), (3) the developer thinks of himself as a businessman more than as an investor and prefers to have the cash now as income or as capital for further ventures, or (4) the developer has in effect convinced himself that his average after-tax rate of return is much higher than the rates anticipated by investors, so that the present value to the developer of the project as an investment is much less than the present value of the project to an investor.

L. DEFERRED PAYMENT OF CAPITAL CONTRIBUTIONS

Now, as discussed in the section on syndication, the tax shelter value of a project can actually be increased if the developer sells ownership (or claims to profits and losses) to passive investors and takes the excess of capital contributions over cash costs as a fee charged to the partnership. The reason, again, is that as far as the investor is concerned, his tax basis (value) in the property is the sum of his contribution to cash expenses of the project (his total capital contributions if the developer

takes all of the excess as a fee from the partnership) and his proportionate share in the mortgage loan (as determined by his basis in the partnership, or share of ownership). Thus, while a developer holding full ownership would claim as the tax basis only the sum of the mortgage loan and his actual cash outlay (for example, 3 percent of the mortgage amount), the investor (assume for the moment there is only one or a collective one) can claim as tax basis the sum of the mortgage balance and his actual cash investment, which may be in the vicinity of 10 to 15 percent of the mortgage amount for a new project and 20 to 30 percent for a rehabilitation project, rather than 3 percent. The amount of depreciation which can be taken is thus increased, hence increases the investment value of the project.

In a typical syndication the investment value is also increased by allowing for the capital contributions of the limited partners to be spread out in several payments. This serves as both a protection to the investor should the project fail in the early stages and as a means for the developer to increase his total receipts from the project, since investors are willing to contribute more in the future than at present. In the calculations for total capital contributions in this study it has been assumed that the present value of all of the capital contributions is equal to the present value of the after-tax returns (including consequences of sale) using the same discount rate in both cases. It should be admitted at this point that this procedure is at variance with the arguments made for using the tax sinking fund to cover the net after-tax cash requirements upon sale (because of gains taxes). There, it was argued that the investor does not wish to be forced to achieve a high rate of return on reinvested funds in order to offset the net cash requirements from sale, and that he therefore

prefers to regard these requirements as being met by a fund of returns from the project accumulating at a modest after-tax rate of return. Since the payment of capital contributions also may represent net cash outlays, it could be argued that the discounting of future capital contributions should also be at a more modest rate than the after-tax rate of return demanded from the positive returns from the project, since the investor may not be able to achieve a high rate of return on funds reserved for investment in this project. I have nevertheless used the same discount rate for after-tax returns and capital contributions because (1) the timing of these payments is often such that after the initial payment most, if not all, of the capital required is generated from the after-tax returns of the project, so that there is little or no net cash outlay at the time the capital payments (after the first) become due; (2) this practice seems to be the accepted one in presenting such investments to prospective investors; and (3) investment of the funds reserved for later investment in this project could, in principle, yield an equivalent after-tax return in a comparable, equally risky, investment.

As an example of the calculation of deferred capital contributions, consider the base case for new construction. We found that the present value of all of the after-tax returns from the project was 12.68 percent of the mortgage amount. The formula for relating the required present value of the investment (PV) to the amount (ACAPN) and number of payments (NCAP) to be made is just a version of the annuity formula, if the payments are all of equal amount and are paid annually,

$$\frac{ACAPN}{MRT} = \frac{(PV/MRT) \times RRATE}{1 + RRATE - \frac{1}{(1 + RRATE)^{(NCAP-1)}}}$$

"MRT" is the mortgage loan amount.

For the new construction base case with capital contributions to be made in three equal annual payments, starting with one payment at the outset of the project, the arithmetic is as follows:

$$\frac{ACAPN}{MRT} = \frac{0.12675 \times 0.15}{1 + 0.15 - \frac{1}{(1.15)^2}} = 0.048272$$

YEAR	PAYMENT NO.	AMOUNT (% of MTGE.)	DISC. FACTOR*	PRES. VAL. (% of MTGE.)
0	1	0.048272	1.0	0.048272
1	2	0.048272	0.86957	0.041976
2	3	0.048272	0.75614	0.036500
TOTAL AMOUNT OF CAP. CONTR. = 0.14482				PRES. VAL. = 0.12675

*The discount factor is $1/(1 + RRATE)^N$, where RRATE is the discount rate--15 percent for the new construction case-- and N is the year of payment.

Using the base cases, computations relating total capital contributions and the investors' discount rate (or internal rate of return on the discounted present value of the capital contributions) have been made and are plotted in Figure V-5. Once again, the substantial difference in investment value between rehabilitation and new construction is shown. Total capital contributions for a rehabilitation project are in the range of 20 to 30 percent of the mortgage amount, for reasonable rates of return, and are in the range of 10 to 15 percent of the mortgage amount for new construction. The values shown represent a situation in which 100 percent of the project is marketed to investors (even though a more typical syndication arrangement is for the developer, or general partner,

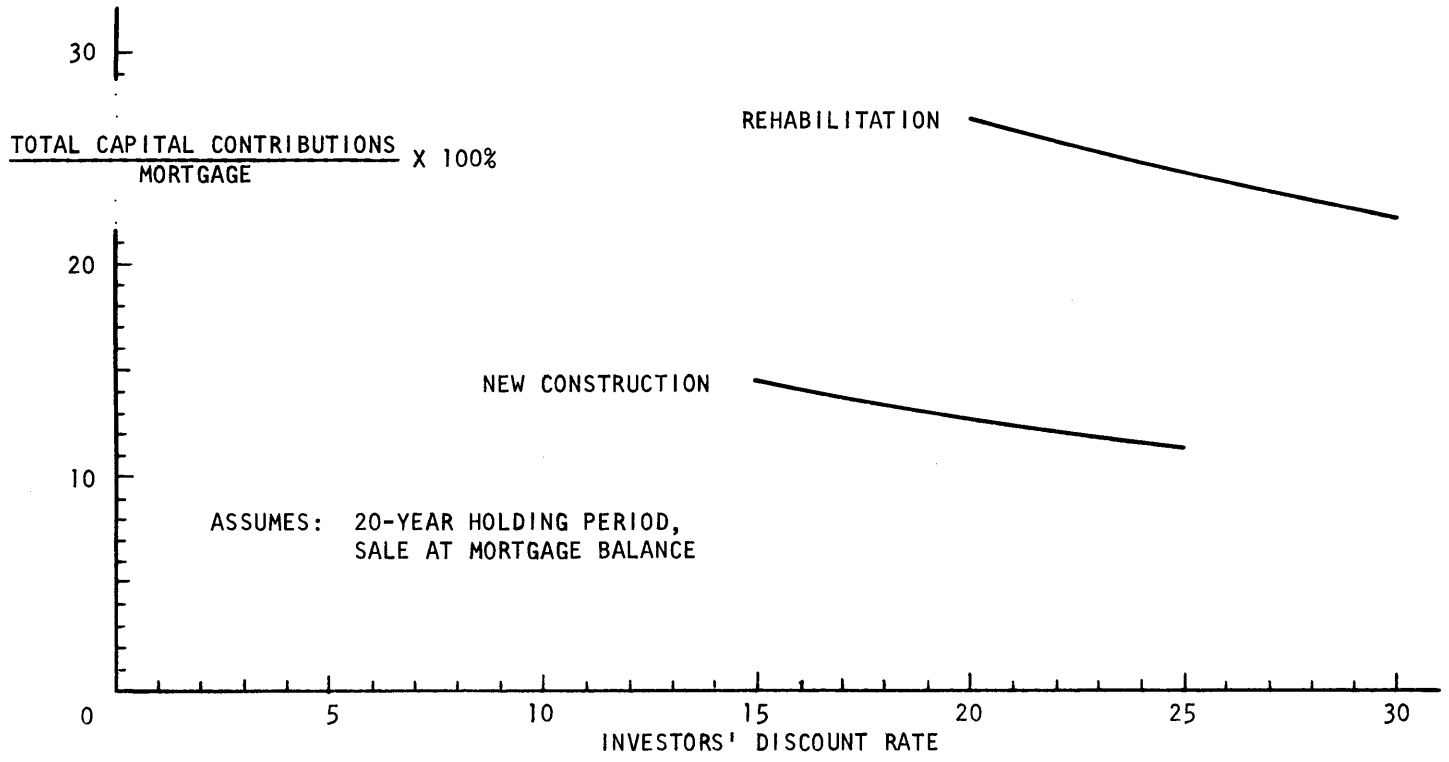

FIGURE V-5: DEPENDENCE OF INVESTORS' PAYMENTS UPON DISCOUNT RATE

to retain a 5 percent ownership) and the full amount of the capital contributions is added to the mortgage amount to arrive at the tax basis of the project. It should be kept in mind for perspective that capital contributions amounting to the equivalent of 20 percent of a mortgage amount of $1,600,000 for a representative 100-unit project represent an absolute amount of investment of $320,000 paid to the developer. Of course, from this must come expenses connected with the project (approximately $48,000 in this case) which remain after disbursing the mortgage funds, as previously discussed, but a rather handsome fee for the developer's services remains, even allowing for some erosion, for example, from claims by the agent marketing the tax shelter for the developer. The role of brokers and marketing consultants in tax shelter syndication and the fees involved are discussed above in Chapter IV at pp. 138-140.

An alternative interpretation of Figure V-5 is that for comparable amounts of investment (total capital contributions) the rate of return for the investor would be much higher for a rehabilitation project than for a new project--higher, in fact, than the range actually computed as representative of the market for this kind of investment. For example, as of the writing of this work, the National Housing Partnership[1] has evidenced little interest in rehabilitation projects because their offerings for rehabilitation projects have been comparable with those for new projects. The upshot is that most rehabilitation developers refuse to

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[1]Authority to establish a private National Housing Partnership Corporation was established by the Housing and Urban Development Act of 1968 (Public Law 90-448) with the intention of encouraging the use of tax shelter investment in low- and moderate-income housing.

agree to NHP purchase, because the developer can obtain much higher amounts of money elsewhere. The NHP situation with respect to rehabilitation would offer windfall returns to investors rather than to project developers. But developers, being in control, are under no compulsion to make such a trade.

M. SUMMARY

For the illustrative cases described in this chapter, a newly constructed 236 project has an investment value of the equivalent of about 13 percent of the mortgage loan amount, while for a rehabilitation project the investment value is about 20 to 22 percent of the mortgage loan amount. This means that the investors should be willing to exchange an investment of that magnitude in return for a claim to the future tax savings and dividends which these projects offer. Since most of the actual development costs are covered by the mortgage loan, the developer can keep most of the investors' contributions as a profit or "fee" for himself.

Using the illustrative cases, it has been shown that the investment results--hence the opportunity for profit for the developer--are not significantly affected by typical variations in the make-up of project costs. It does make a difference how long the project is owned before sale; the optimum holding period is approximately 20 years.

Developers can maximize the total amount of capital contributions from investors by phasing the payments over a period of several years. The total capital contributions were found not to depend heavily upon the investor's required after-tax rate of return within reasonable ranges.

For example, the capital contributions (as a percentage of the mortgage loan amount) vary by only 3 to 5 percentage points as the investor's rate of return (discount rate) ranges from 15 to 25 percent for the investor in a new project or from 20 to 30 percent for an investor in a rehabilitation project. The magnitude of the excess funds over actual cash requirements thus collected by the developer would seem to be more than sufficient to elicit a desired response from developers.

Now we turn to the question of the investor's risk in such projects and some examination of the investment value of such projects if the investment picture were to be altered by changes in the tax treatment of 236 projects.

CHAPTER VI: INVESTMENT RISK AND ALTERNATIVE TAX INCENTIVES

Having looked primarily at the development incentives from the point of view of the developer, we now turn to examine in more detail the perspective of the limited partner/investor in a typical Section 236 project. Areas of interest include the impact of possible departures from the assumptions of the base cases under present tax laws and the investment consequences of changes in the tax treatment of these projects. I shall use this occasion to indicate also the position of the investor who, while in the 70 percent tax bracket, is only required to make the same capital contributions as the 50 percent bracket investor.

A. DEPARTURES FROM THE BASE CASES

The analysis of the base cases has indicated that for a 50 percent tax bracket investor the typical capital contributions he makes are such as to result in an after-tax rate of return on investment of 15 percent for new construction and 25 percent for rehabilitation, assuming the base case conditions hold. The important assumptions are: (1) the investor is in the 50 percent tax bracket,[1] (2) a 21-year holding period, (3) the allowable dividend is earned and distributed to the investors every operating year of the projects, and (4) the project is sold for the outstanding mortgage balance.

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[1] Actually, as indicated above at p. 169, this refers to the average tax bracket in the range of income generated by or sheltered by the project.

While investors can expect an internal rate of return on investment of 15 percent in a new project and 25 percent in a rehabilitation project in the representative base cases, the question remains, "What if the assumptions made in the investment analysis of this project do not hold?" The primary departures of concern would be the following:

1. The investor is actually in the 70 percent tax bracket over the life of the project. From my investigations it appears that the marginal investor in a typical tax-shelter syndication is in the 50 percent income-tax bracket. This means that the developer (or whoever markets shares on behalf of the developer) finds that the price, or amount of capital contributions demanded, must be set so as to be attractive to investors in the 50 percent tax bracket. Thus investors who are in higher tax brackets will find the tax shelter to be of greater value to them, since their capital contributions are the same as the 50 percent bracket investor's.[1]

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[1] Many tax shelter investors are in tax brackets higher than the 50 percent bracket. (U. S. House Ways and Means Committee, 1969; Judelson, 1971) For investors lacking full information about investment opportunities or for situations in which the particular high-bracket investors have a degree of confidence in a particular developer or broker, it may be possible for the price demanded to reflect the higher after-tax returns which can be obtained by a 70 percent bracket investor. In principle, though, the price is set not by the buyer who has most to gain (the 70 percent bracket buyer) nor by the average buyer but by the marginal buyer. My assumption that the 50 percent bracket investor represents the marginal one was greatly influenced by the observation that the offering circular or brochure typically used in a tax shelter syndication uses a 50 percent bracket investor as the typical case. (Kuehn, 1971; Frosh, Lane and Edson, 1971; Judelson, 1971; Boston Financial Technology, 1971) Using the 50 percent bracket makes the results also applicable to a corporation, for which the marginal tax rate is 48 percent.

2. Other conditions hold, but the project has to be sold prior to the end of the intended holding period, although the sale price is the mortgage balance, as assumed.

3. Not only is sale of the project forced to be earlier than intended, but the project never earns the allowed dividend. For sale in the early years this case can be regarded as representing the foreclosure of a really unsuccessful project. If the project is sufficiently behind in payments on mortgage interest and principal, the mortgage holder (mortgagee) may assign the mortgage to the FHA in return for the outstanding balance due on the mortgage. The FHA might reassign the mortgage, if it can find a taker, or foreclose and reclaim the property for future disposition. In the event of a foreclosure, the investors would be relieved of the burden of the mortgage but would, for Federal income tax purposes, be deemed to have sold the project at the mortgage balance (value of liability transferred), just as the mortgage loan amount may be claimed as part of the tax basis at the outset. The investor would thus be subject to gains taxes upon foreclosure based on the difference between the adjusted basis for tax purposes and the mortgage balance, just as though a sale at the mortgage balance had occurred.[1] (Adams, 1970; U. S.

[1] It might be thought that abandonment of a bad project might [cont.]

Commissioner of the Internal Revenue Service, 1964)

> If a project gets into difficulty because expenses cannot be met with rents, the first candidate for sacrifice is likely to be the allowable project dividend, unless the developer or general partner in the project has guaranteed the limited partner investors a dividend.[1] Next candidates for a sacrifice by project owner unable to meet expenses would be the payments into the reserve for major equipment replacements, then principal payments on the mortgage loan (in effect an extension in the term of the mortgage), and finally interest payments (whereupon the FHA has to make up the difference to the mortgagee and may, therefore, declare the project to be in technical default).

[cont.] be a device for claiming a loss for tax purposes. However, abandonment can result in a loss only if (a) the property was actually worthless at the time (liens against the property exceeded the market value), (b) the property was in fact abandoned through some objective act, (c) the mortgagor (owners abandoning the project) received nothing upon abandonment, (d) if abandonment is followed by foreclosure, these must be independent events. (Anderson, 1965)

[1]Any such explicit arrangement would suffer from the provision in the Tax Reform Act of 1969 that property subject to a net lease (i.e., guaranteed income) will expose the investors to the minimum tax on the amount of project interest expense in excess of income. (IRC, Section 163)

4. Dividends are earned but early sale occurs and at a price declining in a straight line from the original total replacement cost to the land value at the end of the economic life of the project. This price is more than the mortgage balance for the first 6 years but subsequently represents a price below the outstanding mortgage balance, hence a net cash loss before tax (taxes upon sale, of course, adding to the loss). Such a situation might arise, I suppose, with particularly conscientious owners who would prefer to take a larger loss than that imposed by the gains taxes in order to preserve their opportunity to do further business with FHA mortgage insurance and subsidy programs. The psychology here is a bit curious: it has become standard to think in terms of accepting a loss at sale as a result of taxes (inevitable), but few would be willing to accept with equanimity a loss induced by selling below the mortgage balance.

5. The project is sold at a price equal to the sum of the mortgage balance and the Federal income taxes the investor will owe as a result of the sale. While unlikely, such a result is possible under Federal law relating to Section 236 projects.[1] It is unlikely because it assumes unrealistically high sale prices in

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[1] Section 236(j)(3), P.L. 90-448, 12 U.S.C. 1701u et seq.

order to allow the investor to break even at sale and thereby to retain all of the annual after-tax returns of the project.

In the evaluation of the consequences of these alternative operating and sale possibilities it is assumed that a 50 percent tax bracket investor has made the full investment required to obtain the anticipated after-tax rate of return (15 percent for new construction and 25 percent for rehabilitation) provided the "base case" conditions hold (full dividends earned, tax sinking fund established, sale at the mortgage balance after a 21-year holding period). This means that in the case of new construction 12.68 percent of the mortgage is invested, while for rehabilitation 19.76 percent of the mortgage is invested.[1] The computations made for these off-base-case conditions still employ the use of a tax sinking fund as though the investor anticipated the time and price of sale, hence of taxes due at sale.

1. New Construction

Figure VI-1 presents as a percentage of the mortgage amount the present values, discounted at 15 percent, of a new construction project as an investment under the various off-base-case assumptions listed above. Except for the break-even-at-sale case (price including taxes due at sale),

[1] To simplify the computations the investment is assumed to be the discounted present value of the capital contributions (taken to be three annual payments), using as discount rates 15 percent for the new construction case and 25 percent for the rehabilitation case. For the discounted present value computations of off-base-case situations this assumption is of no consequence. As noted later, however, the use of the discounted present value of the capital contributions as the investment value for the internal rate of return computations introduces some slight inconsistency.

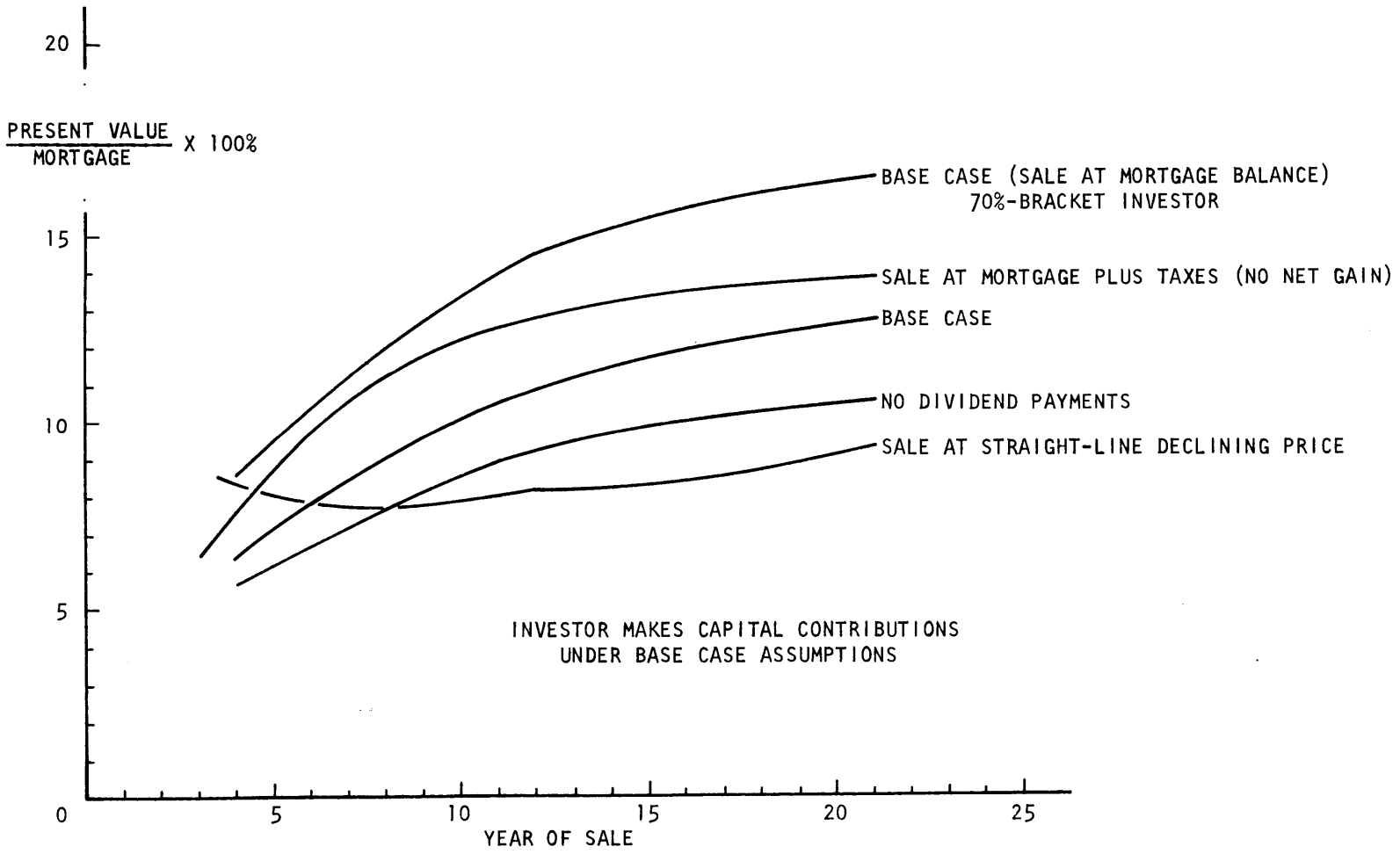

FIGURE VI-1: DEPENDENCE OF INVESTMENT VALUE ON BASE CASE ASSUMPTIONS, NEW CONSTRUCTION

early sale forces premature payment of gains taxes at sale and thus reduces the present value of the project relative to the present value of the capital contributions made at the outset of the project. Another way of viewing these results is that the investor, had he known of the project's future, would have offered a lower amount for the project than the amount offered when making base case assumptions. Note that the 70 percent bracket investor reaps a windfall in that the discounted present value of the project reaches 16.5 percent of the mortgage amount compared with 12.7 percent for the 50 percent investor. If the investor could be assured of a sale price large enough to include the taxes due at sale, Figure VI-1 indicates that he would be willing to settle for a holding period one-half as long (about 10 years) as in the base case; that is, the present values would be equivalent. Because the straight-line declining price is not scaled to the mortgage balance, as are the other assumed sale prices, the present value of the project turns out to be much more nearly constant than in the other cases; it is roughly equivalent to the other cases in the early years but drops about 30 percent below the base case by the end of a 21-year holding period.

Loss of annual project dividends naturally diminishes the investment value of the project. In the example used here the investment value is approximately 1.81 percentage points below the base case by the end of the anticipated holding period--a reduction of 14 percent from the base case value of 12.7 percent of the mortgage.

Another way of looking at the issue of investor risk is to determine what the actual internal rate of return becomes under the off-sale assumptions and loss of dividends, assuming the investor contributed the full

amount required under "base-case" assumptions. Those calculations have been performed using the present value of the actual capital contributions discounted at 15 percent as the initial equity investment and determining the appropriate internal rate of return as that interest rate which yields a total discounted present value for all of the after-tax annual returns equal to the equity investment.[1] The results, presented in Figure VI-2, indicate that the initial equity investment is not recovered in the early years, as indicated by negative internal rates of return. These indicate that funds compounding at the corresponding positive internal rate of return would have to be added to the initial equity just to offset the loss of initial equity over the years. The break-even points, that is, holding periods long enough to recover just the initial investment (at zero interest rate) are:

6 years for case (1), 70 percent bracket investor only, sale at mortgage balance

6 years for case (5), sale at mortgage plus taxes

8 years for case (2), sale at mortgage balance

11 years for case (3), loss of dividends

20 years for case (4), straight-line declining sale price

These results begin to develop some justification for the discount rate of 15 percent used in the new construction base case; the consequences of failure of the project, especially in the sense of premature sale or loss

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[1] Technically the same discount rate should be used in discounting returns and in discounting capital contributions. For internal rates of return lower than 15 percent the resulting present value of the actual investment would be larger than the one used (assuming a 15 percent discount rate) and the solution for internal rate of return would be an even smaller value than the one calculated here.

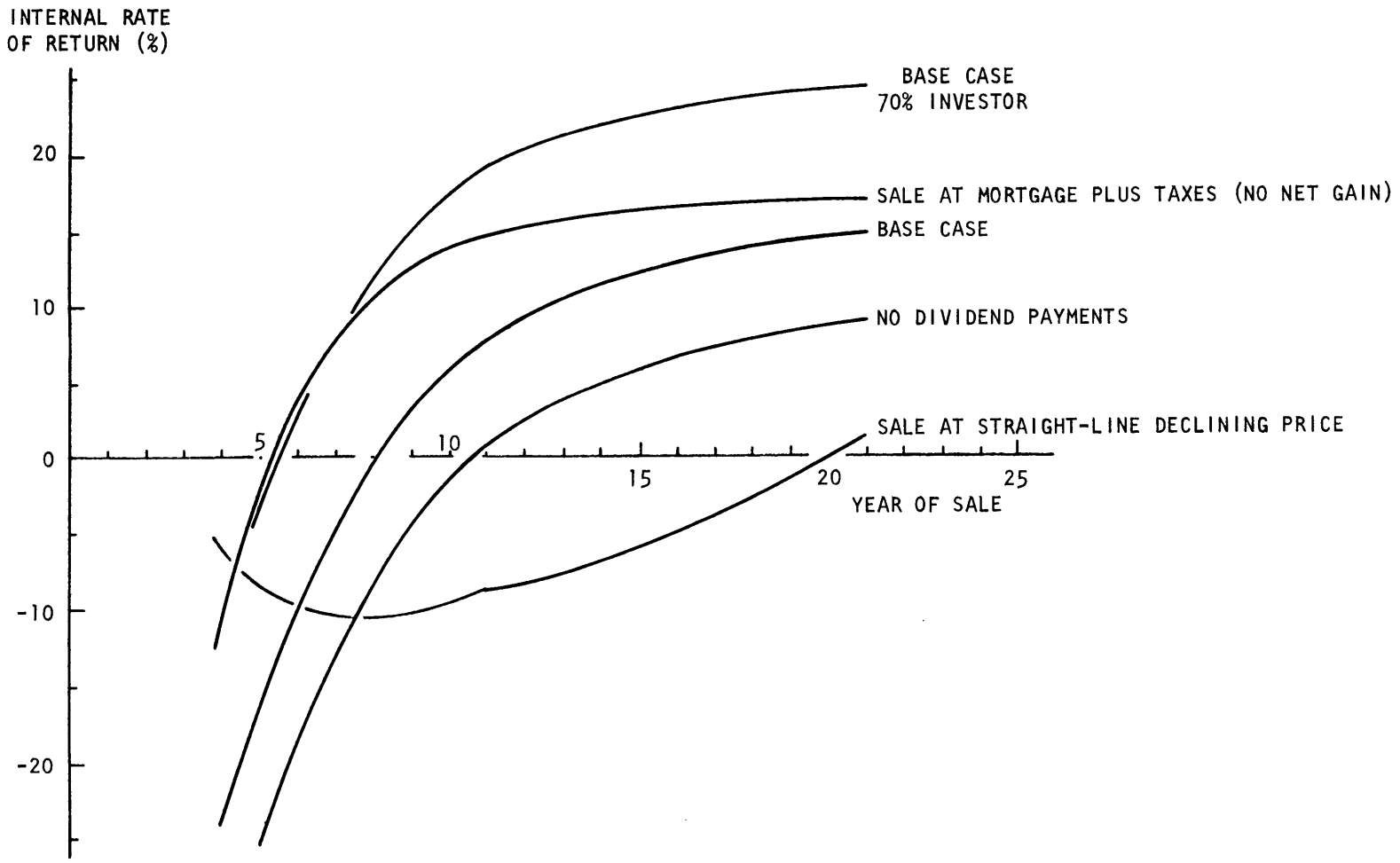

FIGURE VI-2: DEPENDENCE OF INTERNAL RATE OF RETURN ON BASE CASE ASSUMPTIONS, NEW CONSTRUCTION

of project dividends, are quite severe. We note, however, that a 70 percent bracket investor might obtain an internal rate of return as high as 25 percent under the same base case assumptions for which the internal rate of return is 15 percent for the 50 percent tax-bracket investor.

2. Rehabilitation

For the rehabilitation case we now consider the same situations as just observed for the new construction case. Again we assume that the full capital contribution has been made in anticipation of achieving all of the base case investment assumptions and examine the investment effects from the investor's point of view in the event of sale in years prior to the twenty-first project year at various sale prices:

1. Sale at the mortgage balance by a 70 percent bracket investor.
2. Sale at the mortgage balance outstanding at the time of sale.
3. Failure of the project to pay cash dividends throughout project life and sale at the mortgage balance.
4. Sale at a price declining in a straight line from the original replacement cost to the land value at the end of the economic life of the project (taken to be the same value as that used for tax purposes); dividends assumed to be earned and paid every year.
5. Sale at mortgage balance plus sufficient cash to pay all Federal taxes on the proceeds of sale (dividends earned and paid every operating year).

The results of the computations are presented in Figure VI-3. In

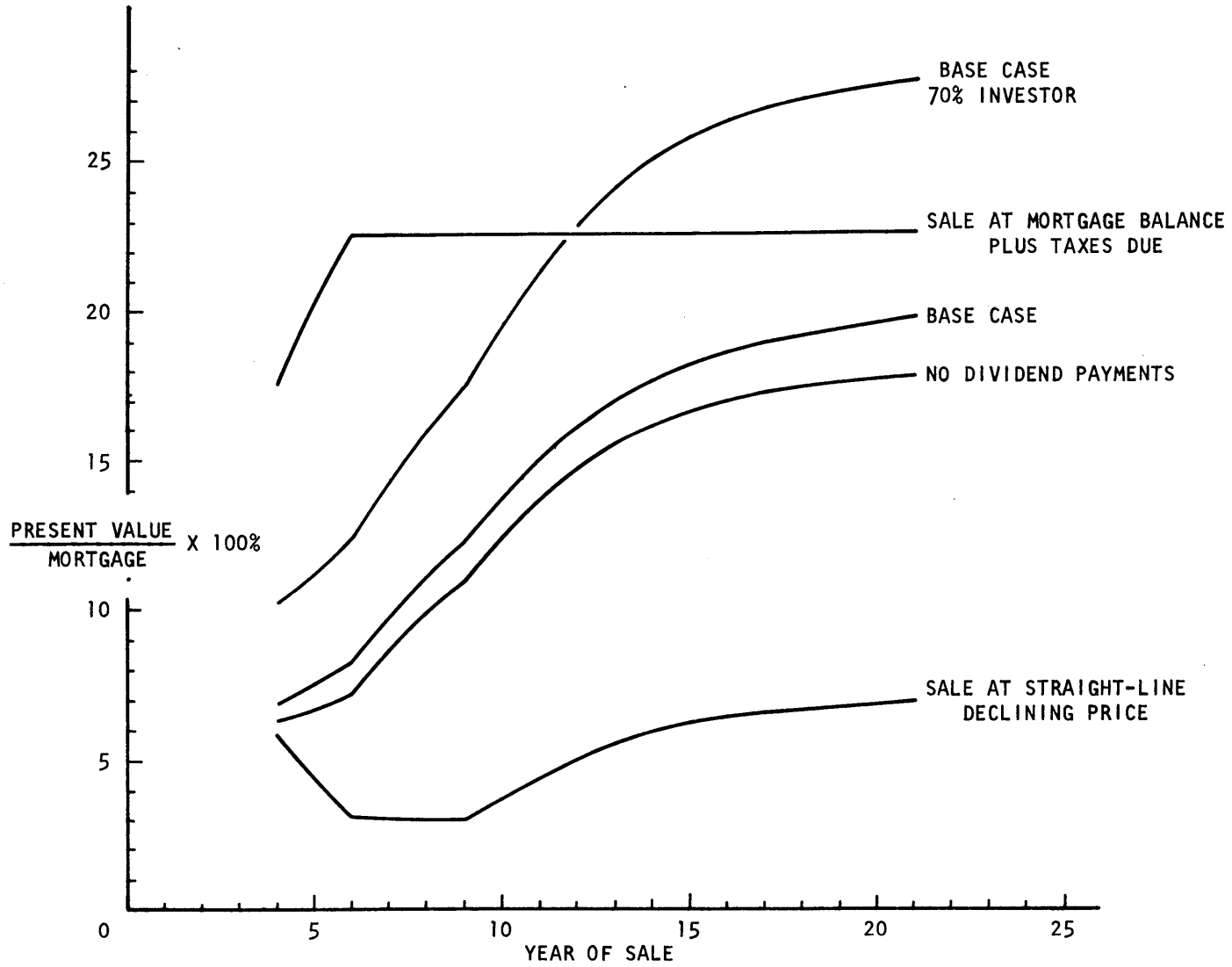

FIGURE VI-3: DEPENDENCE OF INVESTMENT VALUE ON BASE CASE ASSUMPTIONS, REHABILITATION

contrast with the new construction case we note that for rehabilitation, getting the taxes out of the sale price assures essentially the full, base-case present value for the project as soon as the 5-year amortization of rehabilitation expenditures has been taken.[1] In all the other cases the rise in present value of the project is quite sharp with increased holding period. The present value of the project for a 70 percent investor turns out to be 28 percent of the mortgage amount for a 21-year holding period in contrast with 20 percent for the 50 percent bracket investor. While early sale for the new construction case diminishes the present value both because of early payment of capital gains taxes and because of the loss of some potential after-tax returns through continuing depreciation losses, in the rehabilitation case most of the depreciation has been taken after five operating years and the primary concern in premature sale is that of the taxes which must be paid at sale. Because the depreciation amounts, hence the tax savings, are so large in the rehabilitation case, the loss of dividends in the project is seen to be less significant as a percentage change in present value of the project than in the new construction case. The straight-line-declining price case is catastrophic in that the present value of the project never rises above about one-third of the base case present value.

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[1]This case is not likely in reality to occur in the early years of a project because the sum of mortgage balance and taxes due is so large. For example, for the base case project (with an original total replacement cost of $1,829,000) the sale price in the sixth project year would have to be $2,450,000 in order to be large enough to cover the mortgage balance of $1,610,000 plus taxes of $840,000. By year 21 the sale price is more reasonable; $1,800,000--roughly the original total replacement cost--is needed to cover a mortgage balance of $1,318,000 plus taxes of $482,000.

For the rehabilitation case we also examine the effect of the off-sale conditions and loss of dividends in terms of their effect on the rate of return from the project. Again the "equity" used is the discounted present value of the project, or viewed differently, the present value of the investor's capital contributions, discounted at 25 percent. From the results, presented in Figure VI-4, we can see that the case in which sufficient cash is recouped at sale to cover taxes on sale proceeds (however unrealistic in the early years of the project) obtains a rate of return of approximately 30 percent for any holding period past the 5-year amortization period. In the case of sale at mortgage balance, either with or without the project dividend being paid, the project breaks even at about the tenth year. That is, the internal rate of return on the project has just reached zero, or the undiscounted after-tax returns have just summed to the initial investment. The bonanza falling to the 70 percent bracket investor in the rehabilitation project is seen in Figure IV-4; the internal rate of return reaches 42 percent for the base case assumptions for capital contributions, holding period (21 years), and sale price (mortgage balance), in contrast with the 25 percent rate of return for the 50 percent tax-bracket investor. The 70 percent bracket investor also reaches the break-even point sooner--about about seven years.

B. COMMENTS ON CURRENT TAX TREATMENT

From the preceding observations we have gained some awareness of the types of uncertainty and risk of loss (or prospect of gain) for departures from the base case assumptions used to describe conventional investment assumptions (hopes?) in this type of investment--tax shelter syndication in rental projects with Federal mortgage insurance and interest subsidy.

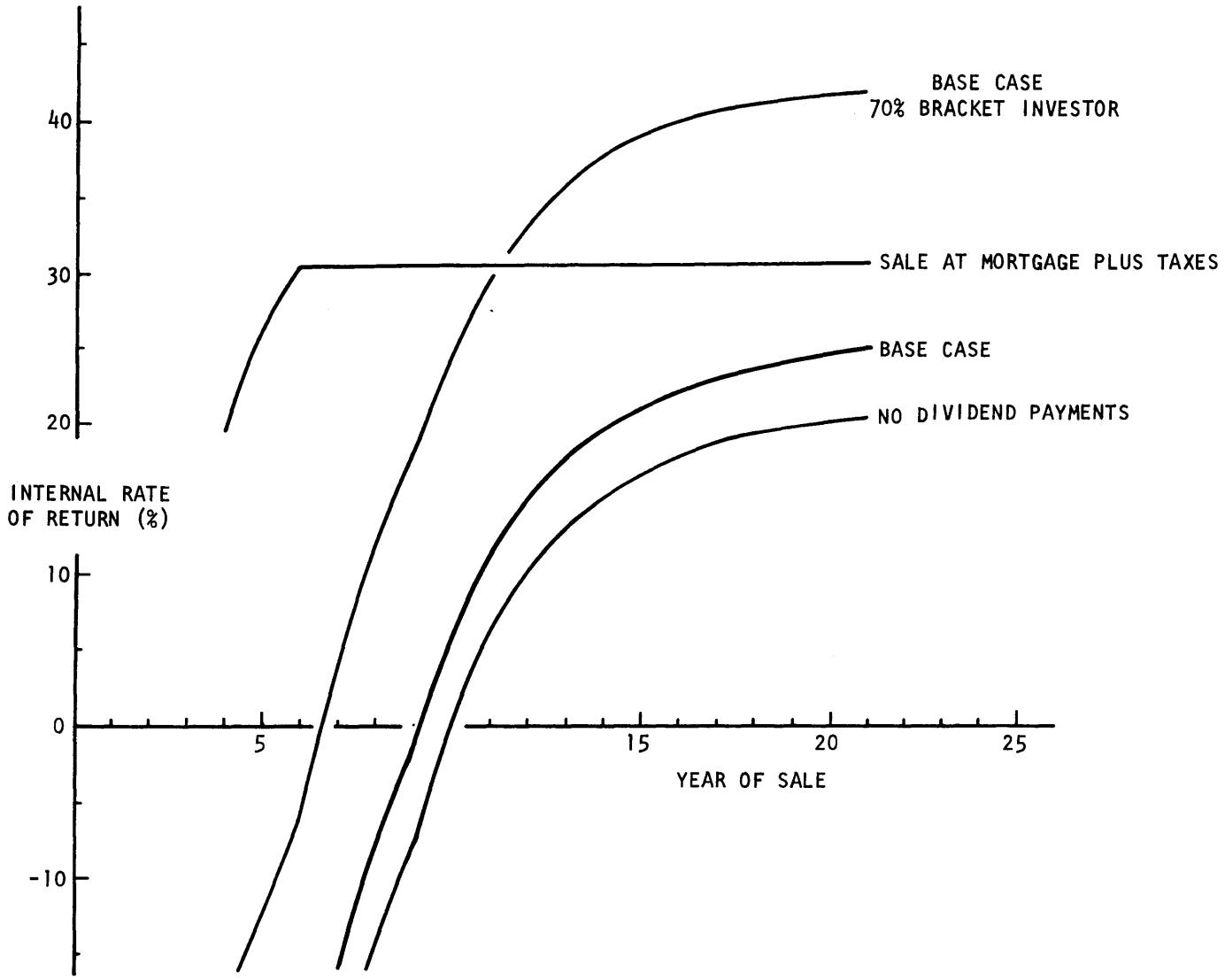

FIGURE VI-4: DEPENDENCE OF INTERNAL RATE OF RETURN ON BASE CASE ASSUMPTIONS, REHABILITATION

We have also seen in the previous chapter the magnitude of the effective "fee" accruing to the developer of such projects primarily as a result of the favorable depreciation allowances provided in Federal tax law, especially for rehabilitation.

It is perhaps too early to draw conclusions about the efficacy of these tax incentives in attracting the necessary actors required to produce rental housing for the subsidy programs, especially for rehabilitation, since the provision for 5-year amortization of rehabilitation expenditures has only been in effect since 1969.[1] As noted in Chapter IV, there is some evidence, however, that developers of new rental housing have become aware of the potential benefits of developing and syndicating Section 221(d)(3) and now Section 236 projects, especially stimulated by the tight money market of 1968 to 1970 for conventionally financed rental housing. Developers have been increasingly willing to suffer the complications and bureaucratic delay of dealing with a Federal agency (HUD, and, in particular, the FHA) in return for the handsome financial benefits attaching to a particular project through the depreciation allowances to which claim can be made on very little cash equity, thanks to the Federally insured Section 236 mortgage. This is attested by the fact that applications for Section 221(d)(3) and Section 236 projects by limited dividend sponsors have exceeded the interest subsidy allocations made possible by appropriation levels under these programs and, for the last several years, have resulted in a full "pipeline" of project

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[1] In fact, while some developers have proceeded to develop and syndicate rehabilitation projects, the Internal Revenue Service had not, as of December, 1971, issued regulations to implement the legislation of the Tax Reform Act of 1969.

applications which have met the FHA feasibility tests, but for which funds are not available to commit the necessary interest subsidy allocation.[1]

Assuming the desirability of incentives to developers and other necessary actors for producing rental housing for the subsidy programs, some questions remain. Is the financial incentive created by tax treatment larger than would be necessary to stimulate the desired rate of production of subsidized rental housing? Does this incentive have favorable or unfavorable side incentives? Is the tax incentive method wasteful of government funds or could the same objectives be accomplished with greater economic efficiency by more direct payment? It is possible that the financial inducements created by the tax treatment of subsidized rental housing might yet be larger than required to achieve the rate of production desired. If subsidy allocations are actually the controlling factor, then any more expenditure of public funds (or loss of tax revenues, in the present cases) than is necessary to induce just a rate of application matching the amount of subsidy funds available is wasteful of public resources.

Whether the tax incentive encourages not only production but also responsible operation and desirable ownership patterns has yet to be determined. For example, an alternative interpretation can be made of the earlier observations regarding the length of time a project is held. If a builder/developer of a particularly risky rehabilitation project were

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[1] John Heinberg (1971) and Emil Sunley (1971) have both commented that the rehabilitation tax incentive may not have increased the number of rehabilitations being undertaken above that made possible by a shift in the proportion of 236 subsidy funds allotted to rehabilitation as opposed to new construction. Also see the discussion in Chapter IV at pp. 140-142 on builder response to the 236 program.

satisfied with a net fee derived from capital contributions which would be equivalent to that which could be obtained from a new construction project, the developer could offer the investor the prospect of getting out of the project within about seven or eight years, intending to arrange for a tenant group to assume the mortgage or to allow the FHA to foreclose. In the event that the project was held for longer than seven or eight years the investors would reap additional value from the project, chiefly from deferring until later the payment of capital gains taxes. From the point of view of public policy the transfer to tenants might be desirable, provided it was not simply a matter of the owner getting rid of a basically unsound project, while the foreclosure possibility would not be desirable. We must also keep in mind that the largest component of after-tax returns in these projects flows inexorably from the depreciation allowances, quite apart from the quality of housing services being rendered from year to year. Some grounds for challenge of the tax incentive approach to the development of low- and moderate-income housing thus appear in relation to their correlative impact on operating incentives. We return to this matter later in a further discussion on operating incentives and tenant ownership.

Assuming for the time being that the tax incentive device is to be used but that it might be larger than necessary, we shall examine the investment impact of some likely candidates for revision in the depreciation allowances and tax laws. Later discussions will focus on (1) costs to government of the present system, (2) ways in which the present incentives could be replaced with direct payments to compensate for tax incentives, (3) possible alternative depreciation and tax treatment with compensating government payment.

C. ALTERNATIVE DEPRECIATION ALLOWANCES

How much would the discounted present value of the base case projects be altered if the depreciation allowances and other tax treatment were altered? We consider the following possibilities:

(1) Straight-line depreciation only

(2) No depreciation allowances whatever (keep construction losses and taxable dividend)

(3) No depreciation allowances, no taxes, i.e., a tax-free dividend

In all of these cases sale is assumed to be at the mortgage balance, but the computations are performed for a range of holding periods--from 5 to 21 years. The tax basis for the straight-line depreciation case includes only the 3 percent cash equity of the base cases. (The other cases assume no depreciation whatever.) The objective of the computations is again to find the discounted present value of the project for investment purposes, assuming discount rates of 15 percent for the new construction cases and 25 percent for rehabilitation. Where applicable the loss at sale is again covered by the use of a tax sinking fund.

1. New Construction

For new construction projects the discounted present values are presented in Figure VI-5 as a percentage of the mortgage amount against the holding period. Compared with the base case, restriction to straight-line depreciation drops the present value from approximately 11 percent of the mortgage amount to approximately 9 percent for a 21-year holding period. The financial incentive to hold the project for a long period is not as marked as in the base case in that the present value doesn't

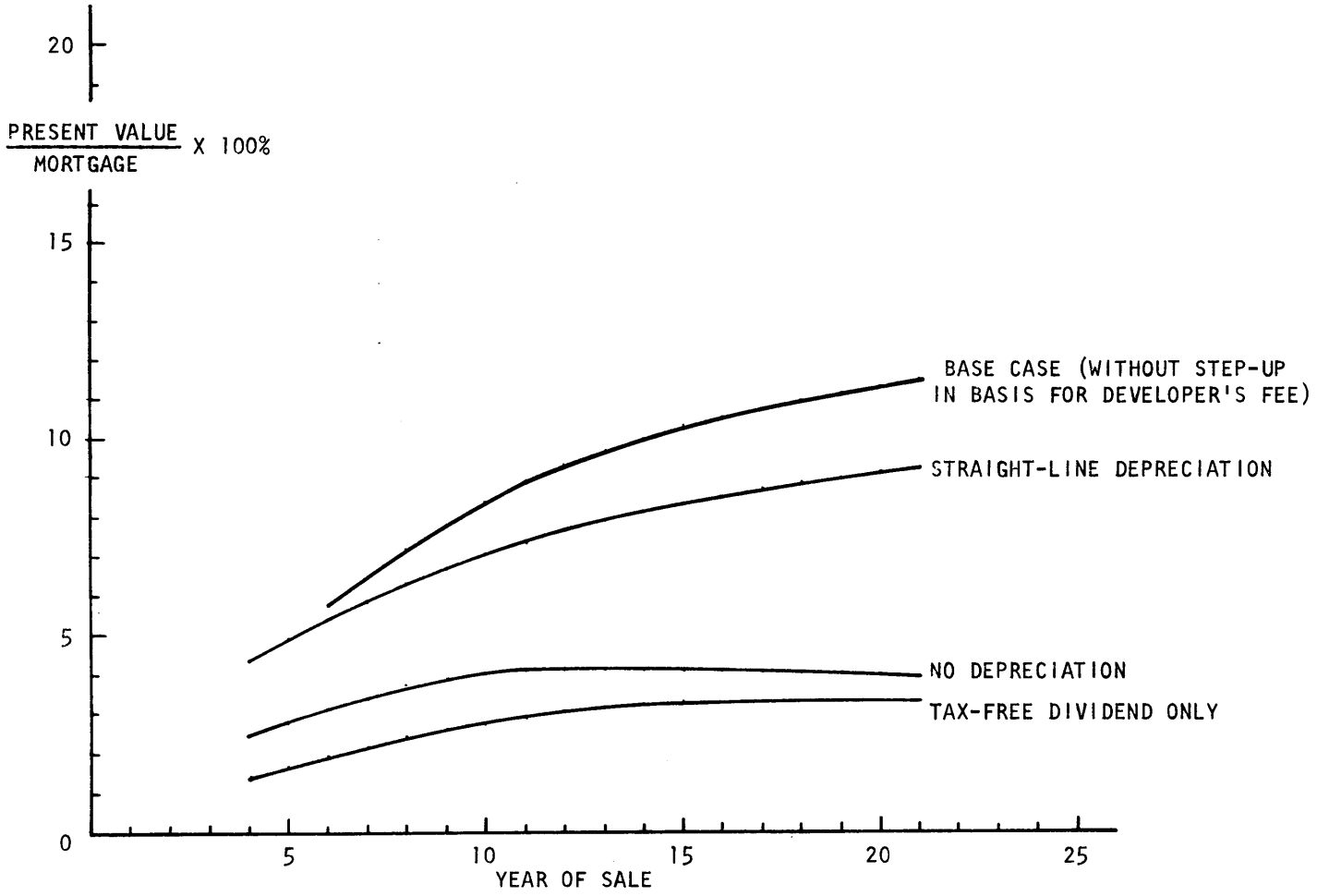

FIGURE VI-5: EFFECTS OF TAX DEPRECIATION CHANGES ON INVESTMENT VALUE, NEW CONSTRUCTION

rise as rapidly with increasingly long holding periods. In the case in which no depreciation at all is allowed the present value drops to only 4 percent, while the tax-free dividend case yields a present value of only 3 percent. Thus the value of the tax savings from being allowed to claim construction losses more than offsets the tax liability on the project dividend. These latter cases represent just about the cash amount required to develop such a project; attributing no foregone fee to the developer, we would conclude that under these circumstances the developer would achieve roughly a 15 percent return on his cash investment. However, given the vulnerability of project dividends to operating cost pressures, it would not seem likely that developers would undertake such a risky development--they cannot extract an immediate fee by syndication and the prospective returns are probably too speculative to be evaluated with a 15 percent discount rate. In the section on government costs we shall examine the government costs which would be involved to compensate for the reduced present value of these depreciation and tax revisions and compare these combined costs with the present system.

2. Rehabilitation

Corresponding results for the rehabilitation case are presented in Figure VI-6. The present value in the case in which depreciation is limited to straight line is roughly competitive with the base case for short holding periods--less than 8 years, but with longer holding periods yields a significantly lower present value than the base case--approximately 40 percent lower at 21 years. This would be competitive with the base case for the present treatment of new construction largely because the use of double-declining balance for a new construction project with

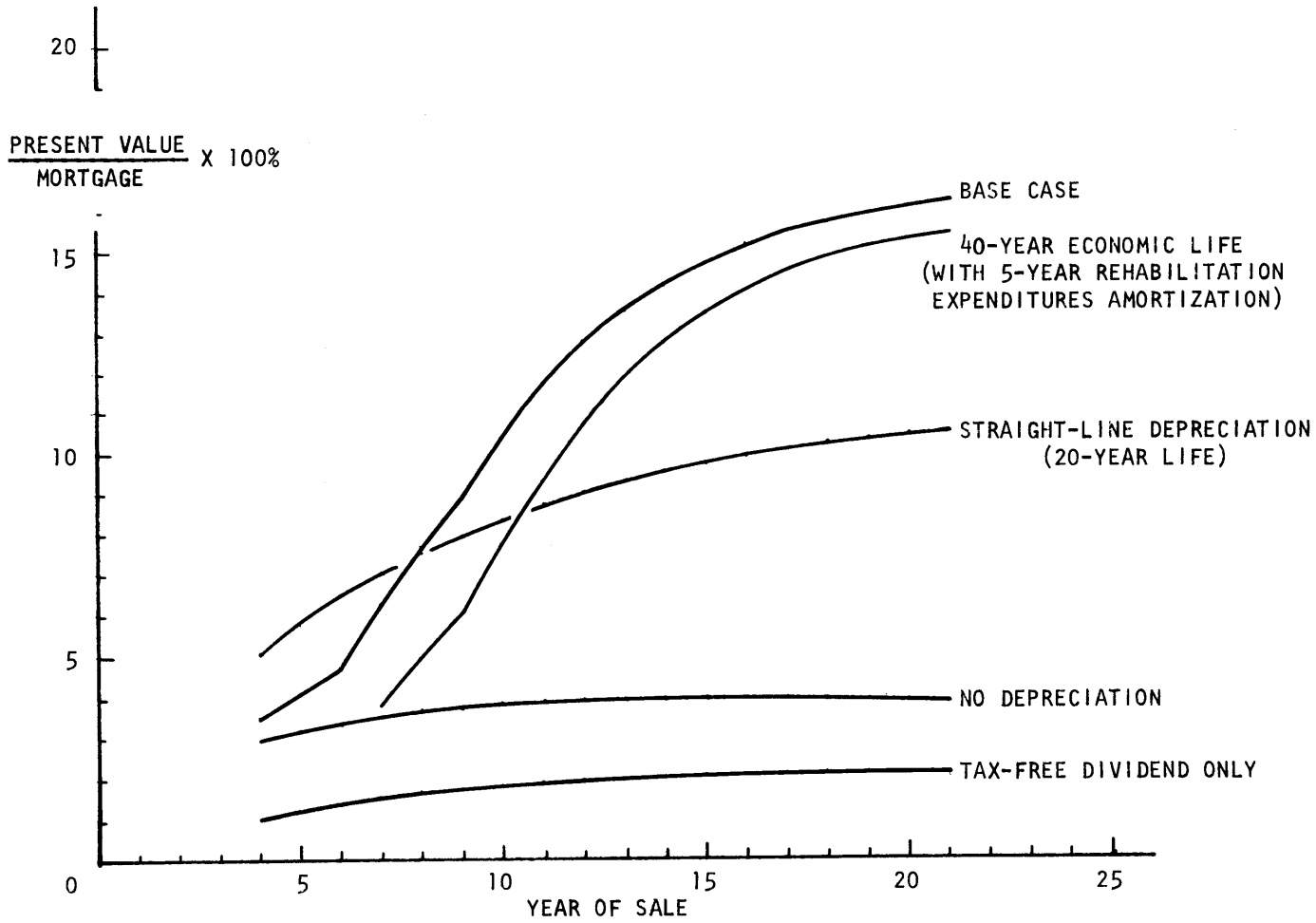

FIGURE VI-6: EFFECTS OF TAX DEPRECIATION CHANGES ON INVESTMENT VALUE, REHABILITATION

a 40-year life makes it roughly comparable with 20-year straight-line depreciation. The no-depreciation and tax-free-dividend cases are, of course, comparable with the new construction results but lower because of the higher discount rate assumed for the rehabilitation project. The no-depreciation comparison is quite vulnerable to differences in the relative amounts of construction period expenses which could be claimed as a tax loss--much more so than in the base cases. With respect to the no-depreciation and tax-free-dividend cases, it would again appear that there would be little financial incentive for development.

Figure VI-6 also shows the effects of imposing a 40-year economic life requirement on a rehabilitation project. Such a requirement might be imposed to reconcile the treatment of the project for mortgage purposes and for tax purposes, especially in cases involving such substantial rehabilitation in a sound building shell that the economic life should approximate new construction. Requiring a 40-year economic life would have the effect of reducing the project present value by about 1 percent for a 21-year holding period, with larger differences for shorter holding periods.

D. ALTERNATIVE TAX TREATMENT

Depreciation changes are, of course, changes in tax treatment; other types of change in tax treatment might also be of interest. Again depending on comparisons with the base cases, the following categories of changes in tax treatment are considered:

(1) Recapture provisions--What if new 236 construction were also subject to the 200-month recapture rule (as rehabilitation expenditures now are)?

(2) Minimum tax on preference income--What is the impact of the minimum tax on investment value? How much larger would the investment value have been without the imposition of the minimum tax?

(3) Capital gains exclusion--The inclusion of the treatment of capital gains as one of the items of tax preference income made subject to the minimum tax suggests that the Congress has some questions about the equity, or at least the necessity, of the exclusion of one-half of capital gains from taxation at ordinary income tax rates. What if the capital gains exclusion were withdrawn and capital gains were fully taxed at ordinary income tax rates?

Once again new construction and rehabilitation are examined separately.

1. New Construction

Results of the computations for new construction are presented in Figure VI-7. Imposition of the 200-month recapture rule for new construction makes little difference compared with the base case, even during the 200-month period when it would apply. Of course, a 200-month recapture rule would make no difference in investment value for a project operated for longer than the 200-month period. Relief from the minimum tax provision increases the investment value of a new construction project by only about 1 percentage point over the base case. Subjecting capital gains to ordinary income tax cases reduces the present value to about 9 percent of the mortgage amount for a project held 21 years, or about a 20 percent reduction from the base case. The holding incentive,

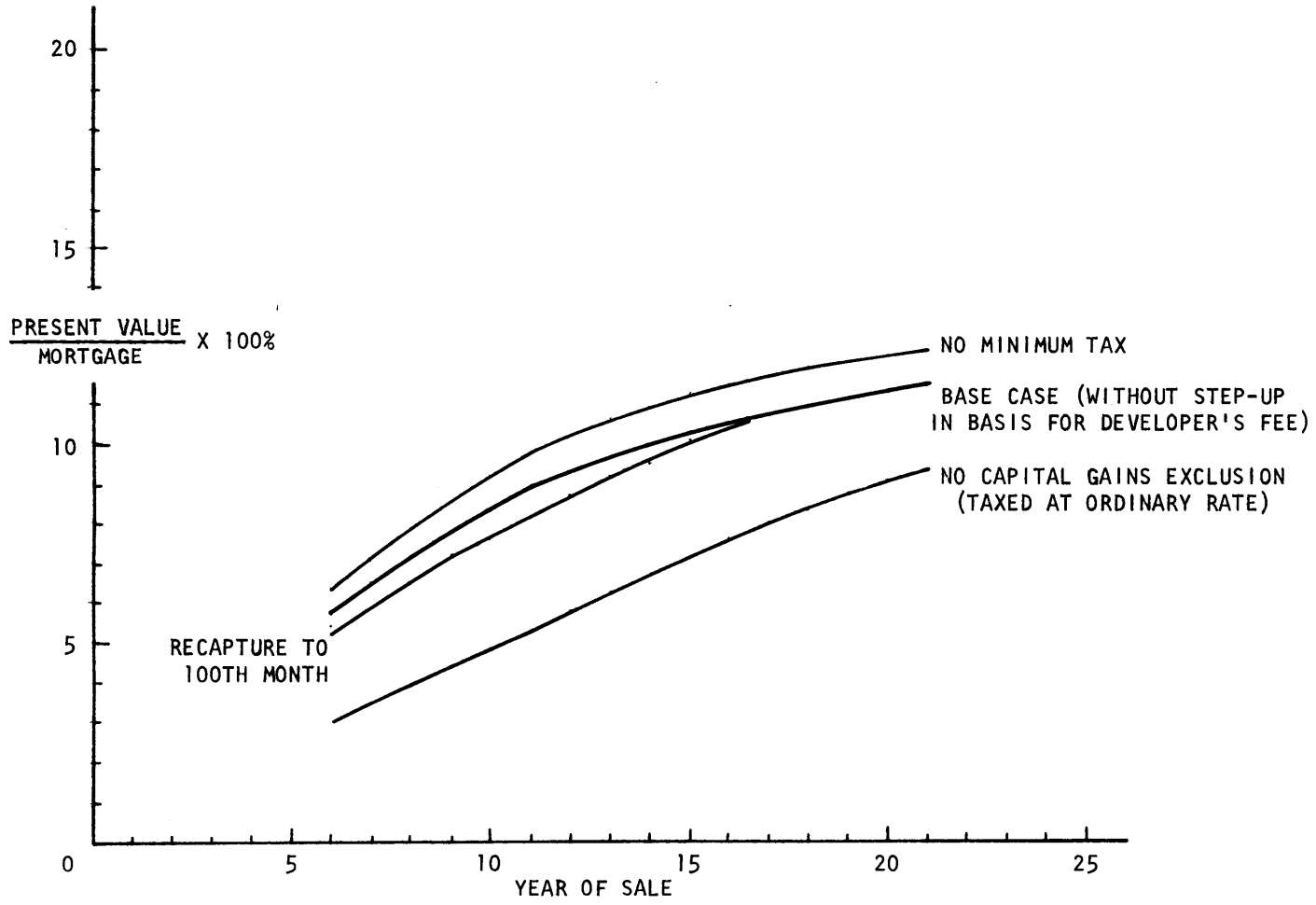

FIGURE VI-7: EFFECTS OF MINIMUM TAX AND CAPITAL GAINS TAX ON INVESTMENT VALUE, NEW CONSTRUCTION

i.e., the steepness of the present value curve with holding period, is about the same as in the base case.

2. Rehabilitation

Figure VI-8 summarizes the investment impact of the changes in tax rules for a rehabilitation project. The minimum tax has a very sizable effect on the magnitude of the present value; present value would be higher by about 25 percent if the minimum tax were not imposed.[1] The minimum tax is important in the rehabilitation case because it affects both the rather large excess depreciation (the difference between the 5-year amortization depreciation and ordinary straight-line depreciation) and the sizable capital gain at sale.

Removal of the capital gains exclusion for rehabilitation would reduce the present value of such projects by about 25 to 30 percent for holding periods approaching 20 years--approximately the same degree of reduction in present value that the present value would be increased by removal of the minimum tax. Holding period incentives are apparently not greatly changed by a switch from 20 to 40-year economic life, such as discussed above.

E. SUMMARY

By looking at the relative risks to the investors should the base case assumptions not hold, we have gained some appreciation for the high discount rates typically used in evaluating the investment value of Section 236 projects such as those described in the base cases of the

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[1] The observation about the effect of the minimum tax on rehabilitation is not included here as an argument for removing it; just the contrary. Such a change would only increase an apparently ample investment incentive.

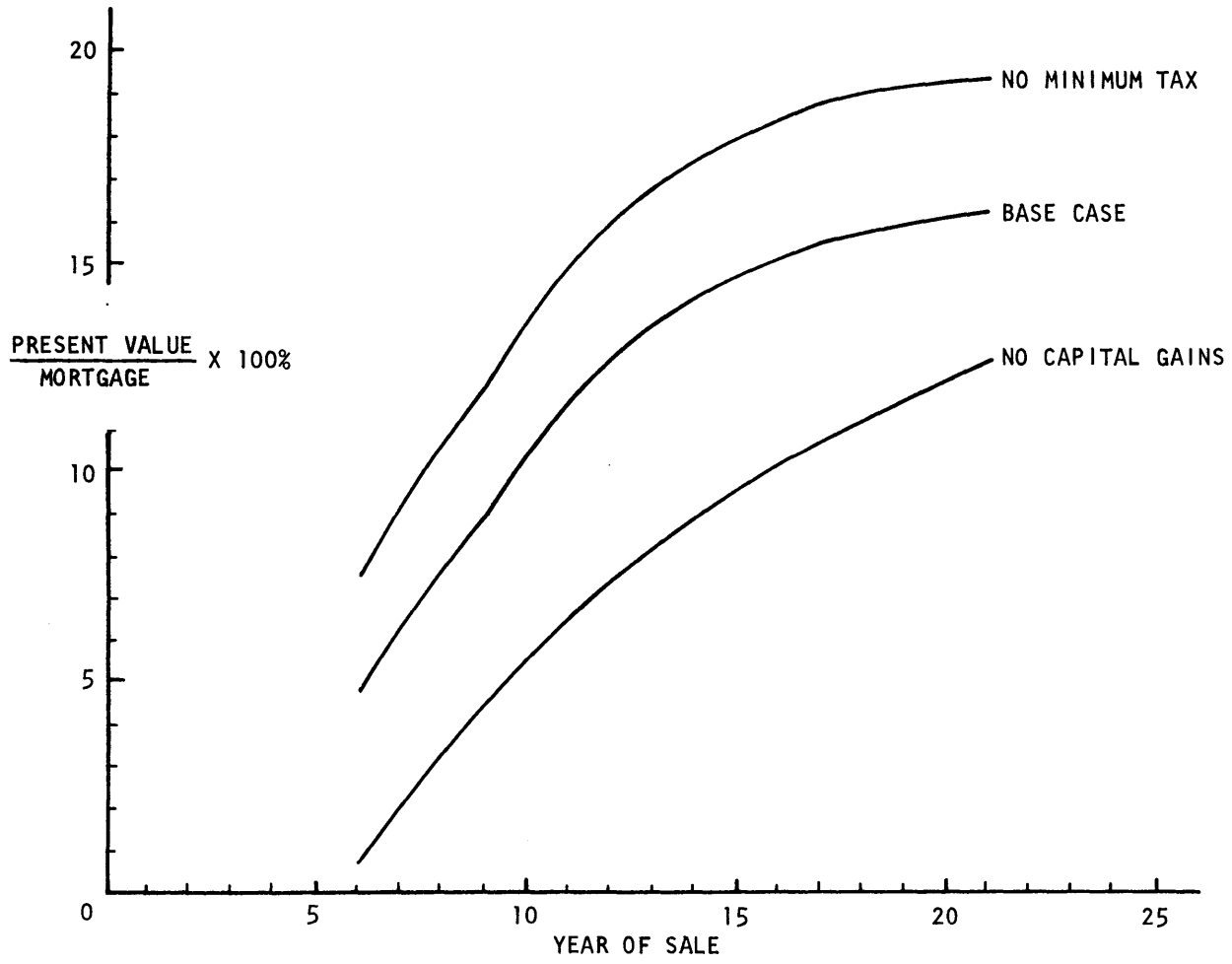

FIGURE VI-8: EFFECTS OF MINIMUM TAX AND CAPITAL GAINS TAX ON INVESTMENT VALUE, REHABILITATION

preceding chapter. The unnecessary windfall accruing to the 70 percent tax-bracket investor has also been shown--a 70 percent bracket investor obtains an internal rate of return of 42 percent for providing exactly the same amount of capital to the rehabilitation project as the 50 percent bracket investor, yet the 50 percent bracket investor obtains an internal rate of return of 25 percent. As will be noted in the following chapter on government costs, the net revenue costs also increase in the case of the 70 percent investor even though no greater development incentives are created.

Noting that the tax incentives may be greater than would be required to induce developers to produce projects in sufficient numbers to use up all of the appropriated subsidy funds, we have looked at ways in which the tax treatment of these projects might be modified. Restriction to straight-line depreciation is found to have a much larger effect on the rehabilitation project than on the new construction project. Removing the depreciation allowances entirely results in reductions in investment value so great as to preclude development activity. The returns available from the tax savings in expensing construction carrying charges and from the project dividend are just barely great enough to warrant the necessary cash expenditures of the developer, even if the project earns the full allowable dividend every year of operation--a very speculative possibility. The minimum tax and capital gains exclusion provisions in the tax laws have just about equal and opposite effects in the case of rehabilitation, while for new construction the removal of the capital gains exclusion would cause a much greater reduction in investment value of the project than the increase which would result from removal of the

minimum tax on preference income items.

Thus the adjustment of tax devices to trim incentives to fit the private responses desired is seen to be cumbersome and inexact, even before examining the cost to government of this form of incentive. After examining in the next chapter the magnitude of the net revenue losses associated with the present tax treatment of such projects, we turn to (1) the possibility of outright government payments as a substitution for the investors' capital contributions to the developer, and (2) several possible combinations of altered tax treatment combined with supplementary government payments.

CHAPTER VII: COST TO GOVERNMENT OF TAX INCENTIVES

A. RATIONALE

Having examined in some detail the private financial incentives for development and operation created by tax treatment of subsidized rental housing, we turn to the question, "What is the effective cost to the Federal government of the revenue losses generated by such projects?" In this analysis we shall consider the project life to be the 21-year investment horizon described for the base cases and examine the government costs in this same framework, including the consequences of sale, just as has already been done for the private investor.

There are a number of ways in which government costs could be viewed. One question is the relative or differential cost, comparing present tax treatment to that, say, prior to the Tax Reform Act of 1969 or comparing current treatment of non-residential new construction with residential new construction or comparing new residential construction with rehabilitation. If the primary question of this work had to do with the adequacy of the present tax incentives, these comparisons would be relevant. We have assumed here, however, that the incentives for development are sufficiently high, although the comparison between new construction and rehabilitation is of interest. The approach for this analysis then will be to look at the total costs to government of the tax treatment of subsidized rental housing.

Another natural temptation is to look only at the accelerated portion of the depreciation allowance as the "incentive" portion. However,

this is a valid assumption only if the real economic depreciation is straight-line. Otherwise the allowance of depreciation in excess of actual decline in economic value amounts to an interest-free loan by the government to the owner of the project, which loan is partially forgiven at maturity; that is, the owner not only is allowed to defer income taxes but is allowed eventually to convert at least part of the tax liability into liability at a lower tax rate as a result of the capital gains exclusion. Another temptation is to examine only the present value to the government of the taxes lost as a result of depreciation allowances without considering the consequences of sale, viz., that some capital gains (and, possibly, recapture) taxes will be collected by the government. Including taxes upon sale, of course, requires some assumptions about the time of sale and price at sale, but then the sophisticated investor makes judgments on these factors in evaluating investment value to him of a potential project. The approach for this analysis will thus be to evaluate the net revenue losses and gains for the base cases using the same sale price assumption as in the base cases, viz., the mortgage balance outstanding at the time of sale.

We will compare the investment value of the base case projects with the government costs of the same projects. I do <u>not</u> propose to undertake a full-blown benefit-cost analysis, including measures of the value of job creation and tenant satisfaction in these projects, for example, and seek to conclude <u>whether</u> such a project should be supported from a public policy perspective.[1] My assumption here is that the social need (or po-

[1]An incisive piece of work along this line, using the techniques of welfare economics analysis, has been completed recently by Arthur Solomon (1971), who performed comparisons of Rent Supplement, conventional [cont.]

litical justification) for projects such as those described by the base cases has been established. I then evaluate government costs under the present system and the costs which would be incurred under alternative means for providing the necessary incentives to develop and operate the project. Whether or not such projects, now or in the future, are deemed to be socially desirable, I believe the analysis of costs under alternative incentive schemes is applicable more generally to the use of tax devices to encourage development of real estate.

For both base cases, then, I obtain the present value of the taxes and tax losses generated by each type of project, discounted at 6 percent.[1] For purposes of this analysis of government costs the base cases used are those with the developer's fee (excess of capital contributions which can be demanded of investors over the actual cash costs of the project exclusive of those covered by the mortgage loan) included in the tax basis of the project. This approach maximizes the depreciation allowances and amount of capital contributions which the developer can demand from investors; it maximizes revenue losses as well. As far as tax costs are concerned, then, the project is taken to be owned completely by limited partner/investors and the government revenue calculations deal only with the tax savings or payments of the investors.

[cont.] public housing, and leased public housing in terms of private and social benefit and public costs. The overview of housing programs by Aaron (1972) provides a political-economic comparison of the full range of current Federally-supported housing programs, how they work, what their objectives might be in terms of public policy, what improvements might be made.

[1] Some discussion of the choice of discount rate for government and sensitivity of the results to discount rate is included below at pp. 266-272.

I do not, however, include in government revenues any income tax which a developer might have to pay on such income from the project. As discussed previously, a developer is likely to claim the income from syndicating a project only if he has sufficient unused tax shelter from some other source that the income from the project is covered. In one sense, I should include tax on developer's income from syndication as part of the revenue picture for the project at hand. However, a developer would at least attempt to minimize the tax impact by income averaging; more likely he would seek to avoid tax or at least defer it by claiming the syndication income as a capital gain or, possibly, as a return of capital, as discussed previously. In these latter cases, the government costs which will be presented are slightly higher than they would have been should the extra basis (syndication income, or developer's fee) have been omitted from the tax basis of the projects, because the depreciation amounts taken would be slightly smaller. While there might be a mild inconsistency in adding the developer's syndication income to the project tax basis but not considering the developer's income tax on syndication income, this treatment seems a not unreasonable cut-off point for the multiplier question. That is, this project also generates employment and therefore taxable income for construction workers, lawyers, accountants, architects, for example, during the development period and bank employees, management and custodial workers, for example, during operation; their expenditures yield additional taxable incomes for others and so on. We do not attempt to trace the income tax revenues on these incomes as a government benefit arising from this project, but assume that in a full employment economy the developer as well as these other parties would have obtained taxable incomes elsewhere from their pursuits. In any event, an attempt to include the developer's income

tax payments on syndication income would require either calculation of a multitude of possible combinations of tax factors or excessively constraining assumptions about his tax status. Government costs are thus computed for the base cases for the isolated projects in somewhat the same manner as the investment analysis assumed for the private investor, who is assumed to regard the project as having to stand alone as an investment.

Government costs of primary interest are the net revenue losses to the investor/owners of the base case projects from the point of view of the Federal government, i.e., the U. S. Treasury. Local government costs in the form of special tax arrangements and the Federal interest subsidy payments are, of course, additional government costs, although primarily directed toward achieving affordable rents for eligible tenants once the necessary incentive to develop and operate a project has been achieved. The Federal revenue losses are regarded as base costs against which several comparisons are of interest:

(1) Comparison of base costs against those which would be associated with restriction to a straight-line depreciation allowance.

(2) Effect of sale price upon government costs. This is the computation for the government which parallels the assessment by investors of the risk that the project will differ from the assumptions used in the syndication.

(3) Sensitivity of base costs to the government discount rate assumed. Base costs will be presented for discount rates of 4, 6, 8, and 10 percent.

(4) Total public costs. The sum of Federal costs through tax losses from a project plus the Federal cost of

interest subsidy payments plus local government costs in the form of property tax abatement is compared with the total project cost.

(5) Use of a direct fee to replace the investment value of a project, i.e., government payment of the capital contributions to the developer. Both outright payment and payment by means of an increased mortgage amount with a matching annual payment to cover the increment in mortgage payment will be considered.

(6) Altered tax rules, such as reduced depreciation allowances, with direct government payments provided to compensate for the reduced investment value of a project compared to that of projects under present tax laws.

B. BASE CASE COSTS

The computation of government costs for base cases uses exactly the same techniques as were used for computing the discounted present values of after-tax returns for an investor. Now, however, we are interested in the tax returns (or losses) generated by a project and the discount rate used is not 15 or 25 percent but 6 percent. The irregular flow of funds in such projects requires some more sophisticated method of evaluating costs than simply initial annual costs or an arithmetic average for yearly costs, although considerations of annual costs or the other extreme of simply totalling revenue losses may be as far as legislative considerations of tax legislation intended to create incentives have gone. Discounting the stream of revenues and revenue losses provides a means for evaluating different government programs or tax incentives in terms of their equivalent present costs, even though the Congress has shown a distaste for actually paying for programs in this way, commitments to spend in the future being

favored over current spending.[1] To the extent that political discount rates for revenues or expenditures occurring five or six years hence are so high as to cause these future revenues or expenditures to be disregarded entirely, rational analysis offers no hope nor help. I assume here that the issue is not whether such a rational analysis should be attempted but what is the proper discount rate for relating future expenditures or revenues to the present. Some reasons for choosing the 6 percent discount rate chosen here are offered shortly; the upshot, however, will be that the basic observations and conclusions are unaffected within the range of justifiable discount rates. Six percent is representative.

1. Base Case Results

Table VII-1 illustrates the calculation of the discounted present value of government costs for the base cases. Tax revenues are treated as positive cash flows from the government point of view and the tax savings portion of the after-tax return of the investor becomes a negative cash flow for government. The results indicate that the discounted present value of government costs for the new construction case is the equivalent of 11 percent of the mortgage amount, while the discounted present value in the rehabilitation case is nearly 27 percent of the mortgage amount.

In the case of a project entirely owned by a taxpayer in the 70 percent income tax bracket, Table VII-1 indicates that the discounted present

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[1] For example, in the revenue estimates relating to the Tax Reform Act of 1969 made by the Joint Committee on Internal Revenue Taxation (1969), the only figures developed for the consideration of the Congress seem to be annual projections of revenue effects for a few years, not total program costs and not using a discounted present value analysis.

TABLE VII-1A: FEDERAL REVENUE LOSSES, NEW CONSTRUCTION

	50% BRACKET INVESTORS			70% BRACKET INVESTORS	
YEAR	INCOME TAX	DISC. VALUE	YEAR	INCOME TAX	DISC. VALUE
1	-69,507.00	65,572.63	1	-97,309.81	91,801.75
2	-28,702.10	27,077.46	2	-41,859.29	39,489.92
3	-26,756.86	23,813.55	3	-38,968.33	34,681.73
4	-24,875.23	20,885.77	4	-36,174.78	30,373.11
5	-23,051.61	18,259.10	5	-33,470.43	26,511.81
6	-21,280.31	15,901.95	6	-30,846.88	23,050.68
7	-19,555.84	13,786.18	7	-28,296.09	19,947.74
8	-17,872.67	11,886.42	8	-25,809.93	17,165.18
9	-16,225.42	10,180.11	9	-23,380.55	14,669.36
10	-14,608.62	8,646.89	10	-20,999.96	12,429.95
11	-13,016.95	7,268.66	11	-18,660.41	10,419.97
12	-11,444.89	6,029.09	12	-16,353.88	8,615.11
13	- 9,887.04	4,913.61	13	-14,072.51	6,993.69
14	- 8,337.80	3,909.14	14	-11,808.23	5,536.23
15	- 6,791.54	3,003.95	15	- 9,552.88	4,225.30
16	- 5,139.20	2,144.44	16	- 7,194.88	3,002.21
17	- 3,377.21	1,329.45	17	- 4,728.09	1,861.23
18	- 1,610.81	598.21	18	- 2,255.14	837.49
19	166.73	- 58.41	19	233.42	- 81.78
20	1,962.25	- 648.56	20	2,747.16	- 907.99
21	3,782.94	-1,179.56	21	5,296.12	-1,651.39

TAXES RECOVERED AT SALE:		
TAX:		
AMOUNT	183,672.38	243,783.31
DISC.VAL.	57,271.04	76,014.25
DISC.VAL. AT START	54,029.31	71,711.56
NET REVENUE COST TO FEDERAL GOVERNMENT		
TAX LOSS LESS TAXES AT SALE, DISCOUNTED TO START OF DEVELOPMENT		
ACTUAL TOTAL =	179,229.19	262,702.38
RATIO TO MTG.=	0.1100	0.1612

TABLE VII-1B: FEDERAL REVENUE LOSSES, REHABILITATION

	50% BRACKET INVESTORS			70% BRACKET INVESTORS	
YEAR	INCOME TAX	DISC. VALUE	YEAR	INCOME TAX	DISC. VALUE
1	- 75,125.00	70,872.63	1	-105,174.94	99,221.69
2	-131,601.69	124,152.56	2	-193,734.44	182,768.38
3	-130,286.38	115,954.56	3	-191,788.38	170,691.25
4	-129,049.00	108,352.25	4	-189,961.25	159,495.44
5	-127,878.56	101,292.13	5	-188,236.75	149,101.69
6	-126,746.25	94,712.56	6	-186,581.19	139,424.88
7	1,686.92	- 1,189.22	7	2,282.59	- 1,609.15
8	2,589.76	- 1,722.35	8	3,598.18	- 2,393.01
9	3,517.41	- 2,206.89	9	4,924.38	- 3,089.64
10	4,486.89	- 2,655.81	10	6,281.64	- 3,718.13
11	5,437.61	- 3,036.36	11	7,612.65	- 4,250.90
12	6,377.35	- 3,359.54	12	8,928.29	- 4,703.36
13	6,932.48	- 3,445.27	13	9,705.47	- 4,823.38
14	7,529.26	- 3,530.05	14	10,540.96	- 4,942.07
15	8,170.82	- 3,614.01	15	11,439.15	- 5,059.62
16	8,860.48	- 3,697.22	16	12,404.66	- 5,176.11
17	9,601.85	- 3,779.79	17	13,442.59	- 5,291.71
18	10,398.85	- 3,861.82	18	14,558.39	- 5,406.55
19	11,255.60	- 3,943.40	19	15,757.84	- 5,520.75
20	12,176.60	- 4,024.60	20	17,047.24	- 5,634.43
21	13,166.66	- 4,105.50	21	18,433.32	- 5,747.71

TAXES RECOVERED AT SALE:		
TAX:		
AMOUNT	349,572.81	463,978.38
DISC.VAL.	109,000.56	144,673.50
DISC.VAL. AT START	102,830.75	136,484.50
NET REVENUE COST TO FEDERAL GOVERNMENT		
TAX LOSS LESS TAXES AT SALE, DISCOUNTED TO START OF DEVELOPMENT		
ACTUAL TOTAL =	436,241.88	655,298.56
RATIO TO MTG. =	0.2673	0.4015

value of the Federal revenue losses amounts to 16 percent of the mortgage for new construction and 40 percent for rehabilitation, obviously a result of the larger tax savings enjoyed by the 70 percent bracket investor. It should be kept in mind in the ensuing discussion that the comparisons are made for the case of a 50 percent bracket owner. For the cases in which an alternative means of achieving the development and operating incentives reduces government costs below the present costs with 50 percent bracket owners, clearly the reduction in government costs would be even larger in the case of 70 percent owners. The results can therefore be viewed as representing a conservative evaluation; the cost reductions shown are the minimum ones which could be achieved.

Table VII-2 compares these results with the valuation placed on these same projects by private investors. We see that the discounted present value of the new construction project is roughly comparable for both government and private investor. This result occurs despite the use of a 6 percent discount rate for government contrasted with the 15 percent discount rate assumed for the investor because the present value of the large capital gains tax upon sale is larger from the government perspective than from the perspective of the private investor. In the rehabilitation case, however, the present value of government costs is seen to be much larger than the present value of the project to a private investor, for whom the present value amounts to less than 20 percent of the mortgage amount. We shall presently see, moreover, that in <u>both</u> cases government could reduce net costs, while accomplishing the same results, either by direct payment to the developer or by augmentation (through direct payments to the developer) of options for tax treatment with lower government cost, such as

TABLE VII-2: COMPARISON OF GOVERNMENT COSTS AND INVESTOR VALUATION OF ACCELERATED DEPRECIATION

	P.V. UNDER EXISTING TAX LAW	P.V. IF ONLY STRAIGHT-LINE DEPRECIATION ALLOWED	CHANGE IN P.V.
NEW CONSTRUCTION			
GOVERNMENT[1]	11.00%[2]	7.13%	3.87 percentage points
PRIVATE INVESTOR[3]	12.68	9.80	2.88 percentage points
REHABILITATION			
GOVERNMENT	26.73	17.46	9.27 percentage points
PRIVATE INVESTOR	19.76	11.37	8.39 percentage points

[1]All revenues and losses discounted at 6% for government.

[2]Present values expressed as a percentage of the mortgage amount.

[3]All after-tax returns discounted at 15% for new construction and 25% for rehabilitation, assuming a tax sinking fund has been established, if necessary.

reduced depreciation allowances. But that gets a little ahead of the story. For the moment Table VII-2 simply illustrates the relative increases in present value of the present depreciation treatment compared with straight-line depreciation. It is clear that with accelerated depreciation allowed the project increases in value to the private investor less than the government costs increase. This is an indication of the apparent inefficiency of accelerated depreciation as a tax incentive to induce development and operation of this type of project.

2. Effect of Sale Price

At an earlier point the importance of sale price to the investor was assessed. This is a good point at which to examine the changes in government costs which would be connected with sale prices other than the one assumed in the base cases, viz., the outstanding mortage balance at the time of sale. Table VII-3 presents comparisons of government costs and private investment value for both base cases under the assumptions that the project is sold at the end of the 21st project year for (1) the mortgage balance, (2) the mortgage balance plus an amount equal to the taxes due at sale, (3) a price declining in a straight-line from the original total replacement cost to the land value over the economic life of the project (in the case of the rehabilitation project, this is just the value of the land, because we have assumed an economic life of 20 years from completion of construction), (4) the original total replacement cost. Since the taxes at sale vary directly with the sale price, naturally both government and the private investor are affected in the same direction; a higher sale price provides more net after-tax income for the investor, but also increases the tax revenue at sale of the government. What is clear from

TABLE VII-3: COMPARISON OF GOVERNMENT COSTS AND INVESTOR EVALUATION OF SALE PRICE

	NEW CONSTRUCTION			REHABILITATION		
SALE PRICE (YR. 21)	PRESENT VALUE TO INVESTORS[1]	PRESENT VALUE OF GOV'T. COST[2] (% MTG.)	% CHANGE FROM BASE CASE	PRESENT VALUE TO INVESTORS[3]	PRESENT VALUE OF GOV'T. COST (% MTG.)	% CHANGE FROM BASE CASE
Base Case - Mortgage Balance	12.68	11.00%[4] (10.43 for 40-yr. holding period)	--	19.76%	26.73%	--
Sale at Mortgage Balance plus Taxes Due	15.89	10.06	down 8.57%	22.59	24.34	down 8.96%
Sale at Straight-Line Declining Price (Owner Pays Mortgage)	9.30	12.93	up 17.48	6.94	33.03	up 23.54

[1] Investor Discount Rate of 15% for New Construction

[2] Government Discount Rate of 6%

[3] Investor Discount Rate of 25% for Rehabilitation

[4] Government Costs are 10.43% of Mortgage Amount for a 40-Year Holding Period

Table VII-3, however, is that even at the higher discount rates of the private investor (compared with government discount rates) the relative increase or decrease in present value attributable to differences in sale price is greater for the private investor than for government because government only shares in approximately 25 to 30 percent of the change in gain at sale. In all the cases the total government cost (discounted present value, that is) of the rehabilitation project is approximately three times that of the new construction project.

If these types of projects are considered to be public means for providing housing for families in a selected income range, however, one might well question the wisdom of examining only tax revenues in the case in which the project is sold at a profit. If the sale is to the tenants, they will have had to pay a premium over the mortgage amount in cash or ultimately in rents unless they are able to refinance for the full amount at terms which make possible repayment with the same annual mortgage payment. If the project could be refinanced for the original mortgage terms and amount, the principal repayment of approximately 17 percent of the original mortgage could be recovered. If the project is sold on the open market for a price substantially above the mortgage amount, the consequences to the tenants are similar--the rents are likely to be increased both in order to carry the higher mortgage payment and to yield a higher before-tax cash return on the increased "value" of the project. (See also the computations on sale amount in the discussion on investor risks in Chapter VI at pp. 225-237.

3. Choice of Discount Rate

Before going further some discussion of the choice of discount rate

for evaluating the public costs of these projects is in order. We have been using a discount rate of 6 percent, but it is important to know why this was chosen and what difference it would make if other values were used for the government discount rate. The question is that of the appropriate relationship between time and money from the government perspective when the issue at hand is that of the present value of tax revenues foregone in the future. This question is the inverse of the one usually asked in benefit-cost analyses of potential public investment, where the government outlay is in the present and the benefits to accrue from a project are to occur in the future. In these cases the decision to undertake a public investment depends on whether the present value of the future benefits, discounted at an appropriate rate of return, exceed the opportunity cost of the consumption stream foregone because the funds involved are not available for private investment. (Musgrave, 1969)

Hearings in 1968 before the Subcommittee on Economy in Government of the U. S. Congress Joint Economic Committee produced a degree of consensus on discount rates for public investments: the minimum rate should be approximately 5 percent, based on the Federal Bureau of the Budget (now Office of Management and Budget) and Water Resources Council procedures, which, in turn, rely on running averages of the yield on long-term, essentially riskless, government securities. In establishing the upper bound on discount rates the Subcommittee concluded that the appropriate interest rate concept is the opportunity cost of the private spending or investment displaced by the public demand on resources through a public investment. Three possible rules were stipulated: (1) use the before-tax rate of return on private investments (of comparable risk, presumably), (2) for tax-financed investments the opportunity cost involves both a

reduction in private consumption and a reduction in private saving (and therefore investment), thus the discount rate should be related only partially to private interest rates, and (3) for debt-financed public investments the opportunity costs must be traced back through the consequences in the capital market of competition for investment funds. The upshot of the Subcommittee's observations was a conclusion that (as of 1968) the upper range of discount rates should be in the range of from 8 to 10 percent. (U. S. Congress, Joint Economic Committee (1968))

In the case of tax incentives, however, we are talking about encouraging a reallocation of private investment to favor housing by promising future government payments in the form of tax savings. In this case, it is not so clear how the correct social discount rate should be determined, except by considering how it is used in this analysis. I will shortly be comparing the discounted present value of the present tax treatment of subsidized rental housing with the discounted present value of alternative schemes for more direct government payment. One involves immediate payment, presumably out of tax revenues (since that is the predominant means of meeting the housing program payments included in the Federal Budget, even in a year of some budget deficit). The other scheme will assume that the Federal costs of direct payment are borne through annual payments on an increment in a project mortgage, again paid out of current revenue. In the first scheme private consumption and savings are assumed to be affected by the increase in taxes required to meet the direct payments. The private opportunity cost for the displaced funds might thus approach the 8 to 10 percent range. In the second scheme the increased mortgage amount reduces the capital resources available to the private sector and imposes an annual revenue requirement to meet the

obligation on the mortgage increment. Since this is a form of debt financing, a lower bound for the discount rate would be the yield on long-term government securities, or approximately 4 to 6 percent. Consequently the basic calculations are done using a 6 percent discount rate, but the fundamental comparisons between costs of the present tax arrangement and the proposed alternatives are made using a range of discount rates as low as 4 percent and as high as 10 percent.[1]

The discounted present values of government costs for the base cases as well as for the alternative direct payment schemes are shown in Table VII-4 for discount rates of 4, 6, 8, and 10 percent. (The direct payment schemes included in Table VII-4 are discussed shortly.) Government costs under present tax treatment are seen to vary only slightly over this range of discount rates. The new construction base case has a discounted present value of government costs equivalent to between 10.6 and 11.0 percent of the mortgage amount, while the rehabilitation case ranges from 25.2 to 27.2 percent of the mortgage amount. The calculation of government cost is thus relatively insensitive to discount rate over the range of discount rates of interest.[2] After presenting the results on total public costs,

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[1] Average yields on long-term U. S. Treasury bonds were approximately 4 percent for the period 1960 to 1965, leveled at about 5.2 percent during 1968, reached a peak of 7 percent in mid-1970 and then declined to approximately 5.5 percent by the end of 1971. For comparison, the average yields on new corporate bonds (Moody's Aa) were 4.5 percent in the early sixties, rose to about 6.8 percent by 1968, peaked at 9.6 percent in mid-1970 and had declined to 7.8 percent by the end of 1971. (See U. S. Treasury Dept., Treasury Bulletin, November 1971.)

[2] If the Federal revenues and revenue losses are simply summed, i.e., a discount rate of zero percent is used, then the "present value" of Federal costs is found to be 8.13 percent of the mortgage amount for new construction and 15.86 percent for rehabilitation. While unrealistic in terms of public investment analysis, such computations--simply obtaining the [cont.]

TABLE VII-4A: SENSITIVITY OF GOVERNMENT COSTS TO DISCOUNT RATE, NEW CONSTRUCTION (DDB DEPRECIATION)

	GOV'T. DISCOUNT RATE = 0%		4%		6%		8%		10%	
	P.V. OF GOV'T. COST (% MTG.)	% CHANGE FROM BASE COST	P.V.	% CHANGE	P.V.	% CHANGE	P.V.	% CHANGE	P.V.	% CHANGE
DEVELOPER/INVESTOR OWNED										
1. Base Case (Dividends Earned)	8.13%	--	10.77%	--	11.00%	--	10.89%	--	10.59%	--
2. No Dividends	14.8	Up 82.0	15.13	Up 40.43	14.61	Up 32.79	13.92	Up 27.83	13.17	Up 24.36
3. No Dividends and Project Foreclosed in Year 21	97.5	Up 1099.0	50.65	Up 370.14	38.42	Up 249.24	30.0	Up 175.52	24.11	Up 127.67
GOV'T. OBTAINS OWNERSHIP BY PAYING FEE TO DEVELOPER										
1. Outright Payment:										
a. Dividends Applied	1.15	Down 85.9	5.22	Down 51.54	6.46	Down 41.24	7.38	Down 32.26	8.05	Down 24.02
b. Dividends Lost	14.48	Up 76.8	13.93	Up 29.32	13.68	Up 24.34	13.44	Up 23.40	13.21	Up 24.71
c. Dividends Lost and Project Lost in Year 21	97.2	Up 1095.0	49.45	Up 359.02	37.48	Up 240.80	29.52	Up 171.09	24.15	Up 128.02
2. Payment from Mortgage with Increased Annual Subsidy:										
a. Dividends Applied	15.11	Up 85.9	9.86	Down 8.47	8.18	Down 25.68	6.88	Down 32.26	5.87	Down 44.58
b. Dividends Lost	28.48	Up 250.0	18.57	Up 72.39	15.39	Up 39.90	12.94	Up 18.85	11.03	Up 4.14
c. Dividends Lost and Project Lost in Year 21	111.0	Up 1268.0	54.09	Up 402.09	39.20	Up 256.35	29.02	Up 166.53	21.97	Up 107.45

TABLE VII-4B: SENSITIVITY OF GOVERNMENT COSTS TO DISCOUNT RATE, REHABILITATION (5-YR. DEPRECIATION)

	GOV'T. DISCOUNT RATE = 0%		4%		6%		8%		10%	
	P.V. OF GOV'T. COST (% MTG.)	% CHANGE FROM BASE COST	P.V.	% CHANGE	P.V.	% CHANGE	P.V.	% CHANGE	P.V.	% CHANGE
DEVELOPER/INVESTOR OWNED										
1. Base Case (Dividends Earned)	15.86%	--	25.19%	--	26.73%	--	27.19%	--	26.99%	--
2. No Dividends	22.5	Up 41.9	29.55	Up 17.29	30.34	Up 13.50	30.22	Up 11.15	29.57	Up 9.56
3. No Dividends and Project Foreclosed in Year 21	105.1	Up 563.0	65.07	Up 158.28	54.15	Up 102.56	46.30	Up 70.43	40.51	Up 50.10
GOV'T. OBTAINS OWNERSHIP BY PAYING FEE TO DEVELOPER										
1. Outright Payment:										
a. Dividends Applied	10.95	Down 30.91	14.66	Down 41.82	15.73	Down 41.15	16.48	Down 39.40	16.99	Down 37.04
b. Dividends Lost	24.29	Up 53.15	23.37	Down 7.24	22.94	Down 14.16	22.54	Down 17.10	22.15	Down 17.92
c. Dividends Lost and Project Lost in Year 21	106.9	Up 573.0	58.89	Down 133.31	46.75	Up 74.88	38.62	Up 42.16	33.09	Up 22.61
2. Payment from Mortgage with Increased Annual Subsidy:										
a. Dividends Applied	34.38	Up 116.7	22.44	Down 10.92	18.60	Down 30.41	15.64	Down 42.46	13.34	Down 50.58
b. Dividends Lost	47.65	Up 201.1	31.15	Up 23.66	25.81	Down 3.42	21.70	Down 20.16	18.50	Down 31.46
c. Dividends Lost and Project Lost in Year 21	130.4	Up 721.0	66.67	Up 164.65	49.62	Up 85.62	37.78	Up 39.10	29.44	Up 9.08

most of the remaining discussion on government costs will assume a government discount rate of 6 percent. As it turns out, the government costs are at a maximum in the range of discount rates from 6 to 8 percent for these base case computations.

Table VII-4 also shows the impact on government costs of loss of dividends in a project and of foreclosure on the project mortgage at the end of the twenty-first year. These are elements of government "risk" comparable to the investor risk for these same situations we have previously evaluated. The changes in government cost will be of particular interest when we consider the direct payment schemes and consider the impact of loss of dividends or foreclosure under government ownership versus ownership by private investors. The revenue loss for the Federal government connected with loss of dividends in a project results in a marked increase in government costs for the new construction case--an increase of 25 to 40 percent, depending on the discount rate used--but for rehabilitation cases a smaller increase in costs--in the range of 10 to 18 percent--because of the relatively larger revenue losses associated with the depreciation allowances in the case of rehabilitation. In the event of foreclosure, of course, government costs rise very markedly, even when it occurs as late as the twenty-first project year. I assume that the project is a total loss as the most extreme possibility. The results in the event of foreclosure are also quite sensitive to the

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[cont.] sum of all costs without regard for timing--are nevertheless occasionally used in assessing tax implications by the Congress. I do not regard undiscounted sums as a valid method for determining government costs for this work, but these results are also given for selected cases.

discount rate, because the magnitudes of loss required to cover the mortgage amount are quite large (83 percent of the original mortgage amount), yet are taken to occur in the distant future. Comparing government risk in these cases (using a 6 percent discount rate) with investor risk for the same circumstances (compare Table VII-4 with Figures VI-1 and VI-3), we see that for the loss of dividends case the present value of government costs increases by 3.6 percent of the mortgage amount compared with a reduction in present value of the project to the investor by 2.2 percent of the mortgage amount for a new project (15 percent discount rate) or by 2.0 percent of the mortgage amount for a rehabilitation project (25 percent discount rate).[1]

In the case of loss of dividends and project foreclosure, the present value of government costs increases by the equivalent of 40 percent of the mortgage amount while the investor's assessment of present value in those circumstances is no different from the case of losing dividends only, since a foreclosure is regarded by the IRS, hence by the investor, as having the same after-tax consequences as a sale at the mortgage balance. Even though the loss in a foreclosure on an FHA-insured loan is borne by an insurance fund, I make the conservative assumption that this loss should be regarded as a public cost in the cost comparisons for government.

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[1] Recall that we are examining here the present values of government and investors, i.e., their respective assessments now of hypothetical future occurrances.

4. Total Public Costs

Only the net Federal revenue costs of rental projects have been examined thus far; it is of interest before proceeding to note the sum of publicly borne costs in such projects from three sources: (1) net revenue costs for the Federal government, (2) Federal interest subsidy payments, (3) local real estate taxes foregone. The Federal interest subsidy payment is that required to make up the difference between the annual amount the mortgage holder (mortgagee) would receive at market interest rates (within the FHA interest rate ceiling plus the one-half percent mortgage insurance premium) and the amount required to amortize a loan over the same period at an interest rate of one percent. This is, of course, the maximum amount of the annual Federal interest subsidy payment. In the event that tenant incomes rose above the maximum level qualifying for the maximum interest subsidy, the tenant rent would be increased (within the limit of the rent required to pay the full market rate interest rate) so as to pay 25 percent of adjusted income for rent. The required annual Federal subsidy would then be diminished. Two cases are thus examined for the interest subsidy calculations: (1) assuming the maximum Federal interest subsidy payment over the life of the project (we are concerned here about only the 20-year investment horizon of the base cases for consistency), and (2) assuming tenant incomes rise over a period of 10 years at such a rate that by the end of the 10-year period everyone in the project is paying the full market rent without Federal subsidy.

That the 10-year phase-out of subsidy payments is plausible can be seen by reference to the base case. There we have a basic rent (fully interest subsidized) of $136.50 per month, or $1,638 per year. For this

rent to represent 25 percent of adjusted income the maximum eligible adjusted income would be $6,552. The adjustments are $300 per minor dependent (two assumed in this case) and an allowance of 5 percent of gross income for payroll withholding. The resulting eligible gross income is $7,521. The question is, how much could this income rise before the family would no longer be eligible for interest subsidy? The maximum interest subsidy available is $797.45 per year. Assuming no change in dependents, the family income could rise by an increment such that 25 percent of the increment (after the 5 percent allowance for payroll withholding) matches the interest subsidy. The allowable increment is thus $797.45/(0.25 x 0.95) or $3,357. An increase in annual income of $3,357 represents an annual rate of increase of 3.75 percent over a 10-year period, starting from $7,521. A family's income would have to increase this much just to keep abreast of inflation. Thus the 10-year phase-out of interest subsidy payments is even conservative. On the other hand it is unlikely that all of the original tenants will remain in the project for even 10 years. Replacement households might well be admitted with incomes qualifying for the full subsidy. Using the 20-year payment period for the subsidy thus covers the other extreme in which all of the tenants in the project continue to qualify for the full subsidy.

As tabulated in Table VII-5, the discounted present value of the full, 20-year interest subsidy payments is seen to be quite large in comparison with the discounted present value of the foregone revenues,. roughly 4 to 6 times as large for new construction and better than twice as large for rehabilitation. For the 10-year phase-out case the present value of the interest subsidy payments is still larger than the tax costs

TABLE VII-5: TOTAL PUBLIC COSTS -- DISCOUNTED PRESENT VALUE AS A PERCENTAGE OF THE MORTGAGE AMOUNT

	GOV'T. DISCOUNT RATE =			
	4%	6%	8%	10%
NEW CONSTRUCTION				
FEDERAL INCOME TAX LOSS	10.77%	11.00%	10.89%	10.59%
FEDERAL INTEREST SUBSIDY				
- 20-YR. PAYMENT	63.96	52.96	44.49	37.88
- 10 YR. PHASEOUT	22.23	20.32	18.64	17.15
LOCAL REAL ESTATE TAX ABATEMENT	10.91	9.03	7.59	6.46
TOTAL PUBLIC COSTS				
- 20-YR. PAYMENT	85.64	72.99	62.97	54.93
- 10-YR. PHASEOUT	43.91	40.35	37.12	34.20
REHABILITATION				
FEDERAL INCOME TAX LOSS	25.19	26.73	27.19	26.99
FEDERAL INTEREST SUBSIDY				
- 20-YR. PAYMENT	63.96	52.96	44.49	37.88
- 10-YR PHASEOUT	22.23	20.32	18.64	17.15
LOCAL REAL ESTATE TAX ABATEMENT	10.91	9.03	7.59	6.46
TOTAL PUBLIC COSTS				
- 20-YR. PAYMENT	109.04	88.72	79.27	71.32
- 10-YR. PHASEOUT	58.32	56.07	53.41	50.60

by a factor of as much as two for new construction, but for rehabilitation the present value of the interest subsidy payments is about one-half to one-third as large as the tax costs.

The amounts shown for local government revenues foregone are only a rough approximation. Typical practices for real estate assessment of non-subsidized rental property are to set the assessment on a new structure such that at the tax rate of the local municipality (or other local taxing authority) the annual property taxes will amount to 15 to 25 percent of gross rent. (Touche Ross, 1971) Developers of projects under Section 236 are often able to arrange for an assessment that will impose an annual property tax of 15 percent of the total basic rent (that is, the fully subsidized rent) or approximately 10 percent of the full market rent. At the very least, therefore, the effective contribution of the local taxing authority is the difference in taxes or about 10 percent of basic rent. This assumes, of course, that the tax generated by the parcel of land and improvements (buildings) where a Section 236 project is located would have produced tax revenues equal to 25 percent of total basic rent of a Section 236 project if some other use were made of the land. While some Section 236 projects might arguably have been located on land which had been left vacant (or buildings which had been left unrehabilitated) because the market for housing could not support any improvement, one could argue for other locations of 236 projects that conventionally financed, market-rate rental units and could have yielded tax revenues even greater than the equivalent of 25 percent of basic rents for the putative Section 236 project, because project rents would have been even higher than 236 basic rents. In other cases, some commercial or indus-

trial use might have produced higher property tax revenues still. It is impossible to resolve these questions in the framework of an analysis of "typical" projects, but it does not seem unreasonable to assert that a tax loss for local government is generated by a typical Section 236 project in an amount equal to 10 percent of basic rents.

Table VII-5 indicates that for the base cases the present value of this estimate of local government cost (discounted at the same rates as the Federal costs) lies in the range of 8 to 13 percent, depending on the discount rate used (between 10 and 4 percent). These costs are roughly comparable to the Federal tax costs of a new project and about one-half to one-third of the Federal tax costs of a rehabilitation project. The role of the tax abatement by local government is comparable to the interest subsidy by the Federal government: it enables a lower rent to be charged to the tenants. This contrasts with the role of the Federal depreciation allowances, which do not reduce rents but increase the profitability of the project.

When the Federal costs (tax losses plus interest subsidy payments) are added to the estimated local revenue losses, the results may be a bit surprising. The most extreme case is that of rehabilitation with full interest subsidy payment over the 20-year project life and using a government discount rate of 4 percent.[1] In that case the discounted present value of the government costs associated with the project is equivalent to the entire cost of the project! Such a result immediately

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[1] Four percent is admittedly on the low side, since even long-term government securities have not consistently been as low as 4 percent since 1963. (Treasury Bulletin, U. S. Treasury Dept., 1971)

leads to speculation on the possibility of outright government ownership of such a project with rents required only to cover operating costs but not repayment of debt, i.e., the same depth of tenant subsidy as in the public housing program, where Federal payments cover the annual costs of debt service on local housing authority capital bonds, but at government costs equal to the moderate-income Section 236 program. Even for higher government discount rates the total public costs associated with a rehabilitation project have a present value representing a major fraction of actual project costs. The new construction examples are lower than the rehabilitation ones simply by the difference in Federal revenue costs, since the interest subsidy payments and real estate tax abatements are taken to be the same in both cases. I have already hinted at the possibility of outright payment by government of all project costs as an alternative in the rehabilitation case which might be no more costly to government than the combined government costs of revenue losses (Federal and local) and interest subsidy payments. A less extreme option might be a direct payment of the developer's fee with the remainder of project finances continuing as at present--mortgage loan covering other capital costs, interest subsidy for providing reduced rents to tenants, tenant rents covering operating costs and (reduced) debt service. I shall now explore the direct payment options in some detail.

C. DIRECT PAYMENT OF DEVELOPER FEE

In the discussion to this point we have seen that in the case of a typical developer of Section 236 projects the investment value in these projects created by the favorable depreciation allowances and mortgage

loan terms is captured in the very early life of the project by the developer through syndication. That is, by establishing a limited partnership with the developer as a (sometimes the) general partner, high-tax bracket investors can be induced to contribute funds to the partnership in return for a share in the tax shelter which the project can provide for the investor's other ordinary income. The excess of these capital contributions by the limited partner/investors over the actual cash costs to the developer of the project amount to a fee paid to the developer for his services in developing the project and assuring the investor that the project will remain sound and operating successfully over the investment horizon of, typically, 20 years. We have seen that because of the risk inherent in these projects, the investors demand a relatively high rate of return on their invested funds, i.e., the after-tax returns of the project are heavily discounted (in the range of 15 to 25 percent). The government, however, which is providing the greater part of the after-tax return in the form of foregone revenues, can afford to use a much lower discount rate (in the range of 4 to 10 percent) for assessing the importance to government of the revenues which will be foregone (or collected) in the future. As we have seen, the upshot is that, while the developer is able to extract an adequate fee by this process, the government costs may at least equal or, in the case of rehabilitation, greatly exceed the effective investment value to the private investor. Viewed in this perspective the role of the Federal tax incentive is seen largely as a very complex and cumbersome way of getting the developer a fee for his services.

1. Outright Replacement of Investors' Capital Contributions

Since the present result of accelerated depreciation allowances is to provide a mechanism for the developer to extract a development fee, the direct approach would be to pay this fee outright and avoid the passive (and remote) investors as well as the legal and administrative expenses of syndication. HUD could administer direct fees to the developer just as it now administers the interest subsidy on behalf of the tenants. Fee schedules could be negotiated with individual developers or set by regional offices and could reflect the more risky nature of central city rehabilitation by allowing higher fees there. Similarly, fees for new construction projects could be set higher in those areas where the local HUD office determines there is the greatest need, not just where there is open land or little opposition, as is often the present case.

While a flexible fee schedule would seem reasonable if the government were to pay the developer fee directly, a fair comparison of alternatives should match the alternative scheme and the present one. Using the base case examples I assume that direct government payments are used to replace the capital contributions of the limited/partner investors. I assume that project costs are otherwise held constant and that the "required" fee for the developer is exactly the same as in the base cases for which the tax basis was maximized by including the developer's fee. The government payment to be made is thus assumed to be the same as that which would have been made to the developer by limited partner/investors and is assumed to be paid in the same schedule, viz., three annual installments beginning with the inception of development (at the outset of the project, before construction begins). But the Congress might be reluctant

to appropriate funds to replace the capital contributions at the time when they are required for payment to the developer.

Alternatively, development fees could be included in the mortgage of a subsidized low- and moderate-income housing project. Little administrative cost would be added to the mortgage insurance mechanisms by allowing the HUD area office or FHA insuring office to set fees for development at rates required in each local area, just as is now done in categories such as architect's fees, legal fees, builder's overhead allowance and so on. If it is acknowledged that the government is actually paying a developer fee (in addition to insuring the mortgage) through the costly and clumsy method of offering tax savings to investors, then there is no reason why the BSPRA could not be increased from 10 percent to 20 percent or whatever local experience showed was necessary to induce development in the absence of the tax incentive. The developer's fee would then come from the mortgage proceeds at completion of construction.[1]

A proposal to finance developer fees out of mortgage proceeds is admittedly reminiscent of the scandalized Section 608 program of Federally

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[1]Some thinking about flexible profit and risk allowances on the part of HUD is already evident, as for example the administration bill introduced in 1970 (H.R. 16643), which in Section 506(c)(2) allows the amount of profit included in a mortgage application to be administratively determined rather than limited by a statutory ceiling. In the House testimoney on the bill Mr. Barrett of the National Corporation for Housing Partnerships expressed concern that this might mean even lower allowances than the 10 percent Builder's and Sponsor's Profit and Risk Allowance of the Section 236 program. (U. S. Congress, House, 1970) My concern with flexible allowances would be that the mortgage amounts could be increased to provide a developer fee without action being taken concurrently on tax treatment of these projects to remove the fee available from the savings. Concurrent action would be necessary so that neither double windfalls nor complete discouragement of development through both reduced mortgage amounts and reduced tax allowances occurred.

insured apartment building construction. Some 469,000 units of housing were built or rehabilitated under the 608 program between its enactment in 1942 and its demise in 1954. (U. S. Senate, 1970) The program allowed mortgage loans in excess of direct project costs to be insured. In The City Is the Frontier Charles Abrams (1965) pointed out that in Senator Capehart's investigation of the 608 program in 1954 it was found that 80 percent of the mortgages issued covered more than the project costs. Because of excesses and the general revulsion of the public to the notion of windfalls to builders, the program was terminated and strict cost certification requirements were instituted on subsequent FHA programs. (See House and Home (1954) for a description of the scandal.) Tax allowances are, of course, now being used for the same purpose as the inflated loans of the 608 program--to induce development. Perhaps public opinion would not be so harsh on a well-regulated program of direct payments to developers, much like contractors for government procurements of other sorts, in a more sophisticated age. If direct payments were found to be politically unacceptable even now, then serious questions should be raised about performing exactly the same function through special tax benefits.

Even assuming political feasibility such a scheme of direct payments out of mortgage proceeds is conceivable, of course, only under a system of Federally insured loans for housing. Otherwise mortgage lenders would be uninterested in loaning funds in excess of those required directly for the project. Conventional lenders might be persuaded to make loans at high loan-to-value ratios if the lender were convinced that the projected cash flow from a project was quite high and that a high

market value could therefore be justified on the basis of the capitalized income expected from the project. The usual approach for developers of commercial property is just this; create a project such that the prospective cash flow justifies a market value well above the sum of input costs in the project and obtain a mortgage loan that covers all of the direct costs of the project, even at loan-to-value ratios of 75 to 80 percent. But, as discussed previously, Section 236 projects with limited cash income do not have a high capitalized value. In principle the required funds for the developer payments could come from another lending source (also with Federal guarantees); in the examples to be computed the effect of an alternate lender for the developer fee would be exactly the same as long as the interest rate was the same.

What if larger developer fees were allowed in the mortgage calculation, so that the mortgage payment for the project was 15 percent higher, for example, than is presently the case? Without additional mortgage loan subsidy, of course, this would raise the required rent and eligible incomes. It would be necessary, therefore, to make up the difference by additional government payments to the mortgage lender. For comparisons between base case costs and direct payment via increased mortgage loan, it is assumed that the mortgage amount is sufficiently increased to provide just the amount of additional funds required for the three payments to the developer and that the Federal government makes a commitment to augment the payments which would otherwise have been paid to the mortgage lender on the tenant's behalf by an amount sufficient to amortize the increment added to the mortgage without altering the effective rent to the tenant.

The amortization period of this increment should be the mortgage term, if government discount rates are above the interest rate, but the amorti-

zation period should be minimized if discount rates are below the mortgage interest rate.

Table VII-6 illustrates the computation of the discounted present value to government of direct payments in lieu of the investors' capital contributions, both assuming outright payment (as from current revenues) and assuming the mortgage loan is increased by an amount sufficient to cover the payments to the developer. Comparisons are made shortly (in Table VII-4) between the present value of government costs in the base cases and under the assumed fee replacement schemes. First, some questions are raised concerning project ownership.

If the total costs for all resources, including the developer/builder's services, are covered by a combination of the mortgage loan and direct payments by government of the capital contributions normally contributed by investors (perhaps through the mortgage also, as suggested above), then one could argue that the title to the property should belong to government, subject to a mortgage which is fully guaranteed by the Federal government. It is but a short step to the notion that the Federal government could offer the project to a tenant cooperative at no cost. Furthermore, the government would then have claim to the annual dividend which the project rents are supposed to generate, assuming that the rents stay at exactly same level as they were in the base case under ownership of the limited dividend sponsor, i.e., the limited partnership of the developer and the limited partner investors. Thus the government could apply the dividends in several possible ways: (1) use them to reduce the annual costs of interest subsidy payments and the cost of having paid the equivalent of the investors' capital contributions, (2) use them to enlarge the annual management fee to provide a bonus to the managing agent for

TABLE VII-6A: GOVERNMENT COSTS FOR DIRECT PAYMENT OF DEVELOPER -- NEW CONSTRUCTION

OUTRIGHT PAYMENT:

YR.	CAPITAL CONTRIBUTION	DISCOUNTED PRESENT VALUE
0	$ 78,653.94	$ 78,653.94
1	78,653.94	74,201.83
2	78,653.94	70,001.73
	TOTAL PRESENT VALUE =	$222,857.50

PAYMENT FROM MORTGAGE:

Mortgage Increase (at end of development year)[1] - $236,228.88

	REPAYMENT OVER 20 YRS. AT 7-1/2%	REPAYMENT OVER 40 YRS. AT 7-1/2%
Annual Payment	$ 23,172.26	$ 18,756.57
Present Value at 6%		
End of Dev.	$265,781.56	$282,216.92
At Start	$250,737.44	$266,242.37
P.V. as % Mortgage	15.39%	16.34%

VALUE OF ANNUAL DIVIDEND TO GOVERNMENT:

Amount of Annual Dividend	$ 10,862.40
Present Value at 6% of 20 Yrs.	$124,589.69
Present Value at Start of Dev.	$117,537.50
P.V. as % Mortgage	7.21%

[1] Assumes government payment of capital contributions to developer, financed by an increased mortgage amount and increased annual subsidy to amortize the increase.

TABLE VII-6B: GOVERNMENT COSTS FOR DIRECT PAYMENT OF DEVELOPER -- REHABILITATION

OUTRIGHT PAYMENT:

YR.	CAPITAL CONTRIBUTION	DISCOUNTED PRESENT VALUE
0	$ 132,160.50	$ 132,160.50
1	132,160.50	124,679.72
2	132,160.50	117,622.37
	TOTAL PRESENT VALUE =	$ 374,462.59

PAYMENT FROM MORTGAGE:

Mortgage Increase (at end of development year)[1] - $ 396,930.38

	REPAYMENT OVER 20 YRS. AT 7-1/2%	REPAYMENT OVER 40 YRS. AT 7-1/2%
Annual Payment	$ 38,935.86	$ 31,516.39
Present Value at 6%		
End of Dev.	$ 446,587.13	$ 474,204.96
At Start	$ 421,308.81	$ 447,363.17
P.V. as % Mortgage	25.81%	27.41%

VALUE OF DIVIDEND TO GOVERNMENT:

Amount of Annual Dividend	$ 10,881.54
Present Value at 6% of 20 Yrs.	$ 124,809.10
Present Value at Start of Dev.	$ 117,774.56
P.V. as % Mortgage	7.2%

[1] Assumes government payment of capital contributions to developer, financed by an increased mortgage amount and increased annual subsidy to amortize the increase.

especially satisfactory operation of the property,[1] (3) use them as a cushion out of which to absorb increases in operating costs before any rent increases are necessary, (4) apply them to social service programs for the residents, (5) immediately use them to reduce project rents by the amount of the dividend. For purposes of evaluating the impact on government costs of these options, the second, third and fourth possibilities are regarded as equivalent. That is, the dividends are assumed to be "lost" for purposes of Federal revenues or annual expense reductions either because they have been applied as a tax-free bonus for management or have immediately been used up in project operating expenses. For purposes of comparison with the base cases the fifth option is inappropriate to consider, since we are holding the tenants' position fixed in these comparisons with alternate means of providing development and operating incentives, i.e., the tenant subsidy is held constant in the comparisons.

Table VII-4 summarizes the impact on government costs of the direct payment schemes, including cases in which the project dividend is applied to reduce net government costs, cases in which the dividend is "lost" in the sense that it is used for some purpose other than government revenue, and cases in which the project cannot support itself and is forced into foreclosure by the twenty-first year. Both the direct fee-payment possibility and the payment of fee directly but out of increased mortgage pro-

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[1] An annual fee for the management agent for a project is included, of course, as an element in the rent of a Section 236 project anyway. The amount usually is approximately 5 percent of gross rents, although in some areas the FHA allows management fees in the rents to be as high as 7 percent. If the project cash dividend were available as a bonus to encourage superlative management, the total possible management fee would be over twice the current amount; in the base cases the dividend is $10,862 compared with a management fee of $8,190 (see Table V-5).

ceeds amortized over a 20-year period are considered. In each case the discounted present value of net government costs is compared with the situation in which the developer and limited partner investors retain ownership and control of the project as at present, including cases in which the project dividends are lost to the developer and in which the project suffers foreclosure. "Foreclosure" is taken to be in the most extreme form, viz. that the project is completely worthless and the mortgagee must be completely reimbursed for the amount of the outstanding mortgage balance.

Consider first the comparisons between base case costs and the direct payment case. For the case in which the government pays the developer a fee directly and applies the project dividends to reduce net government costs, government costs are reduced by 25 to 50 percent from the base case, depending on the discount rate assumed for new construction. In the rehabilitation case the discounted present value of government costs would decrease by 40 percent from the base case costs, essentially independent of the discount rate used. Even when the annual dividend is "lost," net government costs are still reduced in the direct payment case, markedly so for the rehabilitation project. In the foreclosure cases as well the discounted present value of net government costs is less for the direct payment method than in the base case calculations with the developer/investors retaining ownership and using the tax allowances.[1]

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[1] If government costs are not discounted, but simply summed, the following observations can be made: (1) if government costs are reduced by applying the dividend after outright direct purchase of ownership rights from the developer, substantial savings in government costs over the present situation are possible--costs are reduced by 86 percent for new construction and by 31 percent for rehabilitation, (2) if government [cont.]

Advantages of using the mortgage as a device for obtaining the funds with which to replace the investors' capital contributions are seen in Table VII-4 to be less than the direct payment case when the discount rate used is lower than the interest rate assumed (7-1/2 percent). Conversely, when the discount rate used for assessing the present value of government costs is higher than the mortgage interest rate, the advantage lies with postponing government payment by obtaining the capital contribution replacement out of mortgage proceeds and amortizing the increment over the life of the mortgage.[1] From the government point of view, then, the rational choice between direct payment and payment by means of proceeds from an increased mortgage amount hinges upon the conclusion reached about

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[cont.] obtains ownership by direct payments but no dividends are earned or if, in addition, the mortgagee has to be completely reimbursed at the end of 20 years of operation, the government costs are about the same as if these same circumstances occurred under the present system of ownership by private investors combined with tax incentives, (3) the direct-payment-through-mortgage-increase case makes no sense (costs much more than the current system) because we take government costs to have a discount rate of zero but pay the going interest rate (7-1/2 percent) on the amount by which the mortgage is increased to cover the developer payments.

[1] In the comparisons made in Table VII-4 a 20-year amortization period is assumed for the mortgage increment used to pay the developer. As mentioned previously, the choice of repayment period depends upon the relative values of the government discount rate and the mortgage interest rate. Since the relative magnitudes of the mortgage increment and of the present value of the annual repayment cross at the point where the government discount rate equals the mortgage interest rate, a 20-year amortization period has been chosen as a compromise. This choice also has the advantage that all of the government costs for the project are included within the period of time for which the discounted present values have been computed, rather than having some of the costs neglected, as would be the case if a 40-year repayment period were chosen but present values computed only for the first 20 years of project operation. It should be noted that the neglect of the project dividends past the 21st year makes the net government costs slightly larger than if they were included. But the present value of the dividend for the 21st to 41st project years would only amount to 0.014 percent of the project mortgage amount.

the effective discount rate for evaluating future government expenditures and whether this discount rate is above or below the mortgage interest rate.

It will help to give a note of reality to all of this complicated play with numbers to cast the preceding observations in the form of a cash flow statement for the Federal government (the Treasury) for a typical situation and for one of the many possible direct payment schemes outlined here. Table VII-7 is such a cash flow statement. We assume that at the beginning of year one a commitment is made to support 100,000 units of rental housing under Section 236. The annual interest subsidy required to reduce the rent to tenants is assumed to begin upon completion of these 100,000 units at the beginning of year two. For purposes of this illustration the interest subsidy payments are assumed to phase out over a 10-year period as tenant incomes rise. If the payment were steady for the entire duration of the project, it would not make any difference for this illustration, since I will assume that the interest subsidy payments are the same whether the project is owned by investors or is, in effect, owned by the Federal government after the government has assumed the payments to the developer in lieu of the investors. For both new construction and rehabilitation cases, we sum up, in each year of the operation of the projects, the net cash flow for the Treasury. Interest subsidy payments are an outflow, as are annual payments required to finance the payments to the developer through the

TABLE VII-7: COMPARISON OF CURRENT GOVERNMENT COSTS AND A DIRECT PAYMENT SCHEME

Assumptions: 100,000 units committed at beginning of year 1, completed at beginning of year 2, sold by owner at end of year 21.

Average mortgage loan amount, $16,300 per unit; Annual payment to finance payments to developer through mortgage, $232 per unit (new), $389 per unit (rehabilitation).

Annual cash dividend, $108.75 per unit.

Interest subsidy, $800 per unit phased out in 10 years.

Owner is in 50% marginal tax bracket every year and is subject to minimum tax on preference income.

	PROJECT YEAR																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
NEW CONSTRUCTION																					
Interest Subsidy	0	80	72	64	56	48	40	32	24	24	16	8	0	0	0	0	0	0	0	0	0
Federal Revenue	(70)	(29)	(27)	(25)	(23)	(21)	(20)	(18)	(16)	(15)	(13)	(11)	(10)	(8)	(7)	(5)	(3)	(2)	0	2	188
Net Cost of Current Program[1]	70	109	99	89	79	69	60	50	40	39	29	19	10	8	7	5	3	2	0	2	188
Net Cost with Full Replacement of Equity through Mortgage Loan[2]	0	102	99	86	78	70	66	54	48	46	38	30	22	22	22	22	22	22	22	22	22
REHABILITATION																					
Federal Revenue	(75)	(132)	(130)	(129)	(128)	(127)	2	3	4	4	5	6	7	8	8	9	10	10	11	12	362
Net Cost of Current Program[1]	75	212	202	193	184	175	38	29	20	20	11	2	(7)	(8)	(8)	(9)	(10)	(10)	(11)	(12)	(362)
Net Cost with Full Replacement of Equity through Mortgage Loan[2]	0	108	100	92	84	76	68	60	52	52	44	36	28	28	28	28	28	28	28	28	28

[1] Revenue Loss PLUS Interest Subsidy.

[2] Mortgage Loan Payment for Payments to Developer PLUS Interest Subsidy LESS Project Dividend.

mortgage loan. I have assumed that the payments to the developer are financed through the mortgage on the assumption that this device for leveling out the appropriations required would be most palatable politically. Revenues are regarded as outflows if there is a net tax saving for the investor/owners and as inflows if taxes are actually collected. In the case in which the government has replaced the role of the investor/owners by making the same capital contributions, the government lays claim to the annual dividends; in the case shown the annual payments for amortizing the developer payments through the mortgage loan can then be reduced by the amount of the project dividends. The results of Table VII-7 show that this particular direct payment scheme levels out the net cash flows from the Treasury, compared with the current system, and substantially reduces the net outflow from the Treasury in the early years, especially for the rehabilitation case. As we noted in Table VII-4, this particular scheme for direct payments results in a net saving for government of 41 percent for both new construction and rehabilitation if the government costs are capitalized, or converted to present values, using a discount rate of 6 percent. The comparison with other discount rates is made in Table VII-4. Each of the other figures in Table VII-4 is the result of comparisons similar to those outlined in

Table VII-7, which is intended to be illustrative of only one of numerous options for direct payment which are described in this chapter.

2. Comments on Outright Replacement of Investors' Capital Contributions

Once freed of the constraint of tax allowances as a means for providing the development fee for low- and moderate-income housing, the same mechanisms for providing a development fee could be used both for profit-motivated developers and for a housing development group in a metropolitan area which acts as the developer for local community groups or for tenant cooperatives. Payment of a development fee to community housing development groups could provide them with not only the administrative costs of development and front money requirements, but would provide them with some additional resources with which to undertake related social programs and services in the areas where housing was being developed. Assuming continued ownership by a nonprofit community group or tenant cooperative, there would presumably be no requirement for including dividend payments in the rents to promote stable operation.

The proposal made here for a direct fee in subsidized housing is not a new one. In fact, a form of it has been found quite successful in developing new units for public ownership under the public housing Turnkey program. In that program, of course, the developer is not expected to own or to operate the property, but he does get his fee in a lump sum as part of the overall contract. What is being proposed is that for a privately developed and privately owned subsidized rental housing, a development fee could replace the tax incentive. The arrangement for payment of the fee could conceivably take several forms other than a replica of

the current system:

(1) "Turnkey" development for ownership by a nonprofit group or tenant cooperative, in which case the fee would be paid at completion. This is already possible for a nonprofit group, which can include a builder's profit in the 100 percent mortgage. What is needed is an additional source of funds for administrative costs of the developer entity and for project set-up costs (such as training in tenant management).

(2) Development for short-range ownership (one to five years), in which case part of the fee would be paid at completion and part at the end of each year of successful operation, with "success" measured in terms of the quality of housing services delivered (physical state of buildings and tenant satisfaction) and in terms of efforts made by the developer/owner to establish a capability for a tenant group or other local entity to manage and/or own the units. A possible form here would allow for a bonus paid to the owner when sale to the tenant group occurred; this would constitute an alternative to the "roll-over" tax incentive to be discussed in the next chapter.

(3) Long-term ownership and operation, in which case the developer would receive an initial fee (as in public housing Turnkey) and an annual bonus for successful operation administered by HUD. This would be quite analogous to the present option for contracted management by a private party of units owned by the local public housing authority.

Advantages can be seen in terms of administering housing policy more directly for the direct fee payment approach. As has been shown, the net drain on the Treasury of direct incentives could be smaller than the losses of revenue through the depreciation device. For this net saving to be achieved, however, it could be argued that one would have to be assured that the revenue otherwise foregone was actually collected and not simply lost through one of the many other tax shelters available (such as oil or railroad rolling stock investment). Several rebuttals to this

argument are available. We have seen that as far as investors are concerned their after-tax return tends to be consistent with the after-tax return on other, non-tax favored investments of comparable risk. Any windfalls in the syndication system tend to fall to the developer and syndicators, not to the investors. A similar situation presumably exists in other tax-favored activities. Thus the full range of investment opportunities can be considered by an investor who finds that tax sheltered investments in housing no longer exist. There would not, therefore, be a direct shift of all housing investments into other tax-sheltered investments, though there would be some. Investors in very high brackets might tend to stay with tax favored investments if they are in considerably higher brackets than the marginal investor for whom the prices of investments are set. Even here it would be a mistake to regard the shifted investment capital as "lost" to other tax shelter devices. If investment in these other areas (oil or railroad rolling stock, for example) serves public purposes worth the revenue losses, then the tax dollars are "lost" only in the same sense that they are now "lost" in housing. If they do not serve a public purpose they should be discontinued. Otherwise the system may be inefficient but not artibrary. One would expect that conclusions paralleling those drawn here with respect to tax incentives in housing could be drawn for these other areas, in which case direct payments might be more efficient there as well, though perhaps even more difficult to justify in terms of social or economic policy.

3. Alternative Tax Rules

Conceivably there could be either political opposition to outright government purchase or situations in which public or tenant ownership

would be impractical. What alternatives could be considered for reducing net government costs, retaining, if necessary, the current incentives for development and operation? Assuming that the ownership of the project is left in the hands of a developer or developer/investor combination, we consider the relative advantages of altering the present tax treatment of real estate while preserving the investment value at present levels by direct payments to the developer. Private investors and those involved in marketing tax shelter may once again be involved in the development process. Both outright payment and payment from increased mortgage proceeds with annual payments to amortize the increase in mortgage amount are considered as before. We consider the following possibilities:

(1) Straight-line depreciation--with 40-year life for new construction, 20-year life for rehabilitation

(2) Mandatory 40-year life in the case of rehabilitation

(3) No depreciation whatever

(4) Removal of minimum tax (on excess depreciation and capital gains)

(5) Removal of capital gains exclusion--full tax at ordinary rates (this is more severe than full recapture because the recapture provisions only apply to recovery of excess depreciation, not to the full amount of gain realized at sale).

(6) No taxes whatever, i.e., allow a tax-free dividend

(7) Allow taxable dividend only; no other taxes or tax losses

In each of these cases it is of interest to examine first the consequences of making the indicated change without compensating government payments for the developer/builder. In this situation we consider several

measures of investment: (1) the internal rate of return for the developer/builder on an assumed cash equity of 3 percent of the mortgage amount (without consideration for "sweat equity"), (2) the present value of the project to an investor with discount rates the same as those used in the base case, and (3) the average annual return on the investors' investment if the investors make capital contributions having the same discounted present value as the after-tax returns of the project. Government costs are considered for three situations: (1) altered tax policy without compensating government payments, (2) altered tax policy with direct compensating payments to developer to make the project equally as lucrative as under present tax policy, (3) altered tax policy with the compensating government payments made out of the proceeds of an increased mortgage, with the increased amount amortized over the life of the mortgage by government payments.

Table VII-8 presents the results of these calculations for the depreciation changes. Restriction to straight-line depreciation causes the investors' assessment of discounted present value of the project to drop to comparable levels for new construction and rehabilitation, both around 10 percent of the mortgage amount. Since I have assumed cash costs of 3 percent of the mortgage amount, these levels of value for investors would leave the developer/builder with a net fee of roughly 7 or 8 percent; depending on the long-term responsibilities of the developer, this level of net fee might be adequate to induce his activity in the case of relatively straightforward projects.

In such cases government costs would obviously be reduced, as re-

TABLE VII-8: COMPARISON OF INVESTMENT VALUE AND GOVERNMENT COSTS UNDER ALTERNATE DEPRECIATION POLICIES

	WITHOUT PAYMENTS TO MATCH BASE CASE				WITH GOV'T. PAYMENTS TO MATCH BASE CASE			
					DIRECT PAYMENT		PAYMENT FROM MTG. PLUS SUBSIDY	
	INTERNAL RATE OF RETURN (%) TO DEVELOPER ON 3% EQUITY	PRESENT VALUE TO INVESTOR[1] (% MTG.)	AVG. ANNUAL RATE OF RETURN ON INVESTORS' EQUITY (%)	PRESENT VALUE OF GOV'T. COSTS[2] (% MTG.)	P.V. OF ADDED GOV'T. COSTS (% MTG.)	% CHANGE FROM BASE CASE COSTS	P.V. OF ADDED GOV'T. COSTS (% MTG.)	% CHANGE FROM BASE CASE COSTS
NEW CONSTRUCTION								
-BASE CASE	106.77	12.68	3.02	11.00	--	--	--	--
-STRAIGHT-LINE DEPREC. (40-YR. ECON. LIFE)	88.63	9.80	3.58	7.13	3.10	down 6.99	3.49	down 3.46
-NO DEPRECIATION	47.33	3.81	0.83	(2.97)[3]	9.54	down 40.30	10.73	down 29.44
REHABILITATION								
-BASE CASE (5-YR. DEPREC., 20-YR. LIFE)	183.86	19.76	2.75	26.73	--	--	--	--
-STRAIGHT-LINE DEPREC. (20-YR. ECON. LIFE)	119.45	11.37	6.90	17.46	9.75	up 1.77	10.97	up 6.33
-NO DEPRECIATION	58.07	3.81	0.70	(2.69)[3]	18.52	down 40.78	20.83	down 32.12
-5-YR. DEPRECIATION, 40-YR. ECON. LIFE	180.31	18.12	2.61	23.67	1.91	down 4.34	2.15	down 3.45

[1]Discount rates of 15% for new, 25% for rehabilitated housing.

[2]Government discount rate = 6%.

[3]Government derives net gain in present value of revenue gains and losses from project (negative loss).

flected in Table VII-8.[1] However, if compensating government payments were required, the results for new construction and rehabilitation differ. Discounted government costs drop from base case costs for new construction even when the method used is that of payment through increased mortgage. In the rehabilitation case, however, discounted government costs are slightly increased over the base case; government losses from revenue losses with a 20-year straight-line depreciation schedule and conversion of those deferred taxes to capital gains are sufficiently large that a requirement to match the investment value of the base case (current 5-year depreciation of rehabilitation expenditures) results in total discounted government costs in excess of the base case. In passing we note that a requirement to use a 40-year economic life for the rehabilitation project would make no significant difference to either investors or the government, although the percentage reduction in government costs would be greater than the reduction in investment value.

With no depreciation allowances we begin to approach the complete replacement case once again.[2] In this situation the carrying costs incurred during construction are assumed to be claimed as losses in the construction year; the resulting tax saving constitutes a primary source

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[1] Only a 6 percent discount rate for government costs is used in these examples.

[2] The notion of a direct payment to replace the investors' evaluation of the tax shelter value of such projects has been suggested in similar terms by others. For example, Prof. Charles Haar, now of Harvard Law School and formerly Assistant Secretary for Metropolitan Development in the U. S. Department of Housing and Urban Development, suggested in an M.I.T. housing seminar in January, 1971, that HUD "buy" the depreciation. Possibly Professor Haar had such a possibility in mind as the one suggested here.

of investment return. While the internal rate of return is high, it now depends heavily upon the annual dividend. The discounted present value of the after-tax returns drops to under four percent of the mortgage amount--hardly enough over cash costs of 3 percent to induce development of these projects. As we would expect from the results for the complete replacement of capital contributions, government payment to compensate for the reduced investment value of the no depreciation case reduces discounted government costs markedly--by 40 percent for outright payment and by 30 percent for payment through an increased mortgage. These are roughly the same levels of reduction in discounted government costs as in the complete replacement cases previously discussed.

The average annual rates of return on investors' equity are small in all of the cases discussed. This suggests that even the base case projects could not be marketed on this basis and that a reasonably sophisticated discounted present value analysis is necessary to establish the investment value. The internal rates of return for the developer are high in all cases, but are, of course, more sensitive to the risk of losing annual dividends in the straight-line and no depreciation cases.

Calculations of investment value and discounted government costs for the alternative tax possibilities dealing with the minimum tax, the capital gains exclusion tax-free dividend and taxable dividend only are summarized in Table VII-9. In the earlier discussion on investment value of Section 236 projects we noted that removal of the minimum tax would increase the investors' assessment of the present value by approximately 10 percent for new construction and 20 percent for rehabilitation. Table VII-8 shows that the corresponding increases in government costs

TABLE VII-9A: COMPARISON OF INVESTMENT VALUE AND GOVERNMENT COSTS UNDER ALTERNATE TAX POLICIES, NEW CONSTRUCTION

	WITHOUT PAYMENTS TO MATCH BASE CASE				WITH GOV'T. PAYMENTS TO MATCH BASE CASE			
					DIRECT PAYMENT		PAYMENT FROM MTG. PLUS SUBSIDY	
	INTERNAL RATE OF RETURN (%) TO DEVELOPER ON 3% EQUITY	PRESENT VALUE TO INVESTOR[1] (% MTG.)	AVG. ANNUAL RATE OF RETURN ON INVESTORS' EQUITY (%)[2]	PRESENT VALUE OF GOV'T. COSTS[3] (% MTG.)	P.V. OF ADDED GOV'T. COSTS (% MTG.)	% CHANGE FROM BASE CASE COSTS	P.V. OF ADDED GOV'T. COSTS (% MTG.)	% CHANGE FROM BASE CASE COSTS
-BASE CASE	106.77	12.68	3.02	11.00	--	--	--	--
-NO MINIMUM TAX	110.84	13.77	3.26	12.78	NOT APPLICABLE--DEVELOPER GETS MORE THAN IN BASE CASE			
-NO CAPITAL GAINS EXCLUSION	105.68	10.79	1.78	7.78	2.04	down 10.77	2.29	down 8.46
-NO TAXES (TAX-FREE DIVIDEND)	18.13	3.63	10.55	- 0 -	9.76	down 11.25	10.98	down 0.15
-TAXABLE DIVIDEND ONLY	8.10	1.81	5.27	(3.61)[4]	11.72	down 26.25	13.19	down 12.92

[1] Discount rates of 15% new and 25% rehabilitation.

[2] Investor assumed to make three capital contributions (total equity) having present value of previous column; tax sinking fund assumed.

[3] Government discount rate = 6%.

[4] Net gain in present value (negative loss).

TABLE VII-9B: COMPARISON OF INVESTMENT VALUE AND GOVERNMENT COSTS UNDER ALTERNATE TAX POLICIES, REHABILITATED HOUSING

	WITHOUT PAYMENTS TO MATCH BASE CASE				WITH GOV'T. PAYMENTS TO MATCH BASE CASE			
					DIRECT PAYMENT		PAYMENT FROM MTG. PLUS SUBSIDY	
	INTERNAL RATE OF RETURN (%) TO DEVELOPER ON 3% EQUITY	PRESENT VALUE TO INVESTOR[1] (% MTG.)	AVG. ANNUAL RATE OF RETURN ON INVESTORS' EQUITY (%)[2]	PRESENT VALUE OF GOV'T. COSTS[3] (% MTG.)	P.V. OF ADDED GOV'T. COSTS (% MTG.)	% CHANGE FROM BASE CASE COSTS	P.V. OF ADDED GOV'T. COSTS (% MTG.)	% CHANGE FROM BASE CASE COSTS
-BASE CASE	183.86	19.76	2.75	26.73	--	--	--	--
-NO MINIMUM TAX	197.51	23.95	3.12	34.56	NOT APPLICABLE--DEVELOPER GETS MORE THAN IN BASE CASE			
-NO CAPITAL GAINS EXCLUSION	177.00	12.67	1.92	20.16	4.67	down 7.11	5.26	down 4.93
-NO TAXES (TAX-FREE DIVIDEND)	18.13	2.11	19.73	- 0 -	20.49	down 23.32	23.06	down 13.73
-TAXABLE DIVIDEND ONLY	8.10	1.05	19.73	(3.61)[4]	21.72	down 32.24	24.43	down 22.07

[1] Discount rates of 15% new and 25% rehabilitation.

[2] Investor assumed to make three capital contributions (total equity) having present value of previous column; tax sinking fund assumed.

[3] Government discount rate = 6%.

[4] Net gain in present value (negative loss).

relative to the base cases would be 15 percent and 30 percent, respectively. In these cases there is no question of compensating government payment, because the investment value is already greater than for the base cases.

Elimination of the capital gains exclusion would have greater impact on rehabilitation than on new construction. The resulting changes in discounted present value for both investor and government costs are comparable to those for the restriction to straight-line depreciation; government costs are greatly reduced and investment value is reduced to 10 to 12 percent. Again, these levels provide a fee margin for the developer of 7 to 9 percent, which in some cases might be adequate incentive for the developer/builder. Substantial government savings are again possible even when compensating payments are made to match the base case investment value to the developer.

The proposition of granting a tax-free status to dividends from projects of this type is admittedly a bit speculative as a means of replacing the incentives created through depreciation allowances. To the extent that the dividend serves as an incentive to successful operation of the project, it could be argued that some annual incentive of this type should be left in the project, even if the primary development incentive is shifted from depreciation allowances to direct government payments to the developer. That some additional development incentive would be required is clear from Table VII-9, where the investment incentive of the dividend alone (whether taxable or not) would be inadequate; for example, the present value of the tax-free-dividend project would only be under 4 percent of the mortgage amount for the new construction case and

just over 2 percent for the rehabilitation case--too low in the rehabilitation case even to cover the cash requirement of 3 percent of the mortgage amount. Provision of direct government payments to compensate for the difference between investment value of the project dividends (either taxable or tax-free) and the investment value of the base cases once again results in lower discounted government costs than in the base cases. Discounted government costs are reduced through outright government payment to compensate for original investment value by over 25 percent in the new construction case and over 32 percent in the rehabilitation.

Once the notion of direct payment is entertained as a replacement for tax incentives, other possibilities than those already mentioned would begin to appear feasible. For example, government payments higher than the present annual dividend could be promised for profit-motivated owners whose projects were operated such as to satisfy Federal guidelines for quality of housing services, racial balance in tenantry, or acceptance of deep subsidy households (such as through the leased housing program or Rent Supplements), for example. It is hard to know at present how many developers syndicate their projects to sell tax shelter to high tax-bracket investors, but it is not unreasonable to surmise that many more would be willing to retain direct ownership if the economic incentives were in the form of direct payments rather than through tax losses which many developers are unable to use or to use fully. There would be less tendency for the developer to attempt to extract the financial reward for the project entirely at the outset of the project if ownership generated annual cash returns rather than tax losses. Presumably the magnitude of

these cash returns would have to be set such that the present value of the returns was competitive with non-subsidized real estate having no control other than the rental market on the annual cash return. Again, one would anticipate that the discounted present value of these payments by government would be less than that now incurred for the tax incentive approach.

D. SUMMARY

The upshot of all these detailed observations about government costs is that there are indeed lower cost approaches to encouraging development and operation of low- and moderate-income rental housing than by use of special tax allowances to investors in this type of property. We have seen that the greatest reductions in discounted government costs can be achieved through outright replacement of the investors' role by direct government payments to the developer to replace the capital contributions which are now made by the limited partner investors in a typical syndication. These payments can be spread by government for the same reason they are now spread in private operation--to offer incentive to complete major stages of the project successfully before the financial rewards can be achieved. Government costs can be shifted to an annual basis, even though the government replacement of capital contributions is made in the early stages of a project, by increasing the mortgage amount and providing annual government payments sufficient to amortize the additional increment in the mortgage. Whether this approach yields greater or lesser savings in discounted government costs depends basically on whether the government discount rate is larger or smaller than the mortgage in-

terest rate. In either case the financial inducement to the developer is at least as great as at present, even if administrative costs for government equalled the amounts presently paid out of the cpaital contributions to those involved in the syndication process--brokers, accountants, attorneys, for example. Furthermore, if the Department of Housing and Urban Development were to administer the direct payments, a single public agency would have the responsibility for aligning financial inducements--payments to developers, mortgage insurance, mortgage payment subsidy, public housing leasing, rent supplement payments--with public policy on housing and urban development in such matters as location, racial and economic integration, project unit distribution and size, construction, supporting programs of social services, for example. Finally, to the extent that development could be induced with capital contributions to the developer smaller than those made possible through the present depreciation allowances, the direct government payments could be lower than those assumed in this chapter, and the resulting savings in government costs would be even larger than those described.

CHAPTER VIII: TRANSFER OF OWNERSHIP TO TENANT OR COMMUNITY GROUPS

In the preceding discussions we have examined in some detail the 236 rental housing program from the perspective of the private developer and investor and from the perspective of the government. In this chapter the primary focus is on the interests of the tenants in 236 projects, the way in which the form of ownership affects them, and their options for more direct control of their housing.[1] For purposes of the present discussion, it is assumed that the weight of arguments about ownership of one's own housing presented in Chapter II come out, on balance, favoring the homeownership ideal. In the case of the apartment buildings to which the 236 program applies "homeownership" means either cooperative ownership, condominium ownership or control of a corporation owning the building even though tenants may not be the primary investors in the project. In the process of exploring ownership options we examine the "rollover" incentive established in the Tax Reform Act of 1969.

A. OPERATING INCENTIVES IN THE ABSENCE OF TENANT CONTROL

Before exploring the ownership options it may be instructive to look first at the particular features of operating incentives in a 236 project under absentee ownership. The landlord-tenant relationship has seldom

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[1] Particular attention has been paid to tax shelter aspects of the choices faced by community-oriented development in a Master's thesis (M.I.T.) by Betnun (1971). Another Master's thesis (M.I.T.) by Judelson (1971) focused specifically on the ways to take advantage of tax shelter in the development of a rehabilitation project under tenant control.

been a comfortable one, especially so in the case of tenant families at the lower-income levels and with consequent limits on their housing options. The usual tenant-landlord conflicts have been compounded in 236 projects located in areas in which the rent ceilings allowed are marginal. When operating costs (chiefly utilities, repairs, and, sometimes, real estate taxes) rise, the owner is faced with either a cutback in services or applying to FHA for a rent increase. Neither option will be viewed favorably by the tenants. Although some owners choose to forego the dividend as an additional source of operating funds, this only provides a small margin. Eventually repairs may be deferred, and in some cases, owners defer principal payments on the mortgage for lack of funds.

We note at this point that the tax benefits in a 236 project continue to accrue to the owner, regardless of the condition of the buildings or of the adequacy of the services being provided, as long as he remains the owner and does not suffer a foreclosure on the mortgage. The owner will, of course, wish to avoid foreclosure both to protect his stream of tax savings in the early years and to avoid the large gains taxes that would result from a foreclosure. (See Chapter VI at pp. 226-227.) While there is no tax incentive for superior housing services, there is some incentive to maintain a minimum level of quality in most buildings to avoid the possibility of foreclosure and to preserve the possibility of appreciation in value over the years which eventually could be realized in a voluntary sale.

In practice, the FHA has become reluctant to foreclose on these mortgages, whether the mortgage payments have been deferred to cover operating

expenses or whether they have been deferred to cover excessive vacancies, because it has no desire to become a real estate operator and because assignments to new owners often can be accomplished only with a lower mortgage amount than the one foreclosed. We thus see a mixed set of incentives from tax treatment during the operating period.

From the tenants' side, it is often felt that rental property could be operated more to their satisfaction if they were in more direct control, either through direct ownership or through ownership by a community-based entity acting on their behalf. Local control of a project might also reduce operating problems by coupling ownership and tenancy more closely. Local control might also enable design orientation to user needs in contrast with the present, developer-oriented system in which user needs are secondary because the tenants are "captured" by the project subsidy.

Two possibilities are examined below: (1) development directly by a community-based group or tenant cooperative, and (2) development by a private developer with a "rollover" sale to the community group or tenant cooperative after a short period.

B. SYNDICATION BY SUBSIDIARIES OF COMMUNITY-BASED SPONSORS

While nonprofit sponsors of low- and moderate-income housing are eligible for 100 percent mortgages, the costs covered do not make adequate allowance for the resources and energies required of the sponsor to get the project together, despite the allowance for paying a housing consultant and the "allowance to make project operational," supposedly intended to cover any necessary costs not covered in the basic build-up

of costs.[1]

Sponsoring groups are thus experimenting with arrangements in which a for-profit subsidiary is set up purely for the purpose of syndicating the project and obtaining investment money from high income-tax bracket individuals who can use the tax shelter. The M.I.T. thesis by Judelson (1971) treats this tactic in some detail. Unfortunately, the investment objective of the limited partners is likely to encourage long holding periods, while the community development group seeks early control of the buildings as well as the operating policies. Adding a party to the general partner entity who is responsive to the investors' interests--for example, the builder--may be required of the sponsor by the investors as a balance to the interests of the sponsoring community group. The device of the tax incentive for producing a development fee is leading to complex ownership arrangements with conflicting internal objectives, heavily influenced and shaped by Internal Revenue Service rulings or attitudes on investment for tax shelter.

C. ROLLOVER

1. The Rollover Concept

We have seen in the examples of Chapters V and VI that the tax treatment of real estate encourages an extended period of ownership, largely

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[1] HUD contracts with groups providing "front money" loans to non-profit sponsors under Section 106(b) of the HUD Act of 1968 have not proved adequate to filling these gaps, partly because of the low level of funding. Fiscal year 1971 funds of approximately $5.4 million assisted a total of 135 projects. (Budget of the U. S. Government, FY 1972, Appendix, pp. 497-498) Section 106(a) for providing outright grant assistance to these groups has not been funded thus far.

to defer the gains taxes which would become payable upon sale. In an effort to remedy this negative incentive for those cases in which the owner of a Section 236 or 221(d)(3) project might otherwise be interested in selling to a tenant group, a new section (Section 1039) was added to the Internal Revenue Code as a result of the Tax Reform Act of 1969. The official explanation of the reasons for introducing the "rollover" provisions is:

> In the case of federally assisted housing projects (where the return to the investor is limited to approximately 6 percent), the Government is interested in encouraging the sale of these Government-assisted housing projects to the low- or middle-income occupant or to a non-profit organization which manages the property on their behalf (such as cooperatives). The maximum sales price permitted under these programs under present law is the amount the individual has invested in the property, an amount necessary to retire the outstanding mortgage liability, and the taxes payable as a result of the sale. By providing that no gain is to be recognized in these cases, it would be possible to decrease the sales price to the occupants or tax-exempt organizations managing these properties. This should enable them to make purchases they otherwise could not make. (U. S. Congress, 1970, p. 248)

Section 1039 provides that if (1) such a sale is approved by the Secretary of Housing and Urban Development AND (2) the owner reinvests (within a period of a year before or after the sale) in another 236 project, THEN the only gain subject to tax is the net amount not reinvested.[1] These taxes at sale would otherwise be quite large, especially in the

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[1] This portion of Section 1039 was apparently inspired by the provision in the tax law which allows an individual selling his personal residence to avoid gains taxes at sale to the extent that the proceeds are reinvested in a second residence. (U. S. Congress, 1970, p. 248) Amendments to Section 1250(d) of the Internal Revenue Code were made by the Tax Reform Act of 1969 to the effect that reinvestment less than the net amount realized is subject to normal capital gains tax and also to allow a carry over of the holding period for purposes of calculating recapture when the second project is sold. (See the discussion on recapture in Chapter III at pp. 101-102.

case of rehabilitation, so that this possibility of deferring taxes at sale would appear to be a great incentive to accomplish such a qualifying "rollover." Further, in the case of an eligible rehabilitation project virtually all of the depreciation benefits have been exhausted at the end of the 5-year write-off period.

However, the inducement of reduced taxes in the transfer is substantially compromised by the requirement that the tax basis (depreciable value) of the new property be reduced by the amount of gain not recognized on the preceding property.[1] The value of the second property as a generator of tax shelter is therefore substantially diminished. In a typical case, the depreciation will generate little additional tax shelter; tax benefits accrue only from the tax loss which can be taken from the expensible costs incurred in the development of the second project (primarily construction loan interest and real estate taxes). The investment value of the second project is thus greatly reduced if it is used as a "rollover" project. Moreover, gains taxes are not forgiven in a "rollover." They are deferred. The owner of the initial project obviously has another way of deferring the payment of taxes at sale--holding the property longer and not selling for a few more years.

2. Rollover Incentives

The fundamental problem with the "rollover" section is that it fails to recognize that the developer will expect some new reward for the new effort required to develop the second project. The developer of a project

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[1]The reduction in basis required by Section 1039 is borrowed from previous provisions in the Internal Revenue Code dealing with involuntary conversions of property and with "like-kind" exchanges. In those cases the basis must also be reduced by the gain not recognized. (U. S. Congress, 1970, p. 248)

always has the choice of offering a newly developed project as an investment to new investors. The prospective "rollover" project doesn't offer the investors in an original project as much investment value (because of the reduced tax basis) as it offers to investors who are not using the second project as a "rollover" candidate.

An appreciation of this problem requires an analysis of the positions of the major parties involved. The major parties would seem to be the tenants, the Federal government, investors in the original project, and the developer.

From the tenants' point of view the relevant questions would seem to be: Do we want ownership and control? What price will we have to pay? Could we hope to get the project by simply assuming the existing mortgage? If not, how much cash might we have to produce? How might we raise it? By refinancing under 236? If so, for what terms--comparable with the original mortgage or for higher rates and for a shorter period?

From the Federal government position, rollover is an option to current owners of eligible projects only if 236 (or any successor) mortgage insurance is still being granted and 236 interest subsidy money is being provided. HUD also has the responsibility of determining whether a particular sale should be made, presumably on the basis of an assessment of the viability of the tenant group as an operating and managing agent of the project and a judgment that they are not paying an unfair price for the project. This latter is probably largely controlled by HUD/FHA policy on refinancing. The current administrative ruling that the sale price (new mortgage) cannot exceed the sum of the outstanding mortgage plus original implied equity plus taxes due at sale would seem to assure

a reasonable rollover price, since there would be no taxes on sale if the net amount realized by the owners is re-invested. It would also seem to assure that few outright, non-rollover sales are likely to take place in the early years, at least in the rehabilitation case, because of the very large amount which would be added if the owner insisted upon recovering enough to cover taxes due at sale.

Understanding the viewpoints of the investor and developer requires a more detailed description of their options. This seems best done with some specific examples. We begin with an example involving a rehabilitation project which the investor wants to roll over to another rehabilitation project. After looking at this case in some detail a number of other possibilities are summarized.

a. Rehabilitation Example

Consider an example for rehabilitation with approximately the same project costs as in the earlier investment analysis. Then make the following assumptions:

1. The investor considers rolling over to a second rehabilitation project at the end of the sixth year of the first project.
2. The full amount of the investor's capital contributions is included in the cost basis of the project, in both cases.
3. The sale prices of both projects recover the implied equity of 10 percent as well as covering the outstanding balance on the mortgage loan.

The investor in Project I (as the original project will be called) already has an investment which continues to produce a small return even past project year 6. Furthermore, he can defer taxes not only by electing a

rollover to a new project but also by simply holding project I longer, that is, just not selling at all. If the investor is conservative, however, by the sixth year he will consider that he already has had to reserve most of the return from that year to begin accumulating funds for payment of gains taxes and will have to earmark all the remaining returns for the fund in order to have the funds necessary to cover the gains tax in the anticipated sale of Project I in the year 21. Even though the gains tax would continue to be a concern in the event of a rollover election, construction expenses to be taken again as a tax loss on Project II and a more favorable amortization schedule on the new mortgage of Project II would be of interest to the investor.

Table VIII-1 summarizes a calculation relevant to the investor's decision whether to "roll over" from one rehabilitation project to another. It shows that by holding Project II for a number of years, he can again defer the payment of gains taxes and exchange the small return of Project I for the immediate tax shelter from construction expenses in Project II. The rollover option looks attractive: prior returns from Project I which had been considered obligated to the tax sinking fund for Project I provide more funds than necessary for the gains tax on Project II. Together with the tax free cash from the sale of Project I, Project II appears to offer the investor a bonus.

But the rollover option is not an option, even if all the above parties would like it unless someone is willing to develop Project II. Assuming the availability of 236 interest subsidy funds and favorable mortgage possibilities (either through state housing banks or through 236 insurance) and that a developer wished to start another rehabilitation project with

TABLE VIII-1: ILLUSTRATIVE ROLLOVER CALCULATION WITH STEP-UP IN BASIS

Rehabilitation project sold at end of sixth year, proceeds reinvested in another rehabilitation project.

Sale prices in both cases assumed to be mortgage balance plus implied equity (10% of FHA total replacement cost).

Basis in both cases includes developer's fee from capital contributions of limited partners.

(1) Sale price of Project I	$17,724.39	
(2) Cost of Project II	19,695.74	[Mortgage loan plus capital contributions]
(3) Cash realized from Sale of I	1,810.00	[No tax since (2) exceeds (1)]
(4) Basis of Proj. I at Sale	1,738.88	
(5) Gain not recognized, (1)-(4)	15,985.51	
(6) Adjusted basis of II, (2)-(5)	3,710.23	
(7) Expensible construction costs	1,500.00	
(8) Land	500.00	
(9) Net depreciable basis of II, (6)-(7)-(8)	1,710.23	
(10) Present Value of net returns of Proj. II, discounted at 25%, after establishing gains tax sinking fund	518.00	
(11) Tax sinking fund released from I	1,164.03	
(12) Total cash from I, (3)+(11)	2,974.03	
(13) Investment required for II	3,412.48	
(14) Net investment for rollover	438.45	[Compare with value of Proj. II, item (10)]

exactly the same costs as the original project, would he be interested in offering it as a rollover candidate? As shown in line 13 of Table VIII-1, the developer can obtain from syndicating Project II (on exactly the same basis as Project I) a gross fee having a present value equivalent to 18 percent of the mortgage amount.[1] (This example assumes a sale price in both projects nigh enough to recover the implied 10 percent equity; the present value of the investments reflect this added value.) The rollover option must offer him more than what he can obtain by considering Project II as completely unrelated to Project I and selling interests in Project II to a new set of investors. The choice facing the developer is: Shall I start this new project afresh and reap the net profits of syndication by selling interests in the project to new limited partners? Or shall I offer the investors in my original project the opportunity to roll over their investment to a second project? The developer in this example will only do the latter if it is more lucrative to him or, if the original project is a disaster, the developer feels obligated to rescue his investors from that project. Except for this "bail-out" possibility, the developer would be expected to demand as much investment for the second project as he could get by selling it to a new set of investors.

Now we are forced to examine what the investor and the tenants of Project I have to offer. The investor (conservative that he is) con-

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[1] To avoid making an already complex illustration completely incomprehensible, I have used only the cash values at the time of rollover for these comparisons. This means, for example, that I have assumed that the developer is to be paid the capital contribution for the second project in one lump sum, or, alternatively, that the comparisons discount any future payments to their present value.

siders Project I a dead project for investment purposes which he continues to hold only to defer taxes and from which the remaining returns are already committed to the tax sinking fund. One possibility, therefore, is that he will elect the rollover and exchange whatever additional return there is from Project II for some additional capital contributions. The reduced basis of Project II diminish the tax shelter value of the project. But the tax sinking fund from Project I can be released if the gains tax problem can be shifted to Project II. Table VIII-1 shows that these two sources of funds--the released funds from the tax sinking fund of Project I and the additional investment value of Project II--are not sufficient to satisfy the competitive capital contributions which the developer can demand from new investors.

Finally, we see that the investor must rely upon some cash proceeds from the sale of Project I to the tenants in order to have enough funds to accomplish the rollover. Our example assumes that the sale price is the maximum which could in principle be refinanced by a new 236 mortgage, i.e., one including a recovery of the original implied equity of 10 percent. The other alternative would be for the tenants to assume the mortgage and produce the additional cash themselves.

Table VIII-1 summarizes the situation: the cash required by the developer must come from a combination of new investment, a left-over tax sinking fund, and cash proceeds of sale. Even then the cooperation of HUD is required to approve the rollover, and, if necessary, refinance the mortgage to generate the additional cash required. The tenants are left either with the necessity of making an equity investment or, possibly of increasing their monthly housing expense to cover the increased

mortgage.[1]

We see from this example that a high degree of cooperation is required on the part of at least four distinct parties with very different interests: the tenants, the investor in Project I, the developer of Project II, and HUD/FHA. As if this were not speculative enough, we shall see below that in many conceivable cases, even this degree of cooperation would not suffice to make rollover feasible.

b. Other Rollover Examples

The combinations of cases which could be tried in exploring the possibilities for rollover of 236 projects seem almost endless, once you begin looking for them.[2] Some of the interesting possibilities which occur are:

1. Choosing either new or rehabilitation projects for either the original project or the rollover candidate. (Four possibilities.)

2. Considering the sale price of the projects to be either the outstanding mortgage loan balance or that plus an amount to "recover" the original implied equity of 10 percent.

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[1]Whether there is an actual increase would depend upon the degree to which the project had been generating a clear cash dividend under the for-profit owner. If so, the dividend could be applied to increased mortgage payments. In fact, the Section 236 legislation and administrative regulations imply that any refinancing should be supportable on just such a basis. (FHA Regulations, Section 236.40(c)) If HUD/FHA were cooperating with the owner wishing to roll over Project I, however, the cash dividend might be considered as available for debt service even though it actually was required for operating expenses.

[2]The thesis by Betnun (1971, pp. 49-54) turns up several cases other than the ones discussed here, including variations in tax bracket and in prices of the second project. But Betnun arrives at the same general conclusions about rollover as this work, viz. that rollover is beneficial to investors only in projects which look like they will fail or in projects where refinancing is allowed.

3. Considering whether or not the developer's fee is added to the cost basis of the projects.

4. Considering a cost basis of the second project sufficiently high that the full construction expenses can be taken as a loss on the second project without creating a negative basis.

Computations for these combinations have been made and the results compiled in Table VIII-2. In every case it is assumed that the investor in the original project (Project I) must try to match the developer's required capital contribution for the rollover project (Project II) from a combination of: (1) after-tax proceeds of sale of Project I, (2) surplus from the tax sinking fund of Project I, (3) the investment value of Project II to the investor after its depreciable basis has been reduced as a result of the rollover. The results in Table VIII-2 indicate that in the most cases the investor in Project I would be unable to justify a rollover to Project II on an investment basis. In every case for which rollover appears to be a live option from an investment point of view, a necessary condition is that the sale price recover the original implied equity of 10 percent of the FHA total replacement cost. With this net cash from the sale of Project I the investor is barely able to match the developer's requirement for capital contributions in Project II in the following cases:

1. New rolling over to either new or rehabilitation, with or without stepped up basis (by adding the developer's fee to the cost basis).

2. Rehabilitation rolling over to new with or without stepped-up basis.

TABLE VIII-2: ROLLOVER OPTIONS

PROJECT I	PROJECT II	SALE PRICES	COST OF I	COST OF II	INVESTMENT VALUE OF II AFTER ROLLOVER	AFTER-TAX CASH FROM SALE OF I	SINKING FUND FROM I	TOTAL FUNDS AVAIL.	TOTAL FUNDS REQ'D.
REHAB	REHAB	MORTG. BAL.	MORTG. + CASH	SAME AS I	(6.82%)[1]	0	6.16%	(0.66%)	16.18%
	NEW				(6.96)	0	6.16	(0.82)	11.28
	REHAB	MORTG. BAL. + IMPLIED EQUITY			(2.45)	8.21	6.16	11.92	18.06
	NEW				(2.45)	8.21	6.16	11.92	12.81
	REHAB			COST OF I PLUS 7% TO MEET REINV. AND ALLOW CONSTR. EXP.	(2.73)	10.55	5.85	13.68	18.06
	NEW				(2.73)	10.55	5.85	<u>13.68</u>[2]	12.99
	REHAB	MORTG. BAL.	MORTG. + CAP. CONTRIB.	SAME AS I	(5.73)	0	7.15	1.42	19.76
	NEW				(3.50)	0	7.15	3.68	12.68
	REHAB	MORTG. BAL. + IMPLIED EQUITY			3.18	11.11	7.15	<u>21.41</u>	20.95
	NEW				0.31	11.11	7.15	<u>18.71</u>	13.95

[1] Values are given as a percentage of the mortgage amount.

[2] Underlined cases are the only live options.

TABLE VIII-2 (CONTINUED): ROLLOVER OPTIONS

PROJECT I	PROJECT II	SALE PRICES	COST OF I	COST OF II	INVESTMENT VALUE OF II AFTER ROLLOVER	AFTER-TAX CASH FROM SALE OF I	SINKING FUND FROM I	TOTAL FUNDS AVAIL.	TOTAL FUNDS REQ'D.
NEW	NEW	MORTG. BAL.	MORTG. + CASH	SAME AS I	6.24[1]	0	0	6.24	11.28
	REHAB				9.35	0	0	9.35	16.18
	NEW	MORTG. BAL. + IMPLIED EQUITY			8.99	8.29	0	17.27[2]	12.81
	REHAB				12.28	8.29	0	20.56	18.06
	NEW	MORTG. BAL.	MORTG. + CAP. CONTRIB.		10.80	0	0	10.80	12.68
	REHAB				18.06	0	0	18.06	19.76
	NEW	MORTG. BAL. + IMPLIED EQUITY			8.39	11.11	0	19.50	13.36
	REHAB				18.19	11.11	0	29.28	20.95

[1] Values are given as a percentage of the mortgage amount.

[2] Underlined cases are the only live options.

3. Rehabilitation rolling over to rehabilitation only in the case of stepped-up basis for both projects.

4. Rehabilitation rolling over to new with increased cost in the new project.

While this set of computations is not exhaustive of the possibilities, I believe it serves to illustrate the complexity and the limitations of rollover. It clearly does not provide the broad incentive for transfer of ownership to tenants that was apparently intended. It should be reiterated that these conclusions assume that the rollover process must make investment sense both to the developer and to the investors.[1] Of course, if the original project is in serious difficulty and the investors are likely to be faced with a failing project, a foreclosure, and immediate liability to capital gains taxes, then the investors may be willing to provide some additional capital for a "bail-out" project and/or the developer may be willing to take less than the full market value of the capital contributions on the second project as a favor or business obligation to the investors.

The upshot then is that the rollover would appear to be a live option in only two basic situations:

(1) the tenants in the project are willing and able to pay a price (for the project in which they live) well above the amount of the outstanding mortgage balance, so that net proceeds from sale to tenants

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[1]The rollover election is complicated in the case of a project owned by a partnership, because the proposed Treasury regulation would require that the partnership must make the election, not just the individual investor. (IRS Regulation 1.1039-1, proposed 11/24/71)

of the first project can be added to the amounts the investors in the first project will be willing to offer to the developer for the "rollover" into a second project,

OR

(2) the developer of a second project is willing to sacrifice maximum profits (which could be obtained by selling interests in the second project to new investors) in order that he might offer the second project as a "rollover" candidate for the investors in his first project gone "sour."

These options hardly seem to be in the best interests of the tenants as apparently intended by the inclusion of Section 1039 in the tax law. The tenants have the choice of paying a premium price for gaining control of their own housing or of being convinced to buy a project considered undesirable and in trouble both by the original investors in the project and by the original developer willing to assume the financial sacrifice of rescuing them.

D. ALTERNATIVES TO THE ROLLOVER CONCEPT

The set of computations on rollover options summarized in the preceding section is not exhaustive of the possibilities, but I believe they serve to illustrate the complexity and the limitations of the rollover incentive as it now stands. It clearly does not provide the broad incentive for transfer of ownership to tenants that was apparently intended by the legislation. In fact, it could be conjectured that one outcome of the Section 1039 rollover incentive will be that of encouraging investors to unload a failing project on the tenants--an incentive exactly counter to

the one intended. Tied as it is to the already complex tangle of tax law and regulation, an attempt to modify further the tax system to create more lucrative rollover incentives seems certain of frustration. For example, if the gains taxes were simply forgiven outright upon a sale of a Section 236 project to the tenants, a substantial windfall would accrue to the taxpayer. His initial investment cannot be predicated upon such tax forgiveness, thus does not take into account the possibility of forgiveness of gains taxes when computing capital contributions he would be willing to make in exchange for the investment value of the project. We would simply have another case in which an arbitrary tax expenditure is made without suiting the amount to the purpose.

The revisions in tax treatment of Section 236 projects suggested in Chapter VII (at pp. 281-296) have already anticipated direct payment as an alternative to the Section 1039 rollover incentive to transfer project ownership to tenants. For example, if direct payments were made, the normal development process could be followed by an incubation period during which a tenant cooperative was formed and cash payments made to the owner upon transfer of the project to the tenant cooperative.

The next chapter includes a further discussion of the tenant's perspective (at pp. 331-333) in the context of an overall review of this work.

CHAPTER IX: SUMMARY AND CONCLUSIONS

The complex nature of public objectives in housing has been observed to underlie a policy mix in housing rather than a single strategy or limited range of housing programs. The project subsidy approach, whereby rental subsidies attach to particular buildings in which eligible persons can enjoy the benefits of the subsidy, is therefore judged to be likely to continue as an element of public policy in housing, even though objectives more oriented to the welfare of those considered deserving of subsidy might call for more direct subsidies to the people involved.

In a review of U. S. tax policy on depreciation and income taxation, we have seen that the consistent pattern has been to allow depreciation allowances in excess of the decline in true economic value of real property. Coupled with a progressive rate structure in the personal income tax, this tax treatment of depreciation leads to a situation in which income, either from the property in question or from other sources, can be sheltered from income tax because of the paper losses created. While real estate in general and housing in particular had been almost accidental beneficiaries of depreciation allowances, the Tax Reform Act of 1969 explicitly ranked the treatment of housing as a preferred area, thus admitting the tax incentive in housing as a matter of public policy. While preserving the earlier tax treatment of newly constructed rental housing, the Tax Reform Act of 1969 created a new incentive for rehabilitated housing in the form of a special 5-year write-off period.

While the returns in the form of tax savings offered by depreciation allowances could be attractive to investors in many real estate situations,

the area of subsidized rental housing currently exemplified by the Section 236 program is a special case because of the involvement of government in providing not only tax benefits, but also in providing insured loans covering essentially all of the costs of a typical project and in providing an interest subsidy which lowers the rents to eligible tenants so as to provide a practically certain market for the developed units. This work has undertaken, then, to pattern an analysis of the operation of tax incentives in the Section 236 program as closely as possible after the actual practices of the development community.

A computer program has been used as an aid in describing the financial nature of typical projects, their investment character and the government costs involved. While the "base case" approach has often been used in real estate analysis, I have attempted here to generalize the results by examining the sensitivity of the base case to variations in the relative costs of project components. The general observations on the investment attractiveness of typical Section 236 projects are found to be relatively insensitive to project cost variations over normal ranges. Having established base cases of typical 236 projects for new construction and rehabilitation, the computer analysis has been used to examine the positions (1) of the developer of these projects, (2) of the investors (as limited partners) in these projects, (3) of the eventual tenants in these projects, and (4) of the Federal government.

In the case of the developer, the complexity of the tax system and its interpretation, not to mention the bureaucratic requirements of mortgage and interest subsidy applications, seems to have limited the use of the 236 program to those who understand how to put all these elements together, in many cases including the use of expensive services for packaging

and marketing the tax shelter investment to limited partners. To those developers who do understand how to use the tax benefits, the typical pattern is for the developer to extract large capital contributions from the limited partner/investors at the outset of the project in exchange for their claim to future tax savings. Since little cash is required in addition to the mortgage loan amount for the actual costs of construction and other direct project costs, the developer typically extracts what amounts to a rather handsome fee at the outset of the project in the form of the excess capital contributions. The incentive to develop these projects has thus been so great that there has been a backlog of project applications.

The magnitude of this fee depends upon the assessment of the limited partners (or of their investment counsel) of the degree of risk involved in these projects. In my investigations, the assessment of risk at the time of observation (1969 to 1971) was such that the investors typically looked for a 15 percent after-tax rate of return on new construction and 25 percent on rehabilitation. Conceivably, as word of dramatic project failures gets out, investors will become more cautious and demand higher after-tax rates of return in view of their perception of increased risk. The consequence would be to reduce the amount of money the developer could raise from the investors and thus to reduce the amount of his "fee." In fact, this factor is probably already at work in terms of the locations which developers choose, since more investment capital can be raised for projects located in safer, more stable areas. To some extent this may encourage developers eventually to fight the struggles necessary for locations outside the central cities in areas where these projects are

often opposed. It is likely at least to encourage developers to stay away from central city areas in which the housing stock is in disrepair and regarded as declining, whether or not development in these areas is considered desirable as a matter of public policy.

This work has shown, however, that the amount of capital contributions which can be raised, primarily as a result of the tax treatment, is not very sensitive to the after-tax rate of return demanded by investors. For example, even if investors in new construction were to demand a 25 percent after-tax rate of return, the developer could collect the equivalent of almost 12 percent of the mortgage loan amount. In the rehabilitation case investors would obtain a 30 percent return after making capital contributions the equivalent of 22 percent of the mortgage loan amount. As another way of looking at the influence of risk on investment, the base case calculations show that even if projects were marketed assuming a 10-year holding period rather than the more typical 20-year period, investors would be willing to contribute capital equivalent to 10 percent of the mortgage loan amount for new construction and 15 percent for rehabilitation and still receive a 15 percent after-tax return on new construction and a 25 percent after-tax return on rehabilitation. In either case these amounts would seem to provide sufficient development incentive. My assessment of this situation, therefore, is that the tax incentive is not likely to "dry up" as a consequence of perceptions of increased risk in these projects on the part of investors.

On the other hand the tax incentive is exposed for its arbitrariness, in that the amount which the developer can raise is primarily a function of the tax laws and not of the amount which he could demand for his services in a competitive situation. The investors have been seen primarily as an

indirect conduit for Federal tax dollars, in that they provide immediate capital to the developer in exchange for claims to the tax savings generated in the future by a project. This process is inefficient from the government perspective for at least three reasons. First, the investors discount the tax savings more heavily than would government and as a consequence attribute a smaller present value to them than does the government. Second, the complexity of the tax mechanism results in significant fractions of the capital contributed by the investors being used to pay the professionals necessary for interpreting the rules for investors (and developers) and for locating the potential investors, all of whom must be in high income tax brackets to make effective use of the tax shelter. Finally, the investors in tax brackets higher than that of the marginal investors reap windfall returns, since they pay the same capital contributions to the developer at the outset but enjoy larger tax savings over the life of the project, hence generate larger revenue losses for the government but without increasing development incentive.

The perspective of the tenants in 236 projects is a bit difficult to assess in an analysis heavily oriented to matters of economics and finance. The primary tenant benefit, rent reduction, is achieved (quite independently of the tax incentive mechanism) in the form of interest subsidy on the project mortgage loan repayment. Incentives for the project owners to provide satisfactory housing services over the period of ownership appear to be very weak. The primary investment incentive is the tax savings, and they flow without regard to the quality of housing services delivered as long as the buildings continue to operate well enough to sustain the repayment of the mortgage loan. The investors are interested in avoiding an early sale, especially in the case of rehabilitation,

because of the large capital gains taxes which would have to be paid and which could severely reduce the net after-tax return of the project. This is a weak incentive to do anything more than keep the project from being foreclosed. Moreover, the party actually responsible for the operation of the project on behalf of the inactive, limited partner/ investors is the developer, who is usually the general partner but who has little or none of his funds invested in the project. Except for the developer's desire to maintain credibility and a favorable reputation in the investment community and with HUD/FHA for future Section 236 projects, he has little incentive even to keep the project operating, much less to provide superior housing services, since the economic benefits have been extracted at the outset of the project.

Such a system obviously has little dweller orientation. The tenant is locked into a particular building as the only way in which the rent subsidy can be obtained. Furthermore, conditions in a project can deteriorate markedly before the quality of housing services in the subsidized project is reduced to that of competitive non-subsidized housing in the private market. The project owners thus would seem to have little incentive to no more than keep the project from deteriorating to the point that vacancies become a serious problem.

Some community-based housing sponsors are attempting to make the best of this complex world by taking on at least some of the roles of the developer in order to capture some of the tax benefits. While such an approach does have the potential for tapping additional resources for sustaining high quality housing services in a project and for other tenant-oriented services, the cost is high in terms of the effort required and of the obscurity of this process to all but the sponsor's professional

advisors.

A review of the incentives created in the so-called "rollover" option for owners of Section 236 projects simply reveals the futility of continuing to try to achieve highly focused public objectives in housing by tinkering with an already complex and indirect tax system. It would appear that the conditions under which Section 236 project owners would be interested in selling a project to a tenant group would be (1) if the tenant group could pay a price well in excess of the outstanding mortgage balance, and probably well in excess of any amount which could be refinanced, or (2) if the developer is willing to obtain less than his maximum profit from a second project by offering it as a bail-out investment for his partners in a first project which has become impossible to operate for some reason. No dweller orientation there, despite the apparent intentions of the Congress. It is hard within the same tax system to encourage at the same time long holding periods by imposing recapture taxes on recovered depreciation at sale and to encourage early transfer of a project to a tenant group by further manipulation of the tax treatment.

From the perspective of the Federal government, the current tax treatment creates large revenue losses in the operating years of a 236 project, especially a rehabilitation project. In conjunction with the reduced tax rate on the capital gain when the project is sold, the net effect is to create large net government revenue losses from these projects. These losses are the government cost for the development incentive which is created. In the event of real losses on a project, the government is a helpless partner. Additional tax revenues are collected from high sale prices but diminish if the value of the project has diminished markedly by

the time of sale. Furthermore, although one of the advantages of tax incentives is supposed to be low administrative costs, we have seen that a substantial cost is paid in the form of the capital captured by the tax shelter broker in a typical syndication.

The substantial costs in lost revenues lead to a consideration of outright replacement of the investors by government. The primary actor is the developer; the investors are essentially in a passive role other than screening the developer for credibility. The economic waste involved in the tax incentive approach is revealed in the comparison of the present government costs and the costs which would be insured if direct government payments were made to the developer in place of the capital contributions of the investors. Depending on the rate of discount used, the present value of government costs would be reduced by 25 to 50 percent on new construction projects and by approximately 50 percent on rehabilitation projects. But these figures assume that the present payments by the investors must be exactly matched. The tax benefits are not closely tuned, however, to provide just the incentive required. In fact, the standing backlog of applications for these projects suggests that the development incentive is more than ample. Direct payments would enable the amounts offered to developers to be just sufficient to induce the volume of production which has been set as a matter of public policy. This volume is now set in effect by the amount of funds appropriated for interest subsidy. Direct payments would thus not only reduce government costs just by being direct, but would also make it possible to reduce costs even further by avoiding unnecessarily large development incentives. The net savings in total public expenditures on these projects could, of course, be used to take into ac-

count the multitude of policy objectives besides simply production of units and could provide additional funds for management, maintenance, social services, and deeper rent subsidies.

While the direct payment approach may seem extreme, it is clear that an even more direct role has in the past been taken by the Federal government in housing development, as outlined in Chapter II. A direct payment scheme would also bear some resemblance to the present public housing "Turnkey" approach for the development of public housing units. While continued public ownership of a Section 236 project might not be desirable, the government could control ownership through the direct payment approach, and it would be possible for government to assign ownership to a local agency, to a private owner, or to a tenant association at costs lower than those of the current system. Such an approach would obviate the need for a rollover incentive for transferring ownership to tenants; in fact the amount of funds required to induce development might well be reduced on any project in which the developer had only a short-term responsibility.

Direct payment would thus have the following advantages over the current system:

1. Reduced government costs.
2. Matching of payments to developers to provide just the incentive needed to produce the planned number of housing units.
3. Focusing of all of the primary economic incentives for development and operation of housing in the Department of Housing and Urban Development, rather than leaving a major component to be administered by the Internal Revenue Service.
4. Creating more options for the form of ownership.

Attempts to achieve some of these objectives through further adjustments in the tax have been explored in this work. The changes in investment incentive which can be achieved tend to occur in jumps, however, and not in a way which could be at all finely tuned. The tax system is just too cumbersome and indirect an instrument for focused incentives.

It would be possible, however, to reduce the tax benefits and combine these reductions with direct payments to assure the inducement of the desired development response. From the analyses presented here it is clear that this approach would still incur some unnecessary revenue losses compared with outright replacement of the investment incentive through direct payments. Reduced tax benefits combined with some direct payments would capture some of the benefits of direct payment, increasingly so as the tax benefits are reduced and replaced by direct payments.

All of the above observations on government costs have been found to hold over a wide range of plausible rates of discount for computing the present value of losses and gains for government. Payments in lieu of tax benefits which are financed through the mortgage loan have been considered for all of the options discussed; financing of direct payments through the mortgage loan would reduce the present value of government costs when the government discount rate is higher than the mortgage loan interest rate, and conversely.

The area of government costs from revenue losses in the subsidized rental housing program has been of particular interest because of the direct involvement of government in the program at present, except for the development incentive. Similar work on other types of real estate development would very likely reach similar conclusions about government

costs and the cost efficiency of direct payments. What is more likely is that an honest appraisal of the effective government costs in favorable depreciation allowances in non-subsidized housing and in non-residential real estate would generate pressures to reduce these apparently arbitrary benefits. In the case of non-subsidized housing, for example, this would mean that the investment value of housing would have to be supported by the rental payments of the tenants rather than by means of a general subsidy through the tax system. The revenues regained as a result could then be applied to more direct rental subsidies (as, for example, in a national housing allowance) for the benefit of those who need the subsidy and not for the entire population of rental housing tenants. One way of beginning to move toward a direct payment system in programs such as the Section 236 rental housing program would be to legislate a general tightening of the depreciation rules on all real estate while offering developers of 236 housing to elect a direct payment scheme in lieu of the tax benefits along the lines of one of the many options which have been considered in this work. Any direct payment scheme would begin to align the administration of housing policy and the administration of the economic incentives for the development and operation of privately owned subsidized housing.

APPENDIX: COMPUTER PROGRAM FOR ANALYSIS OF INVESTMENT AND GOVERNMENT COSTS

The computer program, TAXCST, used as an analytical tool in this work is outlined in this appendix. TAXCST is written in FORTRAN IV and was used on the Cambridge Monitor System, an MIT time-sharing system operating with an IBM System 360, Model 67 computer. A complete listing of the program is included at the end of this appendix.

TAXCST is basically an accounting computation which operates upon input quantities to provide the desired output quantities in accordance with certain tax and investment analysis rules. The program accepts input quantities for those variables which were of interest in computing investment value and government costs in typical rental projects, both new construction and rehabilitation, under the Section 236 interest subsidy and mortgage insurance program. Certain variables are assigned values internally by the program which might be rearranged as input quantities if different questions were being examined with the program. No attempt is made to optimize, although some values must be found by iteration. TAXCST was originally intended to be a general program for real estate investment analysis including conventionally financed and non-profit development as well as limited dividend sponsorship. Although this flexibility could, in principle, be restored by reading in the value of the parameter ICSUB, only the limited dividend case (ICSUB=1) has been thoroughly debugged.

The main program of TAXCST calls a number of subroutines, depending upon the type of computation required by control parameters accepted as

input values. The primary functions of TAXCST and its subroutines are as follows:

TAXCST -- writes at terminal the labels for values needed and reads in the values provided; controls subroutines called; writes summary values at completion of execution.

CSTEQ -- computes build-up of project costs from land, structure, direct construction; computes FHA total replacement costs, mortgage loan amount and cash equity required; computes expensible carrying costs of development period.

OPCST -- computes annual mortgage payment, operating costs, and rents.

TAXES -- computes annual depreciation, income tax, and mortgage amortization; for rehabilitation computes separate depreciation for old structure, rehabilitation expenditures and excess rehabilitation expenditures (see rules in Chapter III).

SALE -- computes sale prices, taxes at sale (internal subroutine, RECAP, computes recapture rules), net gain from sale (see rules in Chapter III).

IRATE -- computes annual after-tax return, tax sinking fund and accumulated interest at time of sale, present value of after-tax returns, internal rate of return on equity; step-up in basis resulting from excess capital contributions of limited partners; computes phased payments of capital contributions (see descriptions in Chapter V).

COSTG -- computes present value of Federal revenue losses and gains, local real estate tax abatement, interest subsidy, annual dividend, Federal revenue losses and gains from accelerated depreciation, and Federal costs for matching investor payments (see description in Chapter VII).

The basic flow of the computations is diagrammed in Figure A-1. The parameter TST1 is a switch used for computing the step-up in basis in a tax shelter syndication, which is called for by setting ISYND=2. The value of TST1 is changed in the course of the computations in accordance with the following scheme: when TST1 is positive, no step-up is computed because the computation has not reached the last sale year;

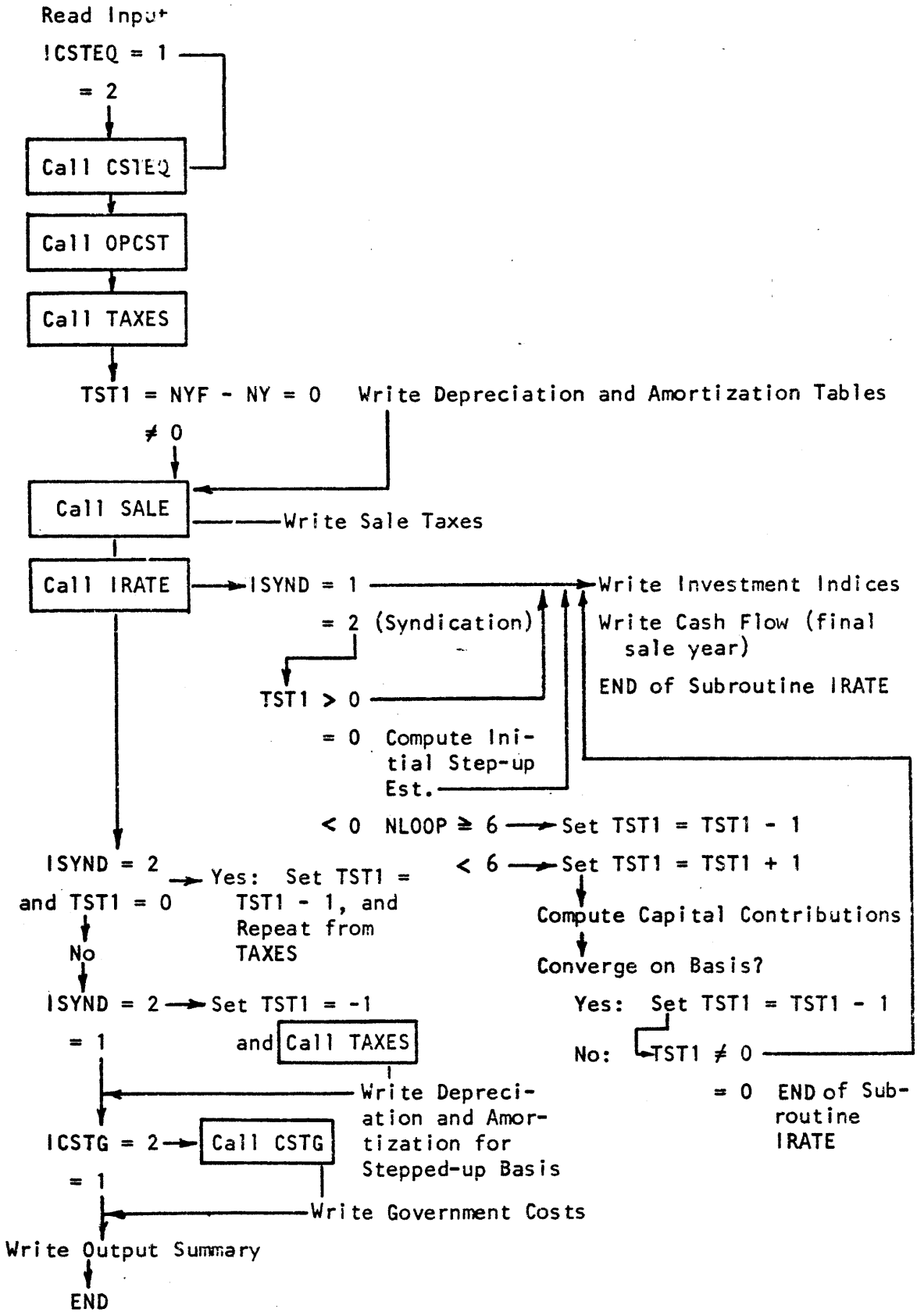

FIGURE A-1: SEQUENCE OF OPERATIONS FOR PROGRAM TAXCST

when TST1 is zero, the computation continues to recycle with updated values of depreciable basis; when TST1 is negative, recycling is terminated and the program completed, either because the step-up has converged (change in depreciable basis is less than 0.1 percent) or because the calculation has recycled six times (NLOOP greater than 6).

Several tables are included to summarize key program variables and program operation. Table A-1 indicates the parameters which can be provided as input. Tables A-2 through A-8 summarize the variable names used by program and the values set internally in the program. Table A-9 is a sample input sheet from the time-sharing computer terminal. Table A-10 is a sample output generated by the sample case called for in Table A-9. A complete listing of the program is included at the end of the appendix. Since the program is replete with comments on the operations being performed, no effort has been made to include a complete list of variables. Variable names are generally obvious from the context and accompanying comments. Generally variables beginning with "R" are rates, those with "I" are integer indicators or switches, and those with "N" are integers to denote the number of an item.

The program TAXCST should (with luck) work in a batch processing environment with the following changes: (1) supply the proper unit number as "IN" or in the "READ" statements, (2) provide the necessary input data (see Table A-1) in the format called for in the listing on punched cards (at the end of a compiled object deck), (3) specify IOUT as the unit number for the system printer, and (4) specify IGO as 1. The program occupies 42,390 bytes of storage and requires approximately 2 seconds of Central Processor Unit time on the IBM System 360 Model 67 for cases such as the one shown in Tables A-9 and A-10.

TABLE A-1: INPUT PARAMETERS

RELEQ Real equity, or cash costs. May be entered directly or computed internally (see subroutine CSTEQ in program listing).

LND Cost of land

BCSTR Cost of original structure before rehabilitation

TDEV Development period in years

DYRS Depreciation period, or economic life, in years -- used for all elements

RRATE Developer's or investors' discount rate, or after-tax rate of return demanded on equity invested

RYTAX Marginal bracket rate for Federal income tax

RKTAX Capital gains tax rate

RYTXM Rate of minimum tax on preference income

RBFE Builder's profit rate as a percentage of direct construction costs, entered as zero if builder and developer have identity of interest

RIMRT Interest rate for mortgage loan (market rate, including mortgage insurance premium)

RFUND Interest rate (after-tax) for tax sinking fund

RPROF Annual cash profit, or dividend, specified as a fraction of EQUTY, the difference between total replacement costs as allowed by FHA and the mortgage loan amount

ICSTQ Integer which either (1) selects CSTEQ subroutine or (2) allows key development parameters to be input directly

1:	Input	BCSTC	Construction costs
		RIFIN	Rate of interest for interim, or construction, financing
		ACAPI	Amount of total capital contributions
2:	Input	MRT	Mortgage amount
		BCCST	Carrying costs to be expenses during development
		BRPLC	Total replacement costs
		BSRA	Amount of Builder's and Sponsor's Profit and Risk Allowance
		ACAPI	Amount of total capital contributions

(Continued)

TABLE A-1 (Cont.): INPUT PARAMETERS

ICSTG Integer to (1) skip subroutine COSTG or (2) call COSTG

2: Input ACAPM Annual payment to match by government, if known
CSTGM Government revenue costs to match, if known
RDG Rate of discount for government

INUR Integer for choice of depreciation method

1: Double declining balance (new construction)
2: 125 percent declining balance (used housing)
3: Rehabilitation (program assigns 125 percent DB to shell, 5-year amortization to rehabilitation expenditures, and DDB to excess rehabilitation expenditures)
4: Straight-line depreciation
5: No depreciation allowance whatever
6: Sum-of-the-year's-digits depreciation (alternate for new)

NU Number of units in project

ISYND Integer for step-up in basis for last sale year

1: Not stepped up; cash costs only are included
2: Stepped up and recycled; total capital contributions included in basis

NCAP Number of annual capital contributions

NRCPR Month in which relief from recapture begins

NPSAL Number of option chosen for sale price computation

1: Mortgage balance at time of sale
2: Value of capitalized rent stream
3: Price decreasing to zero in straight-line over economic life
4: Price decreasing to zero in parabola--no change at start, twice the straight-line rate at the end of economic life
5: Original total replacement cost
6: Price appreciating from original total replacement cost at 2-1/2 percent per year
7: Price appreciating at 5 percent per year
8: Price specified in input as PSALE
9: Mortgage balance plus implied equity, EQUTY
10: Mortgage balance plus taxes due at sale

NYI, NYF Initial and final years of sale. Consequences of sale computed for each year in this range

IOUT Integer to specify type of unit to be used for printing output

(Continued)

TABLE A-1 (Cont.): INPUT PARAMETERS

IGO Integer to (01) execute, (02) repeat all input, or (03) exit

(The following variables are not accepted as input but could be for greater program flexibility:)

ICC Integer for treatment of carrying costs

1: Capitalize carrying costs into depreciable value of building
2: Take carrying costs as an expense during development (current value in program)

ICSUB Indicator for type of ownership

1: Limited dividend (current value in program)
2: Conventional
3: Nonprofit

IFUND Tax sinking fund selector

1: No tax sinking fund
2: Fund established out of returns to pay taxes on sale (current value in program)

TABLE A-2: SUBROUTINE CSTEQ, DEVELOPMENT COSTS

INTERNALLY SPECIFIED PARAMETERS (IN ORDER OF APPEARANCE)

RMTIN	Mortgage insurance premium on mortgage (0.005)
RFHEX	FHA examination fee with loan application (0.003)
RFHIN	FHA inspection fee, on mortgage (0.005)
RAMP	FHA fee for accelerated multi-family processing (0.0)
RFNMA	Fee for Federal National Mortgage Association purchase of mortgage loan (0.015)
RTAR	Title and recording fees, on mortgage (0.005)
RLAO	Legal and organizational fees, on mortgage (0.0065)
RCMT	Commitment fee for conventional mortgage loan (0.0)
RIFNO	Fraction of interim (or construction) loan assumed outstanding over the development period (0.5)
RINSL	Rate of liability insurance, during construction on fraction RIFNO of mortgage amount (0.01)
RINSF	Rate of fire insurance during construction (0.01)
BCSTD	Demolition costs (0.0)
RLND	Fraction of land cost separately financed (0.0)
RILND	Interest rate on loan for land (0.10)
RBSRA	Rate for Builder's and Sponsor's Profit and Risk Allowance, on FHA allowable costs except for land and building shell in total replacement cost (0.10)
RARCHS	Rate of architect's supervision fee, on direct construction costs (0.02)
RIWC	Interest rate for working capital loan during development period (0.10)
RWC	Working capital required as a percentage of mortgage amount (0.02)
RFIN	Financing fee (0.02)
RBOND	Rate on construction bond premium, on direct construction costs (0.0124)

(Continued)

TABLE A-2 (Cont.): SUBROUTINE CSTEQ, DEVELOPMENT COSTS

SUBROUTINE VARIABLES

A	Excess interest (over FHA market rate) during construction
BCCST	Carrying costs during construction to be claimed as an expense for tax purposes
BCSTS	Cost of land and shell
BRPLC	Total replacement cost as defined by FHA
BTCST	Total construction costs, including fees
EQUTY	Apparent equity (replacement cost less mortgage)
EXCES	Financing costs not covered by FHA-insured mortgage loan
MRT	Mortgage loan amount
RELEQ	Cash required over mortgage loan amount
RETXD	Real estate taxes during development, on land and shell
RIFHA	FHA market interest rate
RIFN	Limiting construction interest rate for FHA calculation, the lower of the interim financing rate, RIFIN, or the FHA rate, RIFHA
RBO	Builder's overhead rate, on direct construction costs
RMRT	Fraction of total replacement cost financed by mortgage (set at 0.9 for limited dividend cases)
RRETD	Rate of real estate taxes during development on land and shell (currently set at 0.1 in the program)

TABLE A-3: SUBROUTINE OPCST, OPERATING COSTS

INTERNALLY SPECIFIED VARIABLES (ORDER OF APPEARANCE)

RCMG	Rate of management fee on annual rent (0.05)
RCRM	Repairs and maintenance as a fraction of rent (0.08)
RCRR	Replacement reserve as a fraction of rent (0.005)
RCMI	Miscellaneous annual operating costs, per room, such as insurance and utilities ($50)
RRET	Real estate tax rate as a fraction of annual gross basic rent (0.15)
RVAC	Vacancy rate (0.05)
NRMS	Number of rooms (4.5)
RISUB	Interest rate of subsidized mortgage loan (0.01)
NMTGP	Number of mortgage payments per year (1)

SUBROUTINE VARIABLES

CNPYS	Mortgage constant at subsidized interest rate, RISUB, assuming NMTGP payments per year for TMTG years
CRNTM	Monthly rent at market interest rate, "market" rent
CRNTB	Monthly rent at subsidized interest rate, "basic" rent

TABLE A-4: SUBROUTINE TAXES

PROGRAM VARIABLES

ADEPR(N)	Amount of depreciation taken in year N
ADMTGF	Final mortgage balance at the end of year NY, a year of sale
ADMTG(N)	Mortgage balance at beginning of year N
AINT(N)	Amount of interest at market rate paid in year N
AMORT(N)	Mortgage amortization (principal repayment) in year N
ATAX(N)	Amount of income tax paid in year N
BASISF	Final basis at sale (not including land)
BASISI	Initial depreciable basis (not including land)
NLOOP	Number of iterations for matching investor's constributions with depreciable basis
SXDPR	Sum of excess depreciation (over straight-line)
XDEPR	Excess depreciation
XTAX(N)	Income subject to tax in year N
ZDEPR	Straight-line depreciation (for any year)

TABLE A-5: SUBROUTINE SALE

SPECIFIED VARIABLE

CAPRT	Capitalization rate (0.10)

PROGRAM VARIABLES

CASH	Before tax cash proceeds of sale
CPTR	Gain taxed as ordinary income, recaptured
CTPX	Recapture tax
GAIN	Gain subject to tax at capital gain rates
GAINR	Gain subject to recapture
GANTX	Capital gain tax
GSALE	After-tax gain from sale
PRFTX	Tax on preference income (the excluded portion of capital gain)
TSALE	Total taxes at sale
YSALE	Taxable income from sale

TABLE A-6: SUBROUTINE RECAP (PROGRAM VARIABLES)

ITD	Number of months held
RCPTR	Fraction of excess depreciation which is to be taxed at ordinary income rates (recaptured)

TABLE A-7: SUBROUTINE IRATE

PROGRAM VARIABLES

ACAPI Total capital contributions, input

ACAPN Amount of annual capital contribution

ACAPS Present value of capital contributions

ACAPT Total amount of capital contributions, computed

ARET(N) After-tax return in year N, after setting aside tax fund

ARETN(N) After-tax return in year N, without tax fund

BNPV Present value, no tax fund

BPV Present value with tax fund

BASISØ Original depreciable basis before adding excess capital contributions

BASIST Test basis after addition of excess capital contributions. As an initial estimate the program uses the expression for the sum of the infinite series formed when the additions to basis are computed iteratively with a fixed tax sinking fund; without the sinking fund the initial estimate would be exact for the rehabilitation case. In the rehabilitation case the ratio of capital contributions to basis is assumed constant and given by

ACAPT/BASISI = NCAP x FCAP x FRET x FTAX,

where FTAX operates on a change in basis to get the increment in annual return, FRET operates on annual return to get present value, FCAP operates on present value to get annual capital contribution, and NCAP is the multiple of annual contributions to arrive at ACAPT. For new construction, ACAPT/BASISI is just taken from the last calculation for present value before the step-up calculation,

or,

ACAPT/BASISI = NCAP x FCAP x BPV

FDVPV Net present value to developer, after cash expenses

FDVT Net total capital contributions to developer, after cash expenses

RTNAF Average rate of return, after eliminating tax sinking fund and loss in year of sale

RTNAV Average rate of return, no tax sinking fund

TABLE A-8: SUBROUTINE COSTG

INTERNALLY SPECIFIED VARIABLES

NSUB Number of years for phase-out of interest subsidy payments (10)

RRETF Full real estate tax rate without abatement, as a fraction of gross basic rent (0.25)

NTGP Number of mortgage payments per year (1)

PROGRAM VARIABLES[1]

AIS Annual interest subsidy

ACAPGS Present value to government of capital contributions paid to developer in lieu of contributions by private investors

AMFEE Amount to add to mortgage for replacement of capital contributions by private investors (not the sum of capital contributions but their present value at the time of issuance of the permanent mortgage, i.e., at the end of the development period)

CDPSAV Reduction in present value of government cost for direct payment of capital contributions

CDPPSV Reduction in present value of government cost for direct payment of capital contributions, government gets dividends

CMFSAV Reduction in present value of government cost for replacement through mortgage of private capital contributions

CMGPSV Reduction in present value of government cost for replacement through mortgage of private capital contributions, government gets dividends

CNFED Present value of annual payments to amortize AMFEE over holding period at mortgage interest rate

CSTG Present value of government costs, or revenue losses less taxes at sale

CSTGM Present value of government costs to match from a reference case

(Continued)

[1]Only illustrative variables are listed here. The suffix "D" generally indicates discounting to the end of the development period (start of project operation), while the suffix "F" indicates discounting to the start of development, all at the government rate of discount. Both values are computed in the program although only one is shown in this variable list.

TABLE A-8 (Cont.): SUBROUTINE COSTG

CSTGMG	Present value of government cost for replacement through mortgage of private capital contributions, government gets dividends
CSTGPD	Present value of government cost for replacement of private capital contributions except for value of tax-free dividends (saving is CPDSV)
CSTGPM	Present value of government cost for replacement through mortgage of private capital contributions except for value of tax-free dividends (saving is CPMSV)
CSTPXD	Present value of government cost for direct replacement of private capital contributions, except for value of after-tax dividends (saving in present value is CPXDSV)
CSTPXM	Present value of government cost for replacement through mortgage of private capital contributions, except for value of after-tax dividends (saving in present value is CPXMSV)
DCAPGS	Present value of increment added to private capital contributions to match a reference case for total capital contributions
DCNFDF	Present value of cost of annual payment to amortize matching increment in capital contributions to meet reference case
DCSTG	Difference in present value of government costs for reference case and case computed
DDPSAV	Reduction in present value of government cost for direct payment to match reference capital contributions
TCTLD	Present value of revenue loss from construction losses
TDTLD	Present value of revenue losses from depreciation
TEDLD	Present value of revenue losses from excess depreciation
TISD	Present value of annual interest subsidy over holding period
TOSD	Present value of actual tax on sale with current depreciation
TOSSLD	Present value of tax on sale with straight-line depreciation
TPISD	Present value of interest subsidy phased out over NSUB years
TPROFD	Present value of dividends over holding period (TPRFDF discounted to start of development)

(Continued)

TABLE A-8 (Cont.): SUBROUTINE COSTG

TPRFDF	Present value of revenue from dividends over holding period
TSLTLD	Present value of revenue loss for straight-line depreciation
TTAXD	Present value of actual revenue losses, current depreciation

TABLE A-9: SAMPLE INPUT FOR REHABILITATION CASE

```
$ taxcst
EXECUTION BEGINS...
INPUT FORMAT:  REAL N(F12.X); INTEGER AS SHOWN, XXX
INPUT DATA DIRECTLY UNDER LABELS:
REAL EQUITY,LAND COST  ,STRCTR COST,DEVEL  TIME,ECON.   LIFE
48966.63     50000.      110000.      1.          20.
DISCNT RATE,INC TX RATE,CAPGAINRATE,MIN TX RATE,BLDR PROF RATE
.25            .5           .25          .1          .0
MRTG INTRST,TX FND RATE,DIVID.  RATE
.075           .04          .06
ICSTQ=1 FOR COMPUTE, =2 FOR INPUT DEV. COSTS
2
MORTG   AMT,CARRYG CSTS,TOT REPLCST,      BSPRA,TOT CAP CONT
1632221.     150250.      1813580.    150325.    396555.94
COMPUTE CSTS TO GOVT:  1 FOR NO, 2 FOR YES
2
ANN PAYM TO MATCH BY GOVT, COMPARISON GOVT COST, GOVT DISC RATE
___ACAPM___,___CSTGM___,GVT DSC RATE
132185.31     436354.31  .06
NEW,USED,REHAB,SL DEPR,NO DEPR,SYD:  ENTER 1,2,3,4,5,6
3
NO OF UNITS:  XXX
100
SYND STEP-UP FOR LAST YR:  1 FOR NO, 2 FOR YES
1
NO OF CAP CONTRIB, UP TO 9
3
MONTH IN WHICH RELIEF FROM RECAPT STARTS:  XXX
100
SALE PRICE:  01 MTG BAL, 02 CAP VAL, 03 STR L DEP, 04 PARAB DEP,
05 TOT REPL CST, 06 2.5 P.C. APPREC, 07 5 P.C. APPREC, 08 INPUT
09 MTG BAL+10 P.C. REPL CST, 10 MTG BAL +TAXES DUE, 11 MTG+TAX+10
01
INITIAL YR OF SALE:  XX
20
FINAL YR OF SALE:  XX
20
IOUT:  06 AT TERM., 08 CREATES DISK FILE
08
IGO:  01 TO EXECUTE, 02 TO REPEAT INPUT, 03 TO EXIT
01
OUTPUT IN FILE FT08F001. OFFLINE PRINTCC FILE FT08F001
R; T=2.04/4.10 15.20.28
```

TABLE A-10: SAMPLE OUTPUT FOR REHABILITATION CASE

INVESTMENT ANALYSIS FOR SUBSIDIZED HOUSING
COPYRIGHT 1972, JAMES E. WALLACE
TIME ZERO IS START OF DEVELOPMENT
PROJECT TIME IS DEVELOPMENT TIME PLUS OPERATING TIME

MORTGAGE CONSTANT PAYMENT, MARKET RATE= 129598.81 AT SUBSIDIZED RATE= 49713.18

SALE YR= 21 BASISF= -0.41 ADMTGF= 1321174.00

DEPRECIATION ON EXCESS REHAB EXPENDITURES

2	21852.59	3	19667.34	4	17700.59	5	15930.53	6	14337.48
7	12903.73	8	11613.35	9	10452.02	10	9406.81	11	8466.13
12	7619.52	13	7619.51	14	7619.51	15	7619.51	16	7619.51
17	7619.52	18	7619.52	19	7619.52	20	7619.52	21	7619.52

DEPRECIATION ON REHAB EXPENDITURES

2	300000.00	3	300000.00	4	300000.00	5	300000.00	6	300000.00
7	0.0								

DEPRECIATION ON STRUCTURE SHELL

2	6875.00	3	6445.31	4	6042.48	5	5664.82	6	5310.77
7	5310.77	8	5310.76	9	5310.76	10	5310.76	11	5310.76
12	5310.76	13	5310.76	14	5310.76	15	5310.76	16	5310.76
17	5310.76	18	5310.76	19	5310.76	20	5310.76	21	5310.76

DEPRECIATION

2	328727.56	3	326112.63	4	323743.00	5	321595.31	6	319648.19
7	18214.49	8	16924.11	9	15762.77	10	14717.57	11	13776.88
12	12930.27	13	12930.27	14	12930.27	15	12930.27	16	12930.27
17	12930.28	18	12930.28	19	12930.28	20	12930.28	21	12930.28

BASIS

2	1828526.00	3	1499798.00	4	1173685.00	5	849942.00	6	528346.69
7	208698.50	8	190484.00	9	173559.88	10	157797.06	11	143079.44
12	129302.50	13	116372.19	14	103441.88	15	90511.56	16	77581.25
17	64650.98	18	51720.70	19	38790.42	20	25860.14	21	12929.87

AMORTIZATION

2	7182.31	3	7721.00	4	8300.06	5	8922.69	6	9591.88
7	10311.31	8	11084.69	9	11916.06	10	12809.81	11	13770.56
12	14803.44	13	15913.69	14	17107.25	15	18390.38	16	19769.69
17	21252.44	18	22846.44	19	24559.94	20	26401.94	21	28382.06

ADJUSTED MORTGAGE

2	1632221.00	3	1625038.00	4	1617317.00	5	1609016.00	6	1600093.00
7	1590501.00	8	1580189.00	9	1569104.00	10	1557187.00	11	1544377.00
12	1530606.00	13	1515802.00	14	1499888.00	15	1482780.00	16	1464389.00
17	1444619.00	18	1423366.00	19	1400519.00	20	1375959.00	21	1349557.00

GAINS TAX CALCULATION:
CASH FROM SALE= 0.0
SALE PRICE, 1321174.00, LESS BASIS, -0.41 LESS LAND, 50000.00 = TAXABLE GAIN, 1271174.00
GAIN SUBJ TO RECAPTURE, 1.41 TIMES RECAPTURE FRACTION, 0.0 = GAIN RECAPTURED, 0.0
TIMES INCOME TAX RATE, 0.50 = RECAPTURE TAX, 0.0
GAIN AS CAPITAL GAIN= 1271174.00 TIMES CAPITAL GAINS TAX RATE, 0.25= CAPITAL GAINS TAX, 317793.50
PREF TAX=MIN TAX*(0.5*CAP GAIN -REGULAR SALE TAXES)= 31779.34 TOTAL TAXES ON SALE= 349572.81
AFTER TAX GAIN FROM SALE= CASH LESS TAX= -349572.81

PAYBACK PERIOD 1 ITER NUM 10 RATE 1.9777 RESID XNPV 0.01 PV AT RRATE= 322471.81 PV/MRT= 0.1976
PV (NO FUND)= 365489.56 PV/MRT (NO FUND)= 0.2239
CONTRIB. TO RED RETN. TO RRATE; W/O TAX FUND= 159734.63 W/TAX FUND= 138025.50
STEPPED-UP BASIS= 1828526.00 PV OF DEVELOPER FEE= 273505.13 PV OF DEVELOPER FEE/MRT=0.1676

TAX FUND STARTED IN YR 5 RETURN NOT REQD FOR FUND IN FIRST YEAR OF TAX FUND= 126920.25
TAX FUND INTEREST RATE= 0.04 PV OF RETN NOT REQD 1ST YR= 41589.23

YR	ACCUM VAL,TAX FND							
5	22175.44	6	247857.50	7	15921.97	8	13806.30
9	11790.12	10	9844.21	11	8058.30	12	6410.83
13	5404.54	14	4411.36	15	3429.91	16	2458.93
17	1497.05	18	542.96	19	-404.58	20	-1346.86
21	-2285.12						

CASH FLOW: (PROFIT=RPROF*IMPLIED EQUITY)

YR	AMORTIZATION	DEPRECIATION	TAXABLE INC.	EXCESS DEPR.	INCOME TAX	AFTER TAX RETURN
1	0.0	0.0	0.0	0.0	-75125.00	75125.00
2	7182.31	328727.56	-310663.69	237301.25	-131601.69	142483.19
3	7721.00	326112.63	-307510.06	234686.31	-130286.38	141167.88
4	8300.06	323743.00	-304561.38	232316.69	-129049.00	139930.50
5	8922.69	321595.31	-301791.06	230169.00	-127878.56	138760.06
6	9591.88	319648.19	-299174.75	228411.13	-126746.25	137627.75
7	10311.31	18214.49	2978.36	1977.43	1686.92	9194.61
8	11084.69	16924.11	5042.11	687.05	2589.76	8291.77
9	11916.06	15762.77	7034.83	0.0	3517.41	7364.13
10	12809.81	14717.57	8973.78	0.0	4486.89	6394.65
11	13770.56	13776.88	10875.22	0.0	5437.61	5443.93
12	14803.44	12930.27	12754.70	0.0	6377.35	4504.19
13	15913.69	12930.27	13864.96	0.0	6932.48	3949.06
14	17107.25	12930.27	15058.52	0.0	7529.26	3352.28
15	18390.38	12930.27	16341.64	0.0	8170.82	2710.72
16	19769.69	12930.27	17720.95	0.0	8860.48	2021.06
17	21252.44	12930.28	19203.70	0.0	9601.85	1279.69
18	22846.44	12930.28	20797.70	0.0	10398.85	482.69
19	24559.94	12930.28	22511.20	0.0	11255.60	-374.06
20	26401.94	12930.28	24353.20	0.0	12176.60	-1295.06
21	28382.06	12930.28	26333.32	0.0	13166.66	-2285.12

RETURNS AND TAX FUND

YR	AFTER TAX RET	DISC PRES VAL	TAX SINKG FND	TAX FUND W/INTEREST
1	75125.00	60100.00		
2	142483.19	91189.19		
3	141167.88	72277.94		
4	139930.50	57315.53		
5	126920.25	41589.23		
			11839.81	22175.44
6			137627.75	247857.50
7			9194.61	15921.97
8			8291.77	13806.30
9			7364.13	11790.12
10			6394.65	9844.21
11			5443.93	8058.30
12			4504.19	6410.83
13			3949.06	5404.54
14			3352.28	4411.36
15			2710.72	3429.91
16			2021.06	2458.93
17			1279.69	1497.05
18			482.69	542.96
19			-374.06	-404.58
20			-1295.06	-1346.86
21			-2285.12	-2285.12

SYNDICATION PAYMENTS:

PAYM.	DISC, PRES. VAL.	PAYM.	DISC, PRES. VAL.	PAYM.	DISC, PRES. VAL.	PAYM.	DISC, PRES. VAL.
1	132160.50	2	105728.38	3	84582.69		

TOTAL PV OF CAP CONTRIB= 322471.56

3PAYMENTS OF 132160.50=TOT CAP CONTRIB= 396481.50 TOT CAP CONTR/MRT= 0.2429

TOTAL DEV FEE=TOT CAP CONTRIB-RELEQ= 347514.81 TOT DEV FEE/MRT=0.2129

NO OF STEP UP LOOPS CALCULATED= 1

COSTS TO GOVERNMENT--REVENUE LOSSES AND GAINS| DISCOUNT RATE=0.0600

YR	TAX LOSS	DISC VALUE
1	75125.00	70872.63

TOTAL DISCOUNTED VALUE= 70872.63

DEPRECIATION LOSSES

YR	ACT TAX LOSS	DISC VALUE	SL TAX LOSS	DISC VALUE	EXCESS LOSS	DISC VALUE	DISC ACT TAX
2	140633.63	132673.25	45713.13	43125.61	94920.50	89547.63	124152.56
3	139587.69	124232.75	45713.13	40684.59	93874.56	83548.13	115954.56
4	138639.81	116404.88	45713.13	38381.71	92926.69	78023.19	108352.25
5	137780.69	109135.63	45713.13	36209.21	92067.56	72926.38	101292.13
6	136982.94	102362.06	45713.13	34159.66	91269.81	68202.38	94712.56
7	8909.50	6280.88	45713.13	32226.14	-36803.63	-25945.26	-1189.22
8	8393.35	5582.09	45713.13	30402.02	-37319.78	-24819.93	-1722.35
9	7881.39	4944.91	45713.13	28681.20	-37831.74	-23736.28	-2206.89
10	7358.79	4355.69	45713.13	27057.76	-38354.34	-22702.07	-2655.81
11	6888.44	3846.51	45713.13	25526.21	-38824.68	-21679.71	-3036.36
12	6465.14	3405.79	45713.13	24081.35	-39247.99	-20675.56	-3359.54
13	6465.13	3213.01	45713.13	22718.29	-39247.99	-19505.28	-3445.27
14	6465.13	3031.14	45713.13	21432.36	-39247.99	-18401.21	-3530.05
15	6465.13	2859.57	45713.13	20219.24	-39247.99	-17359.67	-3614.01
16	6465.14	2697.71	45713.13	19074.76	-39247.99	-16377.04	-3697.22
17	6465.14	2545.02	45713.13	17995.08	-39247.99	-15450.07	-3779.79
18	6465.14	2400.96	45713.13	16976.50	-39247.99	-14575.54	-3861.82
19	6465.14	2265.06	45713.13	16015.59	-39247.99	-13750.53	-3943.40
20	6465.14	2136.85	45713.13	15109.05	-39247.99	-12972.20	-4024.60
21	6465.14	2015.90	45713.13	14253.85	-39247.99	-12237.95	-4105.50

TOTAL DISCOUNTED VALUE OF LOSSES AT START OF OPERATION:
ACTUAL LOSS= 636389.31STR LINE LOSS= 524329.69EXCESS LOSS= 112058.88
LOSSES DISCOUNTED TO START OF DEVELOPMENT:
ACTUAL LOSS= 600367.56STR LINE LOSS= 494650.88EXCESS LOSS= 105715.94
TAXES RECOVERED AT SALE:

TAX:	CAPITAL GAINS	RECAPTURE TAX	PREFERENCE TAX	TOTAL TAX	SL CAP GAIN TAX
AMOUNT	317793.50	0.0	31779.34	349572.81	317793.50
DISC VAL	99091.44	0.0	9909.14	109000.56	99091.44
DISC VAL AT START	93482.50	0.0	9348.25	102830.75	93482.50

NET REVENUE COST TO FEDERAL GOVERNMENT
TAX LOSS LESS TAXES AT SALE, DISCOUNTED TO START OF DEVELOPMENT
ACTUAL TOTAL = 436241.88 RATIO TO MTG=0.2673
PRESENT COST FOR DIRECT PAYMENT= 374462.81 RATIO TO MTG=0.2294
NET SAVING FROM DIRECT PAYMENT= 61779.06 RATIO TO ORIG CST=0.1416

MORTGAGE INCREASE TO PAY DEVFEE= 396930.38 ANN SUBS TO COVER= 38935.86 DISC COST= 446587.13
PRESENT COST FOR MTG FEE SUBS= 421308.81 RATIO TO MTG= 0.2581
NET SAVING FROM PAYM VIA MORTG = 14933.06 RATIO TO ORIG COST= 0.0342

SUBSIDY AVAIL FROM PROF= 10881.54
DISCOUNTED TOTAL SUBSID= 124809.19
DISCOUNTED VAL AT START= 117744.56 DISC VAL OF TAX= 58872.28
VALUE OF PROF TO INVSTR= 43024.33
DISCOUNTED VAL AT START= 34419.46
DISCTD VALUE AFTER TAX = 17209.73
CAPITAL CONTR FOR PROF = 7053.16
CHANGE IN GOVT COST TO EXCH PROF FOR CAP CONTRIB DIRECTLY= 19984.38
THRU MTG= 22484.46

```
COSTS TO GOVT CONSIDERING DIVIDEND:
GOVT KEEPS DIV, FULL REPL, DIR PAYM    256718.25
                RED FROM ORIG COST     179523.63
                RATIO TO ORIG COST          0.4115
                        THRU MORTG     303564.25
                RED FROM ORIG COST     132677.63
                RATIO TO ORIG COST          0.3041

DIV AFT TAX TO OWNER, BAL DIR PAYM     295606.06
                RED FROM ORIG COST     140635.81
                RATIO TO ORIG COST          0.3224
                        THRU MORTG     339952.00
                RED FROM ORIG COST      96289.88
                RATIO TO ORIG COST          0.2207

TAX-FREE DIV TO OWNR, BAL DIR PAYM     334494.00
                RED FROM ORIG COST     101747.88
                RATIO TO ORIG COST          0.2332
                        THRU MORTG     376339.88
                RED FROM ORIG COST      59902.00
                RATIO TO ORIG COST          0.1373

GOVT COST IN COMPARISON CASE=   436354.25     COST DIFF=      112.38     RATIO TO COMP COSTS=0.0003
GOVT PAYM TO MAKE UP DIFF BETWEEN COMPARISON CASE AND PRESENT:
ANN PAYM MATCHED=     132185.25ANN INCREM PAID=         24.75
PRESENT COST FOR DIRECT PAYMENT=       70.13      RATIO TO MTG=0.0000
NET SAVING FROM DIRECT PAYMENT =       42.25      RATIO TO COMP COST=0.0001
MORTGAGE INCREASE TO PAY FEEINC=       74.33 ANN SUBS TO COVER=        7.29      DISC COST=       83.63
PRESENT COST FOR MTG FEE INCR=         78.90      RATIO TO MTG=0.0000
NET SAVING FOR INCR VIA MTG=          33.48      RATIO TO COMP COST=0.0001


FEDERAL INTEREST SUBSIDY
ANNUAL INTEREST SUBSIDY=    79885.63
DISCOUNTED TOTAL SUBSID=   916273.63
DISCOUNTED VAL AT START=   864409.50
INTEREST SUBSIDY PHASED OUT OVER 10 YEARS:
ANNUAL INTEREST SUBSIDY
YR ANNUAL SUBSID    DISC VALUE
 2      79885.63      75363.81
 3      71897.06      63988.23
 4      63908.50      53658.93
 5      55919.94      44294.00
 6      47931.38      35817.27
 7      39942.81      28158.28
 8      31954.25      21251.53
 9      23965.69      15036.48
10      15977.13       9456.91
11       7988.56       4460.81
TOTAL DISC VALUE=    351485.94
DISC VAL AT START=   331590.63

REAL ESTATE TAX ABATEMENT
FULL RATE=0.2500,ACTUAL RATE=0.1500
ANNUAL ABATEMENT=     13620.27
DISCOUNTED VALUE=    156221.94  DISC VAL AT START=   147379.25
```

MODEL TYPE LIMITED DIVIDENDS
REHABILITATED HOUSING

SPECIFIED VARIABLES

SHELL COST	DEV. PER.	PROF. RATE	MORTGAGE INT.	PERIOD
110000.00	1.00	0.060	0.075	40.00

PROJECT INDICATORS

LAND	REAL EQUITY	MORTGAGE	PROFIT	MARKET RENT	BASIC RENT	SALE PRICE	YR
50000.00	48966.63	1632221.00	10881.54	180.07	113.50	1321174.00	21

TOTAL REPL COST= 1813580.00 EXCESS FINANCG AND LAND HOLDGFEES= 0.0
COST OF WKG CAP= 0.0 BSRA= 150325.00 BLDRS PROF= 0.0 CARRYING COSTS= 150250.00
NO. OF ROOMS= 4.50 VACANCY RATE= 0.05 NO OF UNITS= 100

BEFORE TAX RETURN 0.2222

AFTER TAXES	PRESENT VALUE	RATES OF RETURN AVERAGE	WITH FUND	DISCN	DEVELOPER DISCOUNT RATE
	322471.81	0.0096	0.0275	6.5855	0.2500

INTERNAL RATE OF RETURN 1.9777 FOR RESIDUAL PV OF 0.01

INCOME TAX RATE= 0.50 CAPITAL GAINS TAX RATE= 0.25
MINIMUM TAX ON INCOME FROM EXCESS DEPREC.= 0.10
ECONOMIC LIFE FOR TAX PURPOSES (YRS)= 20.

ANNUAL RETURN AND RATE, BY YEAR

YR	RETURN	RATE	YR	RETURN	RATE	YR	RETURN	RATE	YR	RETURN	RATE
1	75125.00	1.534	2	142483.19	2.910	3	141167.88	2.883	4	139030.50	2.858
5	138760.06	2.834	6	137627.75	2.811	7	9194.61	0.188	8	8291.77	0.169
9	7364.13	0.150	10	6394.65	0.131	11	5443.93	0.111	12	4504.19	0.092
13	3949.06	0.081	14	3352.28	0.068	15	2710.72	0.055	16	2021.06	0.041
17	1279.69	0.026	18	482.69	0.010	19	-374.06	-0.008	20	-1295.06	-0.026
21	-2285.12	-0.047									

YR	DISC. PRESENT VALUE	YR	DISC. PRESENT VALUE	YR	DISC. PRESENT VALUE	YR	DISC. PRESENT VALUE
1	60100.00	2	91189.19	3	72277.94	4	57315.53
5	45468.89	6	36078.29	7	1928.25	8	1391.13
9	988.40	10	686.62	11	467.63	12	309.53
13	217.10	14	147.43	15	95.37	16	56.89
17	28.82	18	8.70	19	-5.39	20	-14.93
21	-21.08						

LISTING OF PROGRAM TAXCST

```
CC  COPYRIGHT 1972, JAMES E. WALLACE                                    JIM00010
       COMMON BCSTC,TDEV,RIFIN,RRETD,RMRT,RPROF,RRET,RIMTG,TMTG,RBFE,   JIM00020
     1NY,RELEQ,MRT,PRFIT,TACST,CTRM,PSALE,BTRN,ABTRN,ARETN(60),RRTN(60),JIM00030
     2RTNAV,RTNAF,BNPV,AVDRN,ICSTG,ACAPM,CSTGM,ACAPI,ICSUB              JIM00040
     3,RRIT,FXNPV,CNPAY,BRPLC,BCSTS,EQUTY,BDCST,LND,BCSTR,INUR,NRCPR    JIM00050
     4,RRATE,NYF,ARET(60),BSRA,EXCES,NPSAL,WC,BWC,BCCST,NU,BPV,TRET(60) JIM00060
     5,BFE,ICC,NDV,NYA,IFUND,CNPYS,CTRMS,CRNTM,CRNTB,ICUT,DYRS,RFUND    JIM00070
     6,RYTAX,RKTAX,RYTXM,SIZE,VAC,ISYND,DPV(60),DPVF(60),SRETN,SRET,NCAPJIM00080
      DATA BCSTD/0.0/                                                   JIM00090
                                                                        JIM00100
      REAL MRT,LND                                                      JIM00110
      DIMENSION ATAX(60),ADEPR(60),AMORT(60),XTAX(60),XDEPR(60)         JIM00120
C  SET UP FOR INPUT ON TIME-SHARING CONSOLE                             JIM00130
      IN=5                                                              JIM00140
      ITYPI=5                                                           JIM00150
      ITYPO=6                                                           JIM00160
100   WRITE(6,101)                                                      JIM00170
101   FORMAT(' ','INPUT FORMAT:  REAL N(F12.X); INTEGER AS SHOWN, XXX'/ JIM00180
     1' ','INPUT DATA DIRECTLY UNDER LABELS:'/                          JIM00190
     2' ','REAL EQUITY,LAND COST  ,STRCTR COST,DEVEL  TIME,ECON.   LIFE'JIM00200
     3)                                                                 JIM00210
      READ(IN,102)RELEQ,LND,BCSTR,TDEV,DYRS                             JIM00220
102   FORMAT(5(F12.2))                                                  JIM00230
      WRITE(6,103)                                                      JIM00240
103   FORMAT(' ','DISCNT RATE,INC TX RATE,CAPGAINRATE,MIN TX RATE,'     JIM00250
     1'BLDR PROF RATE')                                                 JIM00260
      READ(IN,102)RRATE,RYTAX,RKTAX,RYTXM,RBFE                          JIM00270
      WRITE(6,104)                                                      JIM00280
104   FORMAT(' ','MRTG INTRST,TX FND RATE,DIVID.  RATE')                JIM00290
      READ(IN,105)RIMTG,RFUND,RPROF                                     JIM00300
105   FORMAT(3(F12.4))                                                  JIM00310
      WRITE(6,106)                                                      JIM00320
106   FORMAT(' ','ICSTQ=1 FOR COMPUTE, =2 FOR INPUT DEV. COSTS')        JIM00330
      READ(IN,6)ICSTQ                                                   JIM00340
      GO TO (107,110),ICSTQ                                             JIM00350
107   WRITE(6,108)                                                      JIM00360
108   FORMAT(' ','CONSTR COST,CONSTR RATE,TOT CAP CONT(0. FOR RELEQ IN BJIM00370
     1ASIS)')                                                           JIM00380
      READ(IN,109)BCSTC,RIFIN,ACAPI                                     JIM00390
109   FORMAT(F12.2,F12.4,F12.2)                                         JIM00400
      GO TO 129                                                         JIM00410
110   WRITE(6,111)                                                      JIM00420
111   FORMAT(' ','MORTG   AMT,CARRYG CSTS,TOT REPLCST,      BSPRA,TOT CAJIM00430
     1P CONT(0. FOR RELEQ IN BASIS)')                                   JIM00440
      READ(IN,102)MRT,BCCST,BRPLC,BSRA,ACAPI                            JIM00450
129   WRITE(6,130)                                                      JIM00460
130   FORMAT(' ','COMPUTE CSTS TO GOVT:  1 FOR NO, 2 FOR YES')          JIM00470
      READ(IN,6)ICSTG                                                   JIM00480
      IF(ICSTG.NE.2)GO TO 113                                           JIM00490
      WRITE(6,135)                                                      JIM00500
135   FORMAT(' ','ANN PAYM TO MATCH BY GOVT, COMPARISON GOVT COST, GOVT JIM00510
     1DISC RATE'/' ','___ACAPM___,___CSTGM___,GVT DSC RATE')            JIM00520
      READ(IN,112)ACAPM,CSTGM,RDG                                       JIM00530
112   FORMAT(2F12.2,F12.4)                                              JIM00540
113   WRITE(6,114)                                                      JIM00550
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FILE: TAXCST   FORTRAN  P1                MASSACHUSETTS INSTITUTE OF TECHNOLOGY

114    FORMAT(' ','NEW,USED,REHAB,SL DEPR,NO DEPR,SYD:  ENTER 1,2,3,4,5,6JIM00560
      1')                                                                JIM00570
       READ(IN,6)INUR                                                    JIM00580
       WRITE(6,121)                                                      JIM00590
121    FORMAT(' ','NO OF UNITS:  XXX')                                   JIM00600
       READ(IN,7)NU                                                      JIM00610
       WRITE(6,115)                                                      JIM00620
115    FORMAT(' ','SYND STEP-UP FOR LAST YR:  1 FOR NO, 2 FOR YES')      JIM00630
       READ(IN,6)ISYND                                                   JIM00640
       WRITE(6,125)                                                      JIM00650
125    FORMAT(' ','NO OF CAP CONTRIB, UP TO 9')                          JIM00660
       READ(IN,6)NCAP                                                    JIM00670
       WRITE(6,116)                                                      JIM00680
116    FORMAT(' ','MONTH IN WHICH RELIEF FROM RECAPT STARTS:  XXX')      JIM00690
       READ(IN,7)NRCPR                                                   JIM00700
       WRITE(6,117)                                                      JIM00710
117    FORMAT(' ','SALE PRICE:  01 MTG BAL, 02 CAP VAL, 03 STR L DEP, 04 JIM00720
      1PARAB DEP,'/                                                      JIM00730
      2' ','05 TOT REPL CST, 06 2.5 P.C. APPREC, 07 5 P.C. APPREC, 08 INPJIM00740
      3UT'/                                                              JIM00750
      4' ','09 MTG BAL+10 P.C. REPL CST, 10 MTG BAL +TAXES DUE'          JIM00760
      5', 11 MTG+TAX+10')                                                JIM00770
       READ(IN,8)NPSAL                                                   JIM00780
       IF(NPSAL.NE.8)GO TO 118                                           JIM00790
       READ(IN,105)PSALE                                                 JIM00800
118    WRITE(6,119)                                                      JIM00810
119    FORMAT(' ','INITIAL YR OF SALE:  XX')                             JIM00820
       READ(IN,8)NYI                                                     JIM00830
       WRITE(6,120)                                                      JIM00840
120    FORMAT(' ','FINAL YR OF SALE:  XX')                               JIM00850
       READ(IN,8)NYF                                                     JIM00860
       WRITE(6,122)                                                      JIM00870
122    FORMAT(' ','IOUT:  06 AT TERM., 08 CREATES DISK FILE')            JIM00880
       READ(IN,8)IOUT                                                    JIM00890
       WRITE(6,123)                                                      JIM00900
123    FORMAT(' ','IGO:  01 TO EXECUTE, 02 TO REPEAT INPUT, 03 TO EXIT') JIM00910
       READ(IN,8)IGO                                                     JIM00920
       ITYPO=IOUT                                                        JIM00930
C  IOUT=06 PRINTS OUTPUT ON TERMINAL, =08 CREATES DISK FILE FTO8F001.    JIM00940
       GO TO (9,100,9999),IGO                                            JIM00950
6      FORMAT(I1)                                                        JIM00960
7      FORMAT(I3)                                                        JIM00970
8      FORMAT(I2)                                                        JIM00980
9      NYA=NYI                                                           JIM00990
       NYI=NYI+TDEV                                                      JIM01000
       NYF=NYF+TDEV                                                      JIM01010
       NDV=TDEV+1                                                        JIM01020
C  TO REGAIN PROGRAM FLEXIBILITY, MOVE ICSUB, IFUND, ICC                 JIM01030
C  INTEGER INDICES UP AS READ STATEMENTS.                                JIM01040
       ICSUB=1                                                           JIM01050
       IFUND=2                                                           JIM01060
       ICC=2                                                             JIM01070
       NLOOP=1                                                           JIM01080
       WRITE(IOUT,150)                                                   JIM01090
150    FORMAT(/'1','INVESTMENT ANALYSIS FOR SUBSIDIZED HOUSING'/' COPYRIGJIM01100
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     1HT 1972, JAMES E. WALLACE'/' TIME ZERO IS START OF DEVELOPMENT'/' JIM01110
     2PROJECT TIME IS DEVELOPMENT TIME PLUS OPERATING TIME')           JIM01120
      GO TO (500,600,600),ICSTQ                                        JIM01130
500   CALL CSTEQ                                                       JIM01140
600   EQUTY=BRPLC-MRT                                                  JIM01150
      BFE=RBFE*(BCSTD+BCSTC)                                           JIM01160
      CALL OPCST                                                       JIM01170
10     DO 71 NY=NYI,NYF                                                JIM01180
C                                                                      JIM01190
C     TST1 IS A SWITCH FOR THE SYNDICATION STEP UP IN BASIS.           JIM01200
C  WHEN POSITIVE, NO STEP UP BECAUSE NOT IN LAST YEAR.                 JIM01210
C  WHEN ZERO CONTINUE TO ITERATE FOR LAST YEAR STEP UP.                JIM01220
C  WHEN NEGATIVE EXIT BECAUSE EITHER STEP UP HAS CONVERGED OR NLOOP>6  JIM01230
      TST1=NYF-NY                                                      JIM01240
      GO TO 450                                                        JIM01250
400   TST1=TST1-1.                                                     JIM01260
      GO TO(70,450),ISYND                                              JIM01270
C  THIS ASSURES THAT YOU ONLY LOOP BACK WITH STEPPED UP BASIS AT NY=NYF JIM01280
450   CONTINUE                                                         JIM01290
      CALL TAXES(ADMTGF,BASISI,BASISF,AMORT,ATAX,SXDPR,ADEPR,          JIM01300
     1TST1,XTAX,XDEPR,NLOOP)                                           JIM01310
      CALL SALE(BASISF,ADMTGF,SXDPR,GSALE,TSALE,GANTX,CPTX,PRFTX)      JIM01320
      GO TO (65,65,70),ICSUB                                           JIM01330
65    CALL IRATE(BASISI,GSALE,AMORT,ATAX,TST1,NLOOP,ADEPR,XTAX,XDEPR,  JIM01340
     1BASISO,ACAPN)                                                    JIM01350
      IF(ISYND.EQ.2.AND.TST1.EQ.0.0)GO TO 400                          JIM01360
70    NYA=NYA+1                                                        JIM01370
71     CONTINUE                                                        JIM01380
      IF(ISYND.EQ.1)GO TO 700                                          JIM01390
      TST1=-1.                                                         JIM01400
      NLOOP=10                                                         JIM01410
      CALL TAXES(ADMTGF,BASISO,BASISF,AMORT,ATAX,SXDPR,ADEPR,          JIM01420
     1TST1,XTAX,XDEPR,NLOOP)                                           JIM01430
700   IF(ICSTG.NE.2)GO TO 710                                          JIM01440
      CALL COSTG(RDG,ADEPR,XDEPR,BASISO,TSALE,GANTX,CPTX,PRFTX,ACAPN,ATAJIM01450
     1X)                                                               JIM01460
C  SUMMARY OUTPUT                                                      JIM01470
710   GO TO(1,2,3),ICSUB                                               JIM01480
1     WRITE(IOUT,11)                                                   JIM01490
11    FORMAT('1',///,36X'MODEL TYPE LIMITED DIVIDENDS')                JIM01500
      GO TO 20                                                         JIM01510
2     WRITE(IOUT,12)                                                   JIM01520
12    FORMAT('1',///,40X'MODEL TYPE CONVENTIONAL')                     JIM01530
      GO TO 20                                                         JIM01540
3     WRITE(IOUT,13)                                                   JIM01550
 13   FORMAT('1',///,40X'MODEL TYPE NON-PROFIT')                       JIM01560
 20   CONTINUE                                                         JIM01570
      GO TO (1000,2000,3000,3002,3004,3006), INUR                      JIM01580
1000  WRITE (IOUT, 1001)                                               JIM01590
1001  FORMAT(' ',40X'NEW CONSTRUCTION'/' ',36X'DOUBLE DECLINING BALANCE'JIM01600
     1)                                                                JIM01610
      GO TO 3009                                                       JIM01620
2000  WRITE (IOUT,2001)                                                JIM01630
2001  FORMAT (' ',40X'USED HOUSING')                                   JIM01640
      GO TO 3009                                                       JIM01650
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FILE: TAXCST   FORTRAN  P1                MASSACHUSETTS INSTITUTE OF TECHNOLOGY

3000   WRITE (IOUT,3001)                                                    JIM01660
3001   FORMAT(' ',40X 'REHABILITATED HOUSING')                              JIM01670
       GOTO 3009                                                            JIM01680
3002   WRITE(IOUT,3003)                                                     JIM01690
3003   FORMAT(' ',40X'STRAIGHT LINE DEPRECIATION')                          JIM01700
       GO TO 3009                                                           JIM01710
3004   WRITE(IOUT,3005)                                                     JIM01720
3005   FORMAT(' ',40X'NC DEPRECIATION')                                     JIM01730
        GO TO 3009                                                          JIM01740
3006   WRITE(IOUT,3007)                                                     JIM01750
3007   FORMAT(' ',27X'SUM OF THE YEARS DIGITS DEPRECIATICN')                JIM01760
3009   GO TO(3010,3020),ICSTQ                                               JIM01770
3010   WRITE(IOUT,21)                                                       JIM01780
21     FORMAT(//,' ',10X,'SPECIFIED VARIABLES',//,' '2X'DIRECT CCNSTRUCTIJIM01790
      XON  SHELL'                                                          JIM01800
      1,4X'------ DEVELOPMENT-------'3X'REL.EST.'3X'PROFIT'4X'------- MORJIM01810
      2TGAGE -------',/,' '4X'COSTS'14X'COSTS'7X'PERIOD'3X'INTEREST'       JIM01820
      3,1X'REL.TX.'3X'TX.RATE'4X'RATE'4X'FRACTION'5X'INTEREST'2X'PERIOD')JIM01830
       WRITE(IOUT,22) BCSTC,BCSTR,TDEV,RIFIN,RRETD,RRET,RPROF,RMRT,        JIM01840
      1RIMTG,TMTG                                                          JIM01850
 22    FORMAT(' ' ,F12.2,3X,F12.2,6X,F5.3,4X,6(F6.4,4X),F4.0)               JIM01860
       GO TO 4000                                                           JIM01870
3020   WRITE(IOUT,3030)                                                     JIM01880
3030   FORMAT(' ','SPECIFIED VARIABLES'/' SHELL COST  DEV. PER.  PROF. RAJIM01890
      1TE  MORTGAGE INT.  PERIOD'/)                                        JIM01900
       WRITE(IOUT,3040) BCSTR,TDEV,RPROF,RIMTG,TMTG                        JIM01910
3040   FORMAT(2(F11.2),2F11.3,F11.2)                                        JIM01920
4000   WRITE(IOUT,19)                                                       JIM01930
 19    FORMAT(//,' ',10X'PROJECT INDICATORS',//,' ',8X,'LAND'10X' REAL EQJIM01940
      1UITY'                                                               JIM01950
      14X'MORTGAGE'8X'PROFIT  MARKET RENT  BASIC RENT SALE PRICE    YR') JIM01960
       WRITE(IOUT,5000) LND,RELEQ,MRT,PRFIT,CRNTM,CRNTB,PSALE,NY           JIM01970
 5000  FORMAT(' ',F12.2,8X,F12.2,3X,4F12.2,F12.2,5X,I2)                    JIM01980
       WRITE(IOUT,200) BRPLC,EXCES,BWC,BSRA,BFE,BCCST,SIZE,VAC,NU          JIM01990
200    FORMAT(/' ','TOTAL REPL COST= 'F10.2' EXCESS FINANCG AND LAND HOLDJIM02000
      1GFEES= 'F10.2/' COST OF WKG CAP= 'F10.2 '  BSRA= 'F10.2,8X,'BLDRS JIM02010
      2PROF= 'F10.2,6X,'CARRYING COSTS= 'F10.2/ ' NO. OF ROOMS= 'F6.2'  VJIM02020
      3ACANCY RATE= 'F6.2,10X'NO OF UNITS='I4)                             JIM02030
       GO TO(23,23,24),ICSUB                                               JIM02040
 23    WRITE(IOUT,223) BTRN                                                JIM02050
 223   FORMAT(///,' ',20X'BEFORE TAX RETURN',F12.4)                        JIM02060
       WRITE(IOUT,40) BPV,RTNAV,RTNAF,AVDRN,RRATE                          JIM02070
 40    FORMAT(//,' '20X'AFTER TAXES'7X'  PRESENT  '8X'RATES OF RETURN'15XJIM02080
      1'DEVELOPER',/,' '40X'VALUE'6X'AVERAGE'2X'WITH FUND'5X'DISCN',8X    JIM02090
      2'DISCOUNT RATE',/,' ',37X,F12.2,4F10.4)                             JIM02100
       WRITE(IOUT,43)   RRIT,FXNPV                                         JIM02110
43     FORMAT(//,' ',20X'INTERNAL RATE OF RETURN',F8.4,'   FOR RESIDUAL PJIM02120
      1V OF  ',F12.2)                                                      JIM02130
       WRITE(IOUT,45) RYTAX,RKTAX,RYTXM,DYRS                               JIM02140
45     FORMAT(//' ','INCOME TAX RATE= 'F6.2,8X,'CAPITAL GAINS TAX RATE= 'JIM02150
      1F6.2/' MINIMUM TAX ON INCOME FROM EXCESS DEPREC.= 'F6.2/' ECONOMICJIM02160
      2 LIFE FOR TAX PURPOSES (YRS)= 'F6.0//)                              JIM02170
       WRITE(IOUT,50)                                                      JIM02180
50     FORMAT(///,' '45X'ANNUAL RETURN AND RATE,  BY YEAR',//' ',          JIM02190
      14(1X,'YR'3X'RETURN'5X'RATE'4X))                                     JIM02200
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      WRITE(IOUT,52) (N,ARETN(N),RRTN(N),N=1,NY)                        JIM02210
52    FORMAT(4(2X,I2,1X,F11.2,1X,F7.3,1X))                              JIM02220
      WRITE(IOUT,54)                                                    JIM02230
54    FORMAT(//4(2X,'YR'2X'DISC. PRESENT VALUE'))                       JIM02240
      WRITE(IOUT,55) (N,DPV(N),N=1,NY)                                  JIM02250
55    FORMAT(4(2X,I2,F12.2,9X))                                         JIM02260
24     CONTINUE                                                         JIM02270
      GO TO (9999,9999,9999,9999,9999,9999,9999,9997),IOUT              JIM02280
9997  WRITE(6,9998)                                                     JIM02290
9998  FORMAT(' ','OUTPUT IN FILE FT08F001. OFFLINE PRINTCC FILE FT08F001JIM02300
     1')                                                                JIM02310
9999  CONTINUE                                                          JIM02320
      CALL EXIT                                                         JIM02330
      END                                                               JIM02340
                                                                        JIM02350
                                                                        JIM02360
       SUBROUTINE CSTEQ                                                 JIM02370
                                                                        JIM02380
C TO CALCULATE DEVELOPMENT COSTS AND EQUITY                             JIM02390
      COMMON BCSTC,TDEV,RIFIN,RRETD,RMRT,RPROF,RRET,RIMTG,TMTG,RBFE,    JIM02400
     1NY,RELEQ,MRT,PRFIT,TACST,CTRM,PSALE,BTRN,ABTRN,ARETN(60),RRTN(60),JIM02410
     2RTNAV,RTNAF,BNPV,AVDRN,GTSCT,GDCST,CSTGM,ACAPI,ICSUB,DUM1,DUM2    JIM02420
     3,CNPAY,BRPLC,BCSTS,EQUTY,BDCST,LND,BCSTR,INUR,NRCPR,RRATE,NYF     JIM02430
     4,ARET(60),BSRA,EXCES,NPSAL,WC,BWC,BCCST,NU,BPV,TRET(60)           JIM02440
     5,BFE,ICC,NDV,NYA,IFUND,CNPYS,CTRMS,CRNTM,CRNTB,ICUT,DYRS,RFUND    JIM02450
     6,RYTAX,RKTAX,RYTXM,SIZE,VAC,ISYND,DPV(60),DPVF(60),SRETN,SRET,NCAPJIM02460
      REAL LND,MRT                                                      JIM02470
      DATA RMTIN/.005/,RFHEX/.003/,RFHIN/.005/,RAMP/0.0/,RFNMA/.015/,RTAJIM02480
     1R/.005/,RLAO/.0065/,RCMT/0.0/,RIFNO/.50/,RINSL/.01/,RINSF/.01/,   JIM02490
     2BCSTD/0.0/,RLND/.0/,RILND/.10/,RBSRA/.1/,RARCHS/.02/,             JIM02500
     3RIWC/.10/,RWC/.02/,RFIN/.02/,RBOND/.0124/                         JIM02510
      EQUIVALENCE (TDEV,TLND)                                           JIM02520
      RRETD=.1                                                          JIM02530
      GO TO (3,1,2),ICSUB                                               JIM02540
C CONVENTIONAL FINANCING                                                JIM02550
 1    RIFHA=RIFIN                                                       JIM02560
      RRETD=0.1                                                         JIM02570
      RMRT=0.80                                                         JIM02580
      RMTIN=0.                                                          JIM02590
      RFHEX=0.                                                          JIM02600
      RAMP=0.                                                           JIM02610
      RFNMA=0.                                                          JIM02620
      RBSRA=0.                                                          JIM02630
      GO TO 4                                                           JIM02640
C NON-PROFIT                                                            JIM02650
 2    CONTINUE                                                          JIM02660
      RRETD=0.1                                                         JIM02670
      RIFHA=RIMTG-RMTIN                                                 JIM02680
      RMRT=1.                                                           JIM02690
      RBSRA=0.                                                          JIM02700
      RWC=0.                                                            JIM02710
      GO TO 4                                                           JIM02720
C LIMITED DIVIDEND                                                      JIM02730
3     RMRT=0.90                                                         JIM02740
      RRETD=0.1                                                         JIM02750
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4      RIFHA=RIMTG-RMTIN                                                JIM02760
C  DIRECT COSTS ARE CONSTRUCTION AND DEMOLITION                         JIM02770
       BDCST=BCSTC+BCSTD                                                JIM02780
C      LAND AND SHELL CCSTS                                             JIM02790
       BCSTS=LND+BCSTR                                                  JIM02800
C TOTAL CONSTRUCTION COSTS                                              JIM02810
C TYPICAL FHA ALLOWANCES FOR FEES                                       JIM02820
       RARCH=.045                                                       JIM02830
       RBO=.03                                                          JIM02840
       IF(BDCST.LE.1000000.)GO TO 9                                     JIM02850
       DCST1=BDCST-1000000.                                             JIM02860
       IF(DCST1.GT.1000000.)DCST1=1000000.                              JIM02870
       RARCH1=.04                                                       JIM02880
       RBO1=.02                                                         JIM02890
       RARCH=(RARCH*1000000.+RARCH1*DCST1)/BDCST                        JIM02900
       RBO=(RBO*1000000.+RBO1*DCST1)/BDCST                              JIM02910
       IF(BDCST.LE.2000000.)GO TO 9                                     JIM02920
       DCST2=BDCST-2000000.                                             JIM02930
       IF(DCST2.GT.1000000.)DCST2=1000000.                              JIM02940
       RARCH2=.035                                                      JIM02950
       RBO2=.01                                                         JIM02960
       RARCH=RARCH+(RARCH2*DCST2)/BDCST                                 JIM02970
       RBO=RBO+(RBO2*DCST2)/BDCST                                       JIM02980
       IF(BDCST.LE.3000000.)GO TO 9                                     JIM02990
       DCST3=BDCST-3000000.                                             JIM03000
       RARCH3=.03                                                       JIM03010
       RBO3=.005                                                        JIM03020
       RARCH=RARCH+(RARCH3*DCST3)/BDCST                                 JIM03030
       RBC=RBO+(RBO3*DCST3)/BDCST                                       JIM03040
 9     CONTINUE                                                         JIM03050
       RARCH=RARCH+RARCHS                                               JIM03060
       BTCST=BDCST+(RARCH+RBFE+RBO+REOND)*BDCST                         JIM03070
C AGGREGATE FEES: MORT AND CONST.                                       JIM03080
       IF(RIFIN-RIFHA)  10,11,11                                        JIM03090
10     A=0.                                                             JIM03100
       RIFN=RIFIN                                                       JIM03110
       GO TO 12                                                         JIM03120
11     A=TDEV*RIFNO*(RIFIN-RIFHA)                                       JIM03130
       RIFN=RIFHA                                                       JIM03140
C  INSPECTION FEE(RFHIN) FOR REHAB ACTUALLY SHOULD BE BASED ON          JIM03150
C  CONSTRUCTION COSTS INSTEAD CF LOAN AMOUNT                            JIM03160
12     RFEEM=RMTIN+RFHEX+RFHIN+RAMP+RFNMA+RTAR+RLAO+RFIN+RIFNO*TDEV*(RIFNJIM03170
      1+RINSL+RINSF)                                                    JIM03180
C   REAL ESTATE TAXES DURING DEVELOPMENT                                JIM03190
       RETXD=RRETD*(LND+BCSTR)*TDEV                                     JIM03200
       RFEEC=RIFNO*TDEV*(RIFN+RINSL+RINSF)                              JIM03210
C  BUILDERS FEE                                                         JIM03220
       BFE=RBFE*BDCST                                                   JIM03230
C FHA TOTAL REPLACEMENT COST                                            JIM03240
       BRPLC=(1./(1.-RMRT*RFEEM*(1.+RBSRA)))*(((1.+RBO+RBOND+RARCH)*BDCSTJIM03250
      1+RETXD)*(1.+RBSRA)+BCSTS)                                        JIM03260
C BUILDERS/SPONSORS RISK ALLOWANCE                                      JIM03270
       BSRA=RBSRA*((1.+RBO+RBOND+RARCH)*BDCST+RETXD+RFEEM*RMRT*BRPLC)-BFEJIM03280
C MORTGAGE                                                              JIM03290
       MRT=RMRT*BRPLC                                                   JIM03300
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C  EXCESS FINANCI G CHARGES DURING CONSTRUCTION PERIOD                    JIM03310
      EXCES=A*MRT+RLND*LND*RILND*TLND                                     JIM03320
C  COMMITMENT FEE OR COMBINED COMMITMENT FEE AND DISCOUNT POINTS FOR      JIM03330
C  PERMANENT LENDER                                                      JIM03340
      CMTFE=RCMT*MRT                                                      JIM03350
C APPARENT EQUITY                                                        JIM03360
      EQUTY=BRPLC-MRT                                                     JIM03370
C WORKING CAPITAL                                                        JIM03380
      WC=RWC*MRT                                                          JIM03390
      BWC=TDEV*WC*RIWC                                                    JIM03400
C REAL EQUITY                                                            JIM03410
      IF(RELEQ) 15,20,25                                                  JIM03420
C  NEGATIVE VALUE FOR RELEQ IN INPUT WILL CAUSE EFFECTIVE                JIM03430
C  REAL EQUITY TO ASSUME ONLY THE AFTER TAX PORTION OF                   JIM03440
C  BSRA IS FOREGONE                                                      JIM03450
15    RELEQ=EQUTY-(1.-RYTAX)*BSRA+EXCES+BWC+CMTFE                        JIM03460
      GO TO 25                                                            JIM03470
20    RELEQ=EQUTY-BSRA+EXCES+BWC+CMTFE                                   JIM03480
C    ASSURE MINIMUM EQUITY OF 3 PER CENT OF MORTGAGE (AS REQD BY FHA (?)JIM03490
      IF(RELEQ-0.03*MRT)17,25,25                                          JIM03500
17    RELEQ= 0.03*MRT                                                    JIM03510
C CARRYING COSTS (SOME PROJECTS ALSO INCLUDE'BUILDER'S OVERHEAD)         JIM03520
25    BCCST=(RMTIN+RFHEX+RFHIN+RFNMA+RAMP+RFIN+RIFNO*TDEV*(RIFN+RINSL+   JIM03530
     1RINSF))*MRT+RETXD+EXCES                                            JIM03540
      RETURN                                                              JIM03550
      END                                                                 JIM03560
                                                                          JIM03570
                                                                          JIM03580
      SUBROUTINE OPCST                                                    JIM03590
                                                                          JIM03600
CC                                                                        JIM03610
CC   TO CALCULATE ANNUAL COSTS AND RENT/ROOM; ALSO CONSTANT MORT. PAYMENJIM03620
CC                                                                        JIM03630
      REAL MRT,LND                                                        JIM03640
      COMMON BCSTC,TDEV,RIFIN,RRETD,RMRT,RPROF,RRET,RIMTG,TMTG,RBFE,      JIM03650
     1NY,RELEQ,MRT,PRFIT,TACST,CTRM,PSALE,BTRN,ABTRN,ARETN(60),RRTN(60),JIM03660
     2RTNAV,RTNAF,BNPV,AVDRN,ICSTG,ACAPM,CSTGM,ACAPI,ICSUB,D1,D2          JIM03670
     3,CNPAY,BRPLC,BCSTS,EQUTY,BDCST,LND,BCSTR,INUR,NRCPR,RRATE,NYF       JIM03680
     4,ARET(60),BSRA,EXCES,NPSAL,WC,BWC,BCCST,NU,BPV,TRET(60)             JIM03690
     5,BFE,ICC,NDV,NYA,IFUND,CNPYS,CTRMS,CRNTM,CRNTB,IOUT,DYRS,RFUND     JIM03700
     6,RYTAX,RKTAX,RYTXM,SIZE,VAC,ISYND,DPV(60),DPVF(60),SRETN,SRET,NCAPJIM03710
      REAL NRMS                                                           JIM03720
      DATA RCMG/.05/,RCRM/.08/,RCRR/.005/,RCMI/50./,RVAC/.05/,NRMS/4.5/,JIM03730
     1RISUB/.01/,NMTGP/1/                                                JIM03740
      RRET=0.15                                                           JIM03750
      TMTG=40.                                                            JIM03760
      SIZE=NRMS                                                           JIM03770
      VAC=RVAC                                                            JIM03780
      GO TO(3,3,1),ICSUB                                                  JIM03790
    1   CCNTINUE                                                          JIM03800
C MORTGAGE CONSTANT FOR MARKET RATE INTEREST (INCL. INS. PREM.)          JIM03810
C AND PAYMENTS EVERY NMTGP FOR TMTG YEARS                                JIM03820
 3    CNPAY=MRT*RIMTG/(1.-(1.+RIMTG/NMTGP)**(-TMTG*NMTGP))               JIM03830
C PROFIT                                                                 JIM03840
      PRFIT=RPROF*EQUTY                                                   JIM03850
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FILE: TAXCST   FORTRAN  P1                MASSACHUSETTS INSTITUTE OF TECHNCLOGY

C    MISC. ROOM EXPENSES                                                    JIM03860
       ACTMI=RCMI*NRMS*NU+RCRR*MRT                                          JIM03870
C    SUM OF COSTS GIVEN AS OF TOTAL ANUAL COST                              JIM03880
       SCPTC=RCMG+RCRM+RRET+RVAC                                            JIM03890
C                                                                           JIM03900
C    TOTAL ANNUAL COST                                                      JIM03910
       CNPYS=MRT*RISUB/(1.-(1.+RISUB/NMTGP)**(-TMTG*NMTGP))                 JIM03920
       TACST=(CNPYS+PRFIT+ACTMI)/(1.-SCPTC)                                 JIM03930
C                                                                           JIM03940
C    RENT/ROOM/MONTH                                                        JIM03950
C                                                                           JIM03960
       CTRMS=TACST/(NRMS*NU*12)                                             JIM03970
       CTRM=CTRMS+(CNPAY-CNPYS)/(NRMS*NU*12)                                JIM03980
C    MONTHLY RENT PER UNIT                                                  JIM03990
       CRNTM=CTRM*NRMS                                                      JIM04000
       CRNTB=CTRMS*NRMS                                                     JIM04010
        WRITE(IOUT,99) CNPAY,CNPYS                                          JIM04020
99     FORMAT(//' ','MORTGAGE CONSTANT PAYMENT, MARKET RATE= 'F10.2,5X,'AJIM04030
     1T SUBSIDIZED RATE= 'F10.2)                                            JIM04040
20     CONTINUE                                                             JIM04050
       RETURN                                                               JIM04060
       END                                                                  JIM04070
                                                                            JIM04080
                                                                            JIM04090
       SUBROUTINE TAXES(ADMTGF,BASISI,BASISF,AMORT,ATAX,SXDPR,ADEPR,        JIM04100
     1TST1,XTAX,XDEPR,NLOOP)                                                JIM04110
C COMPUTES DEPRECIATION, INCOME TAX, MORTGAGE AMORTIZATION                  JIM04120
        DIMENSION ATAX(60),ADEPR(60),BASTR(61)                              JIM04130
        DIMENSION ADMTG(61),AINT(60),AMORT(60),BASIS(61),XDEPR(60)          JIM04140
       COMMONBCSTC,TDEV,RIFIN,RRETD,RMRT,RPROF,RRET,RIMTG,TMTG,RBFE,        JIM04150
     1NY,RELEQ,MRT,PRFIT,TACST,CTRM,PSALE,BTRN,ABTRN,ARETN(60),RRTN(60),JIM04160
     2RTNAV,RTNAF,BNPV,AVDRN,ICSTG,ACAPM,CSTGM,ACAPI,ICSUB                  JIM04170
     3,RRIT,FXNPV,CNPAY,BRPLC,BCSTS,EQUTY,BDCST,LND,BCSTR,INUR,NRCPR        JIM04180
     4,RRATE,NYF,ARET(60),BSRA,EXCES,NPSAL,WC,BWC,BCCST,NU,BPV,TRET(60)     JIM04190
     5,BFE,ICC,NDV,NYA,IFUND,CNPYS,CTRMS,CRNTM,CRNTB,ICUT,DYRS,RFUND        JIM04200
     6,RYTAX,RKTAX,RYTXM,SIZE,VAC,ISYND,DPV(60),DPVF(60),SRETN,SRET,NCAPJIM04210
       DIMENSION BXRHB(61),DEPRX(60),DEPRR(60),DEPRS(60),XTAX(60)           JIM04220
       REAL LND,MRT                                                         JIM04230
       DATA RISUB/.01/                                                      JIM04240
CC THE 1969 TAX REFORM ACT IMPOSES MINIMUM TAX ON PREFERRED                 JIM04250
CC   INCOME, SUCH AS SHELTER FROM EXCESS DEPRECIATION.  WE ASSUME THE       JIM04260
CC   $30,000 ALLOWED HAS ALREADY BEEN USED IN OTHER PROJECTS               JIM04270
CC   THE MINIMUM TAX ON INCOME OTHERWISE SHELTERED BY EXCESS DEPRECIATIOJIM04280
CC   N IS TEN PER CENT, IN WHICH CASE RYTXM SHOULD BE INPUT AS 0.10.       JIM04290
C FOR YEARS WHEN A POSITIVE TAX OCCURS (RATHER THAN A TAX SAVING)          JIM04300
C THE PROGRAM SHOULD BE REVISED TO APPLY THE MINIMUM TAX TO SHELTERED       JIM04310
C INCOME LESS REGULAR TAX PAID.                                             JIM04320
       RYTX1=RYTXM                                                          JIM04330
       ADMTG(NDV)=MRT                                                       JIM04340
       NDEV=TDEV                                                            JIM04350
       IF(RELEQ)1,2,3                                                       JIM04360
1      RELEQ=0.03*MRT                                                       JIM04370
       GO TO 3                                                              JIM04380
2      RELEQ=BRELC-BSRA-MRT                                                 JIM04390
3      CONTINUE                                                             JIM04400
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      DO 5 N=1,NDEV                                                    JIM04410
      AMORT(N)=0.                                                      JIM04420
      ADEPR(N)=0.                                                      JIM04430
      XTAX(N)=0.                                                       JIM04440
5     XDEPR(N)=0.                                                      JIM04450
      DO 10 N=NDV,NY                                                   JIM04460
      AINT(N)=ADMTG(N)*RIMTG                                           JIM04470
      AMORT(N)=CNPAY-AINT(N)                                           JIM04480
 10   ADMTG(N+1)=ADMTG(N)-AMORT(N)                                     JIM04490
      GO TO (11,11,60),ICSUB                                           JIM04500
11    GO TO (100,12),ICC                                               JIM04510
C  TAX SAVING CN CONSTRUCTICN LOSSES, LOSSES ASSUMED PAID OUT OF EQUITY JIM04520
C  OR ADVANCES ON INTERIM LCAN.                                        JIM04530
12    DO 13 N=1,NDEV                                                   JIM04540
13    ATAX(N)=-(BCCST/TDEV)*RYTAX                                      JIM04550
      GO TO 14                                                         JIM04560
100   DO 200 N=1,NDEV                                                  JIM04570
200   ATAX(N)=0.                                                       JIM04580
C                                                                      JIM04590
C                                                                      JIM04600
C  DEPRECIATION WITH INUR:  1=DDB, 2=USED, 3=REHAB, 4=SL DEPR, 5=NO DEPRJIM04610
C  6=SUM OF THE YEAR'S DIGITS METHOD OF DEPRECIATICN                   JIM04620
14    IF(TST1)210,15,15                                                JIM04630
210   BASIS(NDV)=BASISI                                                JIM04640
      GO TO 220                                                        JIM04650
15    IF(ACAPI.EQ.0.)ACAPI=RELEQ                                       JIM04660
      BASIS(NDV)=MRT+ACAPI-LND-BCCST*(ICC-1)                           JIM04670
      BASISI=BASIS(NDV)                                                JIM04680
220   SXDPR=0.                                                         JIM04690
      ZDEPR=BASIS(NDV)/DYRS                                            JIM04700
      GO TO (16,17,30,150,160,170), INUR                               JIM04710
C   NEW CONSTRUCTION                                                   JIM04720
16    DEP= 2.                                                          JIM04730
      GO TO 18                                                         JIM04740
C USED HOUSING                                                         JIM04750
17     DEP= 1.25                                                       JIM04760
18     CCNTINUE                                                        JIM04770
      DO 25 N=NDV,NY                                                   JIM04780
      ADEPR(N)=(BASIS(N)/DYRS)*DEP                                     JIM04790
C  TEST FOR SWITCH TC STRAIGHT LINE                                    JIM04800
      TDEPR=ADEPR(N)-BASIS(N)/(DYRS-(N-NDV))                           JIM04810
      IF(TDEPR)19,19,20                                                JIM04820
19    ADEPR(N)=BASIS(N)/(DYRS-(N-NDV))                                 JIM04830
      XDEPR(N)=0.                                                      JIM04840
      GO TO 21                                                         JIM04850
20    XDEPR(N)=ADEPR(N)-ZDEPR                                          JIM04860
      IF(XDEPR(N).LE.0.)XDEPR(N)=0.                                    JIM04870
21    BASIS(N+1)=BASIS(N)-ADEPR(N)                                     JIM04880
      SXDPR=BASIS(NDV)-ZDEPR*(NY-NDEV)-BASIS(N+1)                      JIM04890
C                                                                      JIM04900
      XTAX(N)=PRFIT + AMORT(N) - ADEPR(N)                              JIM04910
24    ATAX(N)=XTAX(N)*RYTAX+XDEPR(N)*RYTXM                             JIM04920
      RYTXM=RYTX1                                                      JIM04930
25    CONTINUE                                                         JIM04940
      GO TO 48                                                         JIM04950
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C  REHAB: STRUCT. DEPR. AT 125, REHAB. EXPEND. 5 YR. STR. LINE          JIM04960
C         EXCESS REHAB EXPEND. AT 200 PERCENT DECL BAL                  JIM04970
C         EXCESS REHAB EXPENDITURES AT 200 PERCENT DECL. BAL.           JIM04980
30     CONTINUE                                                         JIM04990
       BASTR(NDV)=BCSTR                                                 JIM05000
       ZDPRS=BCSTR/DYRS                                                 JIM05010
       IF(TST1)230,240,240                                              JIM05020
230    REHAB=BASISI-BCSTR                                               JIM05030
       GO TO 250                                                        JIM05040
240    REHAB=BASIS(NDV)-BCSTR                                           JIM05050
250    CONTINUE                                                         JIM05060
       ZDPRR=REHAB/DYRS                                                 JIM05070
       XRHAB= REHAB-NU*15000.                                           JIM05080
       IF(XRHAB) 35,35,34                                               JIM05090
34     REHAB = NU*15000.                                                JIM05100
       ZDPRR=REHAB/DYRS                                                 JIM05110
       BXRHB(NDV)=XRHAB                                                 JIM05120
       ZDPRX=XRHAB/DYRS                                                 JIM05130
       GO TO 36                                                         JIM05140
35     BXRHB(NDV)=0.                                                    JIM05150
       ZDPRX=0.                                                         JIM05160
       XDPRX=0.                                                         JIM05170
36     DO 43 N=NDV,NY                                                   JIM05180
       DEPRR(N)=REHAB/5.                                                JIM05190
       XDPRR=DEPRR(N)-ZDPRR                                             JIM05200
       IF(N-5-TDEV)38,38,37                                             JIM05210
37     REHAB=0.                                                         JIM05220
       ZDPRR=0.                                                         JIM05230
       XDPRR=0.                                                         JIM05240
       DEPRR(N)=0.                                                      JIM05250
38     CONTINUE                                                         JIM05260
       DEPRX(N)=(BXRHB(N)/DYRS)*2.                                      JIM05270
       XDPRX=DEPRX(N)-ZDPRX                                             JIM05280
       IF(XDPRX.LE.0.)XDPRX=0.                                          JIM05290
C TEST FOR SWITCH TO STRAIGHT LINE                                      JIM05300
       TDPRX=DEPRX(N)-BXRHB(N)/(DYRS-(N-NDV))                           JIM05310
       IF(TDPRX)255,256,256                                             JIM05320
255    DEPRX(N)=BXRHB(N)/(DYRS-(N-NDV))                                 JIM05330
       XDPRX=0.                                                         JIM05340
256    BXRHB(N+1)=BXRHB(N)-DEPRX(N)                                     JIM05350
       DEPRS(N)=(BASTR(N)/DYRS)*1.25                                    JIM05360
       XDPRS=DEPRS(N)-ZDPRS                                             JIM05370
       IF(XDPRS.LE.0.)XDPRS=0.                                          JIM05380
C TEST FOR SWITCH TO STRAIGHT LINE                                      JIM05390
       TDPRS=DEPRS(N)-BASTR(N)/(DYRS-(N-NDV))                           JIM05400
       IF(TDPRS)260,261,261                                             JIM05410
260    DEPRS(N)=BASTR(N)/(DYRS-(N-NDV))                                 JIM05420
       XDPRS=0.                                                         JIM05430
261    BASTR(N+1)=BASTR(N)-DEPRS(N)                                     JIM05440
       ADEPR(N)=DEPRS(N)+DEPRR(N)+DEPRX(N)                              JIM05450
       XDEPR(N)=XDPRS+XDPRR+XDPRX                                       JIM05460
       BASIS(N+1)=BASIS(N)-ADEPR(N)                                     JIM05470
       XTAX(N)=PRFIT+AMORT(N)-ADEPR(N)                                  JIM05480
C  AMOUNT OF TAX                                                        JIM05490
41     ATAX(N)=XTAX(N)*RYTAX+XDEPR(N)*RYTXM                             JIM05500
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      RYTXM=RYTX1                                                        JIM05510
43    CONTINUE                                                           JIM05520
      SXDPR=BASIS(NDV)-ZDEPR*(NY-NDEV)-BASIS(N+1)                        JIM05530
      GO TO 48                                                           JIM05540
C  STRAIGHT LINE CEPREC ONLY, TAX ON DIV, AMORT, DEPR                    JIM05550
150   DO 155 N=NDV,NY                                                    JIM05560
      ADEPR(N)=ZDEPR                                                     JIM05570
      XDEPR(N)=0.                                                        JIM05580
      XTAX(N)=PRFIT+AMORT(N)-ADEPR(N)                                    JIM05590
      ATAX(N)=XTAX(N)*RYTAX                                              JIM05600
155   BASIS(N+1)=BASIS(N)-ADEPR(N)                                       JIM05610
      SXDPR=0.                                                           JIM05620
      GO TO 48                                                           JIM05630
C  NO DEPRECIATION ALLOWANCE, TAX ON DIV & AMORT                         JIM05640
160   DO 165 N=NDV,NY                                                    JIM05650
      ADEPR(N)=0.                                                        JIM05660
      XDEPR(N)=0.                                                        JIM05670
      XTAX(N)=PRFIT+AMORT(N)                                             JIM05680
      ATAX(N)=XTAX(N)*RYTAX                                              JIM05690
165   BASIS(N+1)=BASIS(NDV)                                              JIM05700
      SXDPR=0.                                                           JIM05710
       GO TO 48                                                          JIM05720
                                                                         JIM05730
C  SUM OF THE YEARS DIGITS DEPRECIATION                                  JIM05740
170   S=DYRS*(DYRS+1.)/2.                                                JIM05750
       DO 175 N=NDV,NY                                                   JIM05760
       ADEPR(N)=BASIS(NDV)*(DYRS-(N-NDV))/S                              JIM05770
C  TEST FOR SWITCH TO STRAIGHT-LINE                                      JIM05780
       TDEPR=ADEPR(N)-BASIS(N)/(DYRS-(N-NDV))                            JIM05790
       IF(TDEPR.GT.0.)GO TO 171                                          JIM05800
       ADEPR(N)=BASIS(N)/(DYRS-(N-NDV))                                  JIM05810
       XDEPR(N)=0.                                                       JIM05820
       GO TO 172                                                         JIM05830
171   XDEPR(N)=ADEPR(N)-ZDEPR                                            JIM05840
       IF(XDEPR(N).LE.0.)XDEPR(N)=0.                                     JIM05850
172   BASIS(N+1)=BASIS(N)-ADEPR(N)                                       JIM05860
       SXDPR=BASIS(NDV)-ZDEPR*(NY-NDEV)-BASIS(N+1)                       JIM05870
       XTAX(N)=PRFIT+AMORT(N)-ADEPR(N)                                   JIM05880
175   ATAX(N)=XTAX(N)*RYTAX+XDEPR(N)*RYTXM                               JIM05890
48    ADMTGF=ADMTG(NY+1)                                                 JIM05900
      BASISF=BASIS(NY+1)                                                 JIM05910
      NDR=NDEV+5                                                         JIM05920
      WRITE(IOUT,995) NY,BASISF,ADMTGF                                   JIM05930
995   FORMAT(///' ','SALE YR= 'I2,8X,' BASISF= 'F10.2,8X,'ADMTGF= 'F10.2JIM05940
     1)                                                                  JIM05950
C  PRINT DEPREC. AND AMORTIZ. SCHEDS. FOR LAST YR, BEFORE AND AFTER STEPJIM05960
      IF(NLOOP.EQ.10)GO TO 50                                            JIM05970
      IF(TST1) 55,50,55                                                  JIM05980
50    CONTINUE                                                           JIM05990
      GO TO (3004,3004,2500,3004,60),INUR                                JIM06000
2500  IF(XRHAB)2800,2800,2600                                            JIM06010
2600  WRITE(IOUT,2700)                                                   JIM06020
2700  FORMAT(//,' ','DEPRECIATION ON EXCESS REHAB EXPENDITURES'/)        JIM06030
      NDR=NDV+5                                                          JIM06040
      WRITE(IOUT,97) (N,DEPRX(N),N=NDV,NY)                               JIM06050
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FILE: TAXCST   FORTRAN  P1                MASSACHUSETTS INSTITUTE OF TECHNCLOGY

2800  WRITE(IOUT,3001)                                                    JIM06060
3001  FORMAT(//,' ','DEPRECIATION ON REHAB EXPENDITURES'/)                JIM06070
      WRITE(IOUT,97) (N,DEPRR(N),N=NDV,NDR)                               JIM06080
      WRITE(IOUT,3002)                                                    JIM06090
3002  FORMAT(//,' ','DEPRECIATION ON STRUCTURE SHELL'/)                   JIM06100
      WRITE(IOUT,97) (N,DEPRS(N),N=NDV,NY)                                JIM06110
3004  WRITE(IOUT,3005)                                                    JIM06120
3005  FORMAT(//,' ','DEPRECIATION',/)                                     JIM06130
      WRITE(IOUT,97)  (N,ADEPR(N),N=NDV,NY)                               JIM06140
      WRITE(IOUT,303)                                                     JIM06150
303   FORMAT(//,' ','BASIS',/)                                            JIM06160
      WRITE(IOUT,97) (N,BASIS(N),N=NDV,NY)                                JIM06170
60    WRITE(IOUT,301)                                                     JIM06180
301   FORMAT(//,' ','AMORTIZATION',/)                                     JIM06190
      WRITE(IOUT,97) (N,AMORT(N),N=NDV,NY)                                JIM06200
      WRITE(IOUT,302)                                                     JIM06210
302   FORMAT(//' ','ADJUSTED MORTGAGE'/)                                  JIM06220
      WRITE(IOUT,97) (N,ADMTG(N),N=NDV,NY)                                JIM06230
97    FORMAT(5(2X,I2,F16.2))                                              JIM06240
55    CONTINUE                                                            JIM06250
      RETURN                                                              JIM06260
      END                                                                 JIM06270
                                                                          JIM06280
      SUBROUTINE SALE(BASISF,ADMTGF,SXDPR,GSALE,TSALE,GANTX,CPTX,PRFTX)   JIM06290
C  COMPUTES SALE PRICES AND TAXES AT SALE                                 JIM06300
                                                                          JIM06310
      COMMON BCSTC,TDEV,RIFIN,RRETD,RMRT,RPROF,RRET,RIMTG,TMTG,RBFE,      JIM06320
     1NY,RELEQ,MRT,PRFIT,TACST,CTRM,PSALE,BTRN,ABTRN,ARETN(60),RRTN(60),JIM06330
     2RTNAV,RTNAF,BNPV,AVDRN,ICSTG,ACAPM,CSTGM,ACAPI,ICSUB,D1,D2          JIM06340
     3,CNPAY,BRPLC,BCSTS,EQUTY,BDCST,LND,BCSTR,INUR,NRCPR,RRATE,NYF       JIM06350
     4,ARET(60),BSRA,EXCES,NPSAL,WC,BWC,BCCST,NU,BFV,TRET(60)             JIM06360
     5,BFE,ICC,NDV,NYA,IFUND,CNPYS,CTRMS,CRNTM,CRNTB,IOUT,DYRS,RFUND      JIM06370
     6,RYTAX,RKTAX,RYTXM,SIZE,VAC,ISYND,DPV(60),DPVF(60),SRETN,SRET,NCAPJIM06380
      REAL MRT,LND                                                        JIM06390
C                                                                         JIM06400
C  ON CAPITAL GAINS TAX, REASONABLE APPROXIMATIONS ARE                    JIM06410
C  0.30 FOR CORPORATIONS, 1/2 INCOME TAX RATE FOR INDIVIDUALS             JIM06420
C                                                                         JIM06430
      DATA CAPRT/.1/                                                      JIM06440
C                                                                         JIM06450
      NPSAL1=0.                                                           JIM06460
      NPSAL2=0.                                                           JIM06470
      GO TO(1,2,3,4,5,6,7,49,9,100,100),NPSAL                             JIM06480
 1    PSALE=ADMTGF                                                        JIM06490
      GO TO 49                                                            JIM06500
2     PSALE=(PRFIT+CNPAY)/CAPRT                                           JIM06510
      GO TO 49                                                            JIM06520
C  STRAIGHT LINE REAL DEPRECIATION                                        JIM06530
3     PSALE=(BFPLC-LND)*(1.-NYA/DYRS)+LND                                 JIM06540
      GO TO 49                                                            JIM06550
C  REAL DEPRECIATION:  ZERO INITIALLY, TWICE S. L. AT DYRS                JIM06560
4     PSALE=(BFPLC-LND)*(1.-(NYA/DYRS)**2)+LND                            JIM06570
      GO TO 49                                                            JIM06580
5     PSALE=BRELC                                                         JIM06590
      GO TO 49                                                            JIM06600
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6       B=1.025                                                          JIM06610
        GO TO 48                                                         JIM06620
7       B=1.05                                                           JIM06630
48      PSALE=BRPLC*(B**NYA)                                             JIM06640
        GO TO 49                                                         JIM06650
9       PSALE=ADMTGF+EQUTY                                               JIM06660
        GO TO 49                                                         JIM06670
100     STEST=ADMTGF-(LND+(1.-(NY+1)/DYRS)*BASISI)                       JIM06680
        IF(STEST)120,125,125                                             JIM06690
C   IF MTG BAL IS LESS THAN STRAIGHT LINE BASIS, WE JUST                 JIM06700
C   APPROXIMATE PSALE BY ADMTGF.  ACTUALLY YOU SHOULD LOOK               JIM06710
C   SEPARATELY AT THE CASES FOR WHICH ADMTGF IS ABOVE BASISF             JIM06720
C   (IN WHICH CASE GO THROUGH THE RECAPTURE CALCULATION)                 JIM06730
C   AND AT ADMTGF BELOW BASISF (EITHER ENTER LOSS OR ZERO TAX)           JIM06740
120     PSALE=ADMTGF                                                     JIM06750
        WRITE(IOUT,121)                                                  JIM06760
121     FORMAT(//' MORTGAGE BALANCE IS BELOW STRAIGHT LINE               JIM06770
       1 BASIS, PSALE ESTIMATED AS MORTGAGE BALANCE')                    JIM06780
        GO TO 49                                                         JIM06790
C   CHOICE OF SALE PRICE OPTIONS                                         JIM06800
125     GO TO (1,2,3,4,5,6,7,49,9,10,11),NPSAL                           JIM06810
C   SET INDICES FOR CASES WITH TAX RECOVERY, NPSAL 10 AND 11             JIM06820
10      NPSAL1=NPSAL                                                     JIM06830
        GO TO 1                                                          JIM06840
11      NPSAL2=NPSAL                                                     JIM06850
        GO TO 9                                                          JIM06860
C   SALE PRICE IS THE ONE PROVIDED IN INPUT                              JIM06870
 49     YSALE=PSALE-BASISF-LND                                           JIM06880
        IF(YSALE)70,70,50                                                JIM06890
 50     ITD=NYA*12                                                       JIM06900
        CALL RECAP(NRCPR,ITD,RCPTR,&51,&68)                              JIM06910
51      IF(YSALE-SXDPR)61,61,62                                          JIM06920
 61     GAINR=YSALE                                                      JIM06930
        GO TO 69                                                         JIM06940
 62     GAINR=SXDPR                                                      JIM06950
69      CPTR=RCPTR*GAINR                                                 JIM06960
        CPTX=CPTR*RYTAX                                                  JIM06970
        GAIN=YSALE-CPTR                                                  JIM06980
        GANTX=GAIN*RKTAX                                                 JIM06990
C   PREFERENCE TAX ON CAPITAL GAINS APPLIES TO GAIN EXCLUDED FROM        JIM07000
C   ORDINARY INCOME TAX LESS TAXES ORDINARILY PAID, TAXES ON GAIN HERE   JIM07010
        PRFTX=RYTXM*(0.5*GAIN-GANTX-CPTX)                                JIM07020
        IF(PRFTX.LT.0.)PRFTX=0.                                          JIM07030
        TSALE=CPTX+GANTX+PRFTX                                           JIM07040
        GO TO 71                                                         JIM07050
 68     TSALE=YSALE*RYTAX                                                JIM07060
        GO TO 71                                                         JIM07070
70      GAINR=0.                                                         JIM07080
        CPTR=0.                                                          JIM07090
        CPTX=0.                                                          JIM07100
        GAIN=0.                                                          JIM07110
        GANTX=0.                                                         JIM07120
        PRFTX=0.                                                         JIM07130
        TSALE=YSALE*RKTAX                                                JIM07140
 71     GSALE=PSALE-TSALE-ADMTGF                                         JIM07150
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FILE: TAXCST   FORTRAN  P1                MASSACHUSETTS INSTITUTE OF TECHNOLOGY

C  SET UP RECYCLE FOR CASES WHEN THE SALE PRICE IS TO INCLUDE TAXES     JIM07160
                                                                        JIM07170
      NTEST1=NPSAL1-NPSAL                                               JIM07180
      NTEST2=NPSAL2-NPSAL                                               JIM07190
      IF(NTEST1)85,80,85                                                JIM07200
C  THIS IN NPSAL 10 (GSALE=0) FIRST TIME THROUGH AT ADMTGF               JIM07210
80    PSALE=ADMTGF+TSALE/(1.-(RKTAX+RYTXM*(0.5-RKTAX)))                 JIM07220
      NPSAL1=NPSAL1+100                                                 JIM07230
       GO TO 49                                                         JIM07240
85    IF(NTEST2)95,90,95                                                JIM07250
C  THIS IS NPSAL 11 FIRST TIME THRU AT MTGE                              JIM07260
90    PSALE=ADMTGF+TSALE /(1.-(RKTAX+RYTXM*(0.5-RKTAX)))                JIM07270
      NPSAL2=NPSAL2+100                                                 JIM07280
      GO TO 49                                                          JIM07290
95    CONTINUE                                                          JIM07300
      CASH=PSALE-ADMTGF                                                 JIM07310
      WRITE(IOUT,500)CASH,PSALE,BASISF,LND,YSALE,GAINR,RCPTR,CPTR,      JIM07320
     1RYTAX,CPTX,GAIN,RKTAX,GANTX,PRFTX,TSALE,GSALE                     JIM07330
500   FORMAT(//' ','GAINS TAX CALCULATION:'/                            JIM07340
     1'  CASH FROM SALE= 'F12.2/'  SALE PRICE,'F12.2', LESS BASIS,'F12.2JIM07350
     2' LESS LAND,'                                                     JIM07360
     3F12.2' = TAXABLE GAIN,'F12.2/' ','GAIN SUBJ TO RECAPTURE,'F12.2   JIM07370
     4' TIMES RECAPTURE FRACTION,'F12.2 ' = GAIN RECAPTURED,'F12.2/     JIM07380
     5' ','TIMES INCOME TAX RATE,'F6.2' = RECAPTURE TAX,'F12.2/         JIM07390
     6' ','GAIN AS CAPITAL GAIN= 'F12.2' TIMES CAPITAL GAINS TAX RATE,' JIM07400
     7F6.2'= CAPITAL GAINS TAX,'F12.2/' ','PREF TAX=MIN TAX*(0.5*CAP GAIJIM07410
     XN -REGULAR SALE TAXES)='F12.2,5X'TOTAL TAXES ON SALE= 'F12.2/     JIM07420
     8' ','AFTER TAX GAIN FROM SALE= CASH LESS TAX= 'F12.2)             JIM07430
      RETURN                                                            JIM07440
      END                                                               JIM07450
                                                                        JIM07460
                                                                        JIM07470
      SUBROUTINE RECAP(NRCPR,ITD,RCPTR,*,*)                             JIM07480
C  CCMPUTES RECAPTURE FACTORS FOR SUBROUTINE SALE                        JIM07490
      IF(ITD-12) 10,10,20                                               JIM07500
 10   RETURN 2                                                          JIM07510
C   OLD RECAPTURE RULES FOR NEW CONSTRUCTION UNDER 236 OR 221.D.3        JIM07520
C   CTHERWISE USE RECAPTURE RELIEF ONLY AFTER 100 MONTHS                 JIM07530
 20   IF(ITD-NRCPR)25,25,30                                             JIM07540
 25   RCPTR=1.                                                          JIM07550
      RETURN 1                                                          JIM07560
30    IF(ITD-(100+NRCPR)) 35,35,40                                      JIM07570
35    RCPTR=1.-.01*(ITD-NRCPR)                                          JIM07580
      RETURN 1                                                          JIM07590
 40   RCPTR=0.                                                          JIM07600
      RETURN 1                                                          JIM07610
      END                                                               JIM07620
                                                                        JIM07630
                                                                        JIM07640
      SUBROUTINE IRATE(BASISI,GSALE,AMORT,ATAX,TST1,NLOOP,ADEPR,XTAX,   JIM07650
     1XDEPR,BASISO,ACAPN)                                               JIM07660
C  COMPUTES ANNUAL AFTER-TAX RETURN, TAX SINKING FUND, INVESTM'T INDICESJIM07670
                                                                        JIM07680
      COMMON BCSTC,TDEV,RIFIN,RRETD,RMRT,RPROF,RRET,RIMTG,TMTG,RBFE,    JIM07690
     1NY,RELEQ,MRT,PRFIT,TACST,CTRM,PSALE,BTRN,ABTRN,ARETN(60),RRTN(60),JIM07700
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FILE: TAXCST FORTRAN P1 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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     2RTNAV,RTNAF,BNPV,AVDBN,ICSTG,ACAPM,CSTGM,ACAPI,ICSUB                JIM07710
     3,RRIT,FXNPV,CNPAY,BRPLC,BCSTS,EQUTY,BDCST,LND,BCSTR,INUR,NRCPR,     JIM07720
     4RRATE,NYF,ARET(60),BSRA,EXCES,NPSAL,WC,BWC,BCCST,NU,BPV,TRET(60)    JIM07730
     5,BFE,ICC,NDV,NYA,IFUND,CNPYS,CTRMS,CRNTM,CRNTB,IOUT,DYRS,RFUND      JIM07740
     6,RYTAX,RKTAX,RYTXM,SIZE,VAC,ISYND,DPV(60),DPVF(60),SRETN,SRET,NCAPJIM07750
      DATA TSUM/0.0/                                                      JIM07760
      REAL MRT,LND                                                        JIM07770
      DIMENSION R(20),DR(20),XNPV(20),DNPV(20),ATAX(60),DPVDR(20)         JIM07780
     1,ACAPV(20),AMORT(60),ADEPR(60),XTAX(60),XDEPR(60)                   JIM07790
      NDEV=TDEV                                                           JIM07800
                                                                          JIM07810
C     BEFORE TAX RETURN, ANNUAL                                           JIM07820
      BTRN=PRFIT/RELEQ                                                    JIM07830
      SRETN=0.                                                            JIM07840
      IF(ICC-1)4,4,2                                                      JIM07850
2     DO 3 N=1,NDEV                                                       JIM07860
      ARETN(N)=-ATAX(N)                                                   JIM07870
3     RRTN(N)=ARETN(N)/RELEQ                                              JIM07880
4     CONTINUE                                                            JIM07890
      DO 5 N=NDV,NY                                                       JIM07900
      ARETN(N)=PRFIT-ATAX(N)                                              JIM07910
5     RRTN(N)=ARETN(N)/RELEQ                                              JIM07920
      DO 7 N=1,NY                                                         JIM07930
7     DPV(N)=ARETN(N)/(1.+RRATE)**N                                       JIM07940
C      PAYBACK PERIOD                                                     JIM07950
C                                                                         JIM07960
      DUM=0.                                                              JIM07970
      DO 10 N=1,NY                                                        JIM07980
      NP=N                                                                JIM07990
      DUM=DUM+ARETN(N)                                                    JIM08000
      IF(RELEQ-DUM) 20,20,10                                              JIM08010
 10   CONTINUE                                                            JIM08020
20    CONTINUE                                                            JIM08030
C     COMPUTATICN OF TAX FUND FROM ANNUAL RETURNS INVESTED AT RFUND       JIM08040
C                                                                         JIM08050
      DO 25 N=1,NY                                                        JIM08060
      ARET(N)=ARETN(N)                                                    JIM08070
25    CONTINUE                                                            JIM08080
      GSAL1=GSALE                                                         JIM08090
      TSUM=0.                                                             JIM08100
      GO TO (59,28,28),IFUND                                              JIM08110
28    IF(GSALE)29,59,59                                                   JIM08120
29    NT=NY                                                               JIM08130
      TRET(NY)=ARET(NY)                                                   JIM08140
      TSUM=ARET(NY)                                                       JIM08150
      IT=1                                                                JIM08160
      IF (TSUM+GSALE) 30,50,45                                            JIM08170
                                                                          JIM08180
30    DO 35 IT=2,NY                                                       JIM08190
      NT=NY-(IT-1)                                                        JIM08200
      TRET(NT)=ARET(NT)*(1.+RFUND)**(IT-1)                                JIM08210
      TSUM=TSUM+TRET(NT)                                                  JIM08220
      IF(TSUM+GSALE)35,50,45                                              JIM08230
35    CONTINUE                                                            JIM08240
45    XSUM=TSUM+GSALE                                                     JIM08250
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      IF (XSUM) 444,50,46                                                JIM08260
46    IF(IT-1)48,48,47                                                   JIM08270
47    XARET=XSUM/(1.+RFUND)**(IT-1)                                      JIM08280
      GO TO 49                                                           JIM08290
48    XARET=XSUM                                                         JIM08300
49    ARET(NT)=XARET                                                     JIM08310
      TFNDNT=ARETN(NT)-ARET(NT)                                          JIM08320
      DTPV=XARET/(1.+RRATE)**NT                                          JIM08330
      TRET(NT)=TRET(NT)-XSUM                                             JIM08340
      GO TO 51                                                           JIM08350
50    ARET(NT)=0.                                                        JIM08360
51    NTP=NT+1                                                           JIM08370
C  HAVING TAKEN CARE OF NEGATIVE PROCEEDS AT SALE, SET GSALE=0. AND      JIM08380
C  USE GSAL1 IN CALCULATIONS WHICH IGNORE TAX FUND                       JIM08390
      GSALE=0.                                                           JIM08400
      IF(NTP-NY) 54,54,56                                                JIM08410
54    DO 55 N=NTP,NY                                                     JIM08420
55    ARET(N)=0.                                                         JIM08430
56    NTT=NT-1                                                           JIM08440
      IF(NTT)580,580,57                                                  JIM08450
57    DO 58 N=1,NTT                                                      JIM08460
58    TRET(N)=0.                                                         JIM08470
      GO TO 580                                                          JIM08480
59    CONTINUE                                                           JIM08490
      NT=NY                                                              JIM08500
      NTP=NY                                                             JIM08510
      TFNDNT=0.                                                          JIM08520
      TRET(NT)=0.                                                        JIM08530
580   CONTINUE                                                           JIM08540
C     PRESENT VALUE                                                      JIM08550
      NN=NY-1                                                            JIM08560
      BNPV=0.                                                            JIM08570
      BPV=0.                                                             JIM08580
      DO 60 N=1,NN                                                       JIM08590
60    BNPV=BNPV+ARETN(N)/(1.+RRATE)**N                                   JIM08600
62    BNPV=BNPV+(ARETN(NY)+GSAL1)/(1.+RRATE)**NY                         JIM08610
      DO 64 N=1,NY                                                       JIM08620
      DPVF(N)=ARET(N)/(1.+RRATE)**N                                      JIM08630
64    BPV=BPV+DPVF(N)                                                    JIM08640
      BPVSAL=GSALE/(1.+RRATE)**NY                                        JIM08650
      BPV=BPV+BPVSAL                                                     JIM08660
      ACAPT=BPV                                                          JIM08670
      BASISO=BASISI                                                      JIM08680
C  FOR THE LAST YEAR COMPUTE PHASED CAPITAL CONTRIBUTIONS                JIM08690
C  AND ADD TO DEPRECIABLE BASIS                                          JIM08700
      GO TO (665,590,710),ISYND                                          JIM08710
590   IF(TST1)650,600,710                                                JIM08720
C  THIS IS FOR FIRST PASS AT CALCULATION FOR LAST YEAR                   JIM08730
600   NLOOP=1                                                            JIM08740
      FCAP=RRATE/(RRATE+1.-1./((1.+RRATE)**(NCAP-1)))                    JIM08750
      ACAPT=NCAP*FCAP*BPV                                                JIM08760
      IF(INUR.NE.3)GO TO 602                                             JIM08770
C  ESTIMATE FOR REHAB STEPPED UP BASIS                                   JIM08780
      TFACT=1.                                                           JIM08790
      IF(GSAL1.GE.0)TFACT=0.                                             JIM08800
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      FRET=(1.-1./(1.+RRATE)**(NY-NDEV))/(RRATE*(1.+RRATE)**TDEV)+      JIMC8810
     1TFACT*(IFUND-1)*(1./(1.+RFUND)-1./(1.+RRATE))/(1+RRATE)**(NT-NDEV JIM08820
     2)                                                                 JIMC8830
      FTAX=0.2*RYTAX-0.2*RYTXM+RYTXM/DYRS                               JIM08840
C  IF ACAPI WAS INPUT AS 0., THEN IT WILL HAVE BEEN SET = RELEQ IN SUBR JIM08850
C TAXES, THUS BASIS(1) INCLUDES CORRECT ACAPI                           JIM08860
      BASISI=BASISI+(ACAPT-ACAPI)/(1.-NCAP*FCAP*FRET*FTAX)              JIMC8870
      GO TO 710                                                         JIM08880
C  ESTIMATE FOR STEPPED UP BASIS (EXCEPT FOR REHAB)                     JIMC8890
602   BASISI=BASISI+(ACAPT-ACAPI)/(1.-ACAPT/BASISI)                     JIMC8900
      GO TO 710                                                         JIMC8910
650   IF(NLOOP.GE.6)TST1=TST1-1.                                        JIMC8920
660   TST1=TST1+1.                                                      JIMC8930
      NLOOP=NLOOP+1                                                     JIMC8940
665   IF(ISYND.EQ.1.AND.TST1.GT.0.)GO TO 710                            JIMC8950
      ACAPN=BPV*RRATE/(RRATE+1.-1./((1.+RRATE)**(NCAP-1)))              JIMC8960
      ACAPT=NCAP*ACAPN                                                  JIM08970
      ACAPTM=ACAPT/MRT                                                  JIMC8980
      ACAPS=0.                                                          JIMC8990
      ACAPV(1)=ACAPN                                                    JIM09000
      DO 67 N=1,NCAP                                                    JIM09010
      ACAPV(N)=ACAPN/(1.+RRATE)**(N-1)                                  JIMC9020
67    ACAPS=ACAPS+ACAPV(N)                                              JIM09030
         IF(ISYND.EQ.1)GO TO 710                                        JIM09040
C  STEPPED UP BASIS ADDS CAP CONTRIB (TOTAL PHASED) TO MTG              JIM09050
C  LESS LAND AND ANY ITEMS EXPENSED DURING DEVELOPMENT                  JIM09060
      BASIST=MRT+ACAPT-LND-BCCST*(ICC-1)                                JIM09070
      TB=BASISI-BASIST                                                  JIMC9080
      BASISO=BASISI                                                     JIM09090
      BASISI=BASIST                                                     JIMC9100
      TBR=TB/BASISI                                                     JIMC9110
      IF(.001-ABS(TBR))700,700,670                                      JIMC9120
670   TST1=TST1-1.                                                      JIMC9130
700   IF(TST1.EQ.0.)GO TO 555                                           JIM09140
710   CONTINUE                                                          JIMC9150
C     CALCULATE ANNUAL CONTRIBUTION (CASH, BEFORE TAX) TO PULL          JIM09160
C     INTERNAL RATE OF RETURN DOWN TO RRATE (DEV. DISC. RATE)           JIM09170
      IF(BNPV-RELEQ)70,70,68                                            JIM09180
C     GROSS AFTER TAX RETURNS USED                                      JIM09190
68    ANRPA=((BNPV-RELEQ)*RRATE/(1.-(1.+RRATE)**(-NY)))/RYTAX           JIM09200
69    GO TO 71                                                          JIM09210
70    ANRPA=0.0                                                         JIM09220
71    IF(BPV-RELEQ)75,75,73                                             JIM09230
C     RETURNS USED ARE NET AFTER TAX AND TAX FUND                       JIM09240
73    ARPA=((BPV-RELEQ)*RRATE/(1.-(1.+RRATE)**(-NY)))/RYTAX             JIM09250
      GO TO 76                                                          JIM09260
75    ARPA=0.0                                                          JIMC9270
76    CONTINUE                                                          JIMC9280
C     AVERAGE RATE ,DISCOUNTED                                          JIM09290
      IF(RELEQ.EQ.0)  GO TO 98                                          JIM09300
      AVDRN=BPV/RELEQ                                                   JIM09310
C     INTERNAL RATE OF RETURN AFTER TAX FUND IS TAKEN FROM RETURNS      JIM09320
C      ONLY POSITIVE RETURNS ARE USED IN COMPUTATIONS                   JIM09330
      R(1)=RRATE                                                        JIMC9340
      XNPV(1)=BPV-RELEQ                                                 JIM09350
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      IF(XNPV(1))77,78,78                                              JIM09360
77    DR(1)=-0.1                                                       JIM09370
      GO TO 79                                                         JIM09380
78    DR(1)=0.2                                                        JIM09390
C  CONSTANTS ADDED TO AVOID ZERO DENOMINATORS                          JIM09400
79    DNPV(1)=-XNPV(1)+.000001                                         JIM09410
      DO 86 I=2,20                                                     JIM09420
      NI=I                                                             JIM09430
      DR(I)=(-XNPV(I-1)*DR(I-1))/DNPV(I-1)+.000001                     JIM09440
      R(I)=R(I-1)+DR(I)                                                JIM09450
      IF(R(I).GE.10.)GO TO 87                                          JIM09460
80    XNPV(I)=0.                                                       JIM09470
      NN=NY-1                                                          JIM09480
      DO 82 N=1,NN                                                     JIM09490
 82   XNPV(I)=XNPV(I)+ARET(N)/(1.+R(I))**N                             JIM09500
84    XNPV(I)=XNPV(I)+(ARET(NY)+GSALE)/((1.+R(I))**NY)-RELEQ           JIM09510
      DNPV(I)=XNPV(I)-XNPV(I-1)+.000001                                JIM09520
      IF(.005-ABS(DR(I)))  86,85,85                                    JIM09530
85    IF(.005-ABS(XNPV(I)/RELEQ))86,86,87                              JIM09540
86    DPVDR(I)=DNPV(I)/DR(I)                                           JIM09550
87    RRIT=R(I)                                                        JIM09560
      FXNPV=XNPV(I)                                                    JIM09570
      SRET=0.                                                          JIM09580
      SRETN=0.                                                         JIM09590
      DO 95 N=1,NY                                                     JIM09600
      SRETN=SRETN+ARETN(N)                                             JIM09610
95    SRET=SRET+ARET(N)                                                JIM09620
C  PRESENT VALUE AS A PERCENTAGE OF THE MORTGAGE AMOUNT                JIM09630
      RPV=BPV/MRT                                                      JIM09640
      RNPV=BNPV/MRT                                                    JIM09650
C    AVERAGE ANNUAL RATE BEFORE TAX FUND IS WITHDRAWN FROM RETURNS     JIM09660
C  CONSISTENCY REQUIRES:  1) FOR DEVELOPER-HELD PROJECT SET RELEQ FINITEJIM09670
C  AND ACAPI=0 OR THE SAME VALUE AS RELEQ, 2) FOR INVESTOR-HELD SET    JIM09680
C  RELEQ=PRES VALUE AND ACAPI=TOTAL CAPITAL CONTRIBUTIONS              JIM09690
      RTNAV=(SRETN+GSAL1-ACAPI)/(NY*ACAPI)                             JIM09700
C  AVERAGE RATE OF RETURN AFTER TAX FUND                               JIM09710
      RTNAF=(SRET+GSALE-ACAPI)/(NY*ACAPI)                              JIM09720
98    GSALE=GSAL1                                                      JIM09730
      FDVPV=BPV-RELEQ                                                  JIM09740
      FDVT=ACAPT-RELEQ                                                 JIM09750
      FDPVM=FDVPV/MRT                                                  JIM09760
      FDVTM=FDVT/MRT                                                   JIM09770
C  INVESTMENT RESULTS                                                  JIM09780
110   WRITE(IOUT,111)NP,NI,RRIT,FXNPV,BPV,RPV,BNPV,RNPV                JIM09790
     1,ANRPA,ARPA,BASISI,FDVPV,FDPVM                                   JIM09800
111   FORMAT(//1X,'PAYBACK PERIOD  ',I2,2X,'ITER NUM ',I2,2X,'RATE',   JIM09810
     11X,F6.4,2X,'RESID XNPV',F6.2,'  PV AT RRATE= 'F10.2,8X,'PV/MRT= ' JIM09820
     X,F6.4,                                                           JIM09830
     2/' ','PV (NO FUND)= 'F10.2,2X'PV/MRT (NO FUND)= '                JIM09840
     3F6.4/'  CONTRIB. TO RED RETN. TO RRATE;  W/O TAX FUND= 'F10.2,5X JIM09850
     4,'    W/TAX FUND= 'F10.2/'   STEPPED-UP BASIS= 'F10.2,2X,        JIM09860
     5'PV OF DEVELOPER FEE='F10.2,'  PV OF DEVELOPER FEE/MRT='F6.4)    JIM09870
      IF(GSALE)221,221,333                                             JIM09880
221   WRITE(IOUT,222)NT,XARET,RFUND,DTPV                               JIM09890
222   FORMAT(//'  TAX FUND STARTED IN YR 'I2,5X,'  RETURN NOT REQD FOR  JIM09900
```

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     1FUND IN FIRST YEAR OF TAX FUND= 'F10.2/2X'TAX FUND INTEREST RATE= JIM09910
     2 'F4.2'  PV OF RETN NOT REQD 1ST YR= 'F12.2/)                     JIM09920
      WRITE(IOUT,332) (N,TRET(N),N=NT,NY)                               JIM09930
332   FORMAT(2X,'YR  ACCUM VAL,TAX FND',5X,/4(2X,I2,3X,F10.2,5X))       JIM09940
C  CASH FLOW SUMMARY                                                    JIM09950
333   IF(NYF-NY)555,334,555                                             JIM09960
334   WRITE(IOUT,2000)                                                  JIM09970
2000  FORMAT(//'1'1X,'CASH FLOW:  (PROFIT=RPROF*IMPLIED EQUITY)'/       JIM09980
     1' ',2X,'YR  AMORTIZATION  DEPRECIATION  TAXABLE INC.  EXCESS DEPR.JIM09990
     2  INCOME TAX  AFTER TAX RETURN')                                 JIM10000
      WRITE(IOUT,2001) (N,AMORT(N),ADEPR(N),XTAX(N),XDEPR(N),ATAX(N),   JIM10010
     1ARETN(N),N=1,NY)                                                 JIM10020
2001  FORMAT(2X,I2,6F14.2)                                              JIM10030
      WRITE(IOUT,2010)                                                  JIM10040
2010  FORMAT(/2X'RETURNS AND TAX FUND'/2X'YR AFTER TAX RET DISC PRES VALJIM10050
     1 TAX SINKG FND TAX FUND W/INTEREST')                             JIM10060
      WRITE(IOUT,2011) (N,ARET(N),DPVF(N),N=1,NT)                       JIM10070
2011  FORMAT(2X,I2,2F14.2)                                              JIM10080
      WRITE(IOUT,2012)TFNDNT,TRET(NT)                                   JIM10090
2012  FORMAT('+',31X,2F14.2)                                            JIM10100
      IF(NTP.GT.NY)GO TO 2014                                           JIM10110
      WRITE(IOUT,2013) (N,ARETN(N),TRET(N),N=NTP,NY)                    JIM10120
2013  FORMAT(2X,I2,28X,2F14.2)                                          JIM10130
2014  IF(NLOOP.EQ.1.AND.ISYND.EQ.2)GO TO 555                            JIM10140
      WRITE(IOUT,339)                                                   JIM10150
339   FORMAT(//2X'SYNDICATION PAYMENTS:  '/4(2X,'PAYM.',4X,'DISC, PRES. JIM10160
     1VAL.'))                                                          JIM10170
      WRITE(IOUT,340) (N,ACAPV(N),N=1,NCAP)                             JIM10180
340   FORMAT(4(2X,I2,10X,F12.2,1X))                                     JIM10190
      WRITE(IOUT,341)ACAPS                                              JIM10200
341   FORMAT(2X'TOTAL PV OF CAP CONTRIB= 'F12.2)                        JIM10210
      WRITE(IOUT,345)NCAP,ACAPN,ACAPT,ACAPTM,FDVT,FDVTM                 JIM10220
345   FORMAT(' 'I2'PAYMENTS OF'F10.2'=TOT CAP CONTRIB= 'F10.2,10X 'TOT CJIM10230
     1AP CONTR/MRT= 'F6.4/                                             JIM10240
     1' ','TOTAL DEV FEE=TOT CAP CONTRIB-RELEQ='F10.2,'  TOT DEV FEE/MRTJIM10250
     2='F6.4/)                                                         JIM10260
      WRITE(IOUT,342)NLOOP                                              JIM10270
342   FORMAT(' ','NO OF STEP UP LOOPS CALCULATED= 'I2)                  JIM10280
      GO TO 555                                                         JIM10290
444   WRITE(IOUT,445)                                                   JIM10300
445   FORMAT(//' LOUSY DEAL, RETURNS INSUFFICIENT TO PAY TAXES AND MORTGJIM10310
     1AGE AT SALE, EVEN WHEN THEY ARE ALL COMMITTED')                  JIM10320
555   CONTINUE                                                          JIM10330
      RETURN                                                            JIM10340
      END                                                               JIM10350
                                                                        JIM10360
                                                                        JIM10370
                                                                        JIM10380
      SUBROUTINE COSTG(RDG,ADEPR,XDEPR,BASISO,TSALE,GANTX,CPTX,PRFTX,ACAJIM10390
     1PN,ATAX)                                                          JIM10400
C  COMPUTES PRESENT VALUE OF FEDERAL REVENUE LOSSES AND GAINS,         JIM10410
C  R E TAX ABATEMENT, INTEREST SUBSIDY                                 JIM10420
      COMMON BCSTC,TDEV,RIFIN,RRETD,RMRT,RPROF,RRET,RIMTG,TMTG,RBFE,    JIM10430
     1NY,RELEQ,MRT,PRFIT,TACST,CTRM,PSALE,BTRN,ABTEN,ARETN(60),RRTN(60),JIM10440
     2RTNAV,RTNAF,BNEV,AVDRN,ICSTG,ACAPM,CSTGM,ACAPI,ICSUB              JIM10450
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     3,RRIT,GXNPV,CNPAY,BRPLC,BCSTS,EQUTY,BDCST,LND,BCSTR,INUR,NRCPR     JIM10460
     4,RRATE,NYF,ARET(60),BSRA,EXCES,NPSAL,WC,BWC,BCCST,NU,BPV,TRET(60) JIM10470
     5,BFE,ICC,NDV,NYA,IFUND,CNPYS,CTRMS,CRNTM,CRNTB,ICUT,DYRS,RFUND     JIM10480
     6,RYTAX,RKTAX,RYTXM,SIZE,VAC,ISYND,DPV(60),DPVF(60),SRETN,SRET,NCAPJIM10490
                                                                         JIM10500
      DIMENSION ADEPR(60),XDEPR(60),ASUB(60),ASUBD(60),ACTL(5),ACTLD(5),JIM10510
     1ASLTL(60),ASLTLD(60),ADTL(60),ADTLD(60),AEDL(60),AEDLD(60),ACAPG(1JIM10520
     20),ATAX(60),ATAXD(60),DCAPG(10)                                    JIM10530
      REAL MRT,LND                                                       JIM10540
      DATA NSUB/10/,RRETF/.25/,NMTGP/1/                                  JIM10550
      TCTLD=0.                                                           JIM10560
      TSLTLD=0.                                                          JIM10570
      TEDLD=0.                                                           JIM10580
      TDTLD=0.                                                           JIM10590
      NDEV=TDEV                                                          JIM10600
C  PRESENT VALUE OF INTEREST SUBSIDY OVER HOLDING PERIOD                 JIM10610
      AIS=CNPAY-CNPYS                                                    JIM10620
      TISD=AIS*(1.-(1.+RDG/NMTGP)**(-(NY-NDEV)*NMTGP))/RDG              JIM10630
      TISDF=TISD/(1.+RDG)**NDEV                                          JIM10640
C  PRESENT VALUE OF PHASED INTEREST SUBSIDY WITH TENANT INCOMES FULLY    JIM10650
C  "TURNED UP" IN NSUB YEARS                                             JIM10660
      TPISD=0.                                                           JIM10670
      NSB=NSUB+NDEV                                                      JIM10680
      TSUB=NSUB                                                          JIM10690
      DO 10 N=NDV,NSB                                                    JIM10700
      ASUB(N)=AIS*(1.-(N-NDV)/TSUB)                                      JIM10710
      ASUBD(N)=ASUB(N)/(1.+RDG)**(N-NDEV)                                JIM10720
10    TPISD=TPISD+ASUBD(N)                                               JIM10730
      TPISDF=TPISD/(1.+RDG)**NDEV                                        JIM10740
C  REAL ESTATE TAX ABATEMENT, DIFFERENCE BETWEEN FULL AND ACTUAL RATE ONJIM10750
C  BASIC RENT                                                            JIM10760
      ARTA=TACST*(RRETF-RRET)                                            JIM10770
      ARTAD=ARTA*(1.-(1.+RDG)**(-(NY-NDEV)))/RDG                         JIM10780
      ARTADF=ARTAD/(1.+RDG)**NDEV                                        JIM10790
C  REVENUE FOREGONE FROM CONSTRUCTION EXPENSE ALLOWANCES                 JIM10800
      IF(ICC-1)25,25,20                                                  JIM10810
20    IF(NDEV.EQ.0)GO TO 25                                              JIM10820
      DO 21 N=1,NDEV                                                     JIM10830
      ACTL(N)=(BCCST/TDEV)*RYTAX                                         JIM10840
      ACTLD(N)=ACTL(N)/(1.+RDG)**N                                       JIM10850
21    TCTLD=TCTLD+ACTLD(N)                                               JIM10860
      TCLDF=TCTLD                                                        JIM10870
C  NORMAL DEPRECIATION LOSSES(STRAIGHT LINE                              JIM10880
25    DO 30 N=NDV,NY                                                     JIM10890
      ASLTL(N)=(BASISC/DYRS)*RYTAX                                       JIM10900
      ASLTLD(N)=ASLTL(N)/(1.+RDG)**(N-NDEV)                              JIM10910
30    TSLTLD=TSLTLD+ASLTLD(N)                                            JIM10920
      TSLTLF=TSLTLD/(1.+RDG)**NDEV                                       JIM10930
C  OPERATING TAXES, DISCOUNTED FOR COST TO GOVT                          JIM10940
      TTAXD=0.                                                           JIM10950
      DO 45 N=1,NY                                                       JIM10960
      ATAXD(N)=-ATAX(N)/(1.+RDG)**(N-NDEV)                               JIM10970
45    TTAXD=TTAXD+ATAXD(N)                                               JIM10980
      TTAXDF=TTAXD/(1.+RDG)**NDEV                                        JIM10990
C  ACTUAL DEPRECIATION LOSSES (69 TAX REFORM ACT)                        JIM11000
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      DO 40 N=NDV,NY                                                    JIM11010
      ADTL(N)=ADEPR(N)*RYTAX-XDEPR(N)*RYTXM                             JIM11020
      ADTLD(N)=ADTL(N)/(1.+RDG)**(N-NDEV)                               JIM11030
40    TDTLD=TDTLD+ADTLD(N)                                              JIM11040
      TDTLDF=TDTLD/(1.+RDG)**NDEV                                       JIM11050
C  EXCESS DEPRECIATION LOSSES (OVER STRAIGHT LINE)                      JIM11060
      DO 60 N=NDV,NY                                                    JIM11070
      AEDL(N)=ADTL(N)-ASLTL(N)                                          JIM11080
      AEDLD(N)=AEDL(N)/(1.+RDG)**(N-NDEV)                               JIM11090
60    TEDLD=TEDLD+AEDLD(N)                                              JIM11100
      TEDLDF=TEDLD/(1.+RDG)**NDEV                                       JIM11110
C  TAXES RECOVERED AT SALE:                                             JIM11120
C  CAPITAL GAINS TAX FOR STRAIGHT LINE DEPRECIATION ONLY                JIM11130
      GAINSL=PSALE-(1.-(NY-NDEV)/DYRS)*BASISO-LND                       JIM11140
      GTXSL=RKTAX*GAINSL                                                JIM11150
      TOSSL=GTXSL                                                       JIM11160
      TOSSLD=TCSSL/(1.+RDG)**(NY-NDEV)                                  JIM11170
      TSSLDF=TOSSLD/(1.+RDG)**NDEV                                      JIM11180
C  RECOVERY FOR 69 TAX LAW                                              JIM11190
C  CAPITAL GAINS                                                        JIM11200
      GANTXD=GANTX/(1.+RDG)**(NY-NDEV)                                  JIM11210
      GNTXDF=GANTXD/(1.+RDG)**NDEV                                      JIM11220
C  RECAPTURE TAX                                                        JIM11230
      CPTXD=CPTX/(1.+RDG)**(NY-NDEV)                                    JIM11240
      CPTXDF=CPTXD/(1.+RDG)**NDEV                                       JIM11250
C  TAX ON PREFERENCE INCOME (EXCLUDED CAPITAL GAINS)                    JIM11260
      PRFTXD=PRFTX/(1.+RDG)**(NY-NDEV)                                  JIM11270
      PFTXDF=PRFTXD/(1.+RDG)**NDEV                                      JIM11280
C  TOTAL TAX                                                            JIM11290
      TOS=TSALE                                                         JIM11300
      TOSD=TSALE/(1.+RDG)**(NY-NDEV)                                    JIM11310
      TOSDF=TOSD/(1.+RDG)**NDEV                                         JIM11320
C  NET REVENUE COST TO GOVERNMENT                                       JIM11330
      CSTG=TTAXDF-TOSDF                                                 JIM11340
      CSTGR=CSTG/MRT                                                    JIM11350
      ACAPGS=0.                                                         JIM11360
      DCAPGS=0.                                                         JIM11370
C  TO REPLACE ENTIRE PROJ INVESTMENT BYDIRECT PAYMENTS, SET ACAPM=0. IN JIM11380
C  INPUT.  TO MATCH A DESIRED INVESTMENT VALUE,ENTER THE ACAPM TO BE MATJIM11390
C  CHED.  CSTGM REPRESENTS THE COST TO GOVT OF A REFERENCE TREATMENT OF JIM11400
C  A PROJECT, INCLUDING A PARTICULAR DEPRECIATION ALLOWANCE            JIM11410
C  AND AMORTIZATION SCHEDULE, DIVIDEND PAYMENT.                        JIM11420
      IF(ACAPM.EQ.0.)DCAPGS=0.                                          JIM11430
      IF(ACAPM.NE.0.)DCAPN=ACAPM-ACAPN                                  JIM11440
      DO 70 N=1,NCAP                                                    JIM11450
      ACAPG(N)=ACAPN/(1.+RDG)**(N-1)                                    JIM11460
      ACAPGS=ACAPGS+ACAPG(N)                                            JIM11470
      DCAPG(N)=DCAPN/(1.+RDG)**(N-1)                                    JIM11480
70    DCAPGS=DCAPGS+DCAPG(N)                                            JIM11490
      ACPGSM=ACAPGS/MRT                                                 JIM11500
      DCPGSM=DCAPGS/MRT                                                 JIM11510
      IF (CSTGM.EQ.0.)CSTGM=.00001                                      JIM11520
      DCSTG=CSTGM-CSTG                                                  JIM11530
      DCSTGR=DCSTG/CSTGM                                                JIM11540
      DCPGSR=DCAPGS/CSTGM                                               JIM11550
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C  NET SAVING FOR DIRECT PAYMENT, NO DEPRECIATION, NO TAXABLE INCOME     JIM11560
      IF(CSTG.EQ.0.)CSTG=.00001                                          JIM11570
      CDPSAV=CSTG-ACAPGS                                                 JIM11580
      CDPM=CDPSAV/MRT                                                    JIM11590
      CDPR=CDPSAV/CSTG                                                   JIM11600
C  SAVING ON DIRECT FEE FOR INCREMENT TO MATCH                           JIM11610
      DDPSAV=CSTGM-CSTG-DCAPGS                                           JIM11620
      DDPM=DDPSAV/MRT                                                    JIM11630
      DDPR=DDPSAV/CSTGM                                                  JIM11640
C  AMOUNT AVAIL FOR SUBS FROM PROFIT                                     JIM11650
C  VALUE TO GOVERNMENT OF PROFIT (DIVIDEND) OVER PROJECT LIFE            JIM11660
      TPROFD=PRFIT*(1.-(1.+RDG)**(-(NY-NDEV)))/RDG                       JIM11670
      TPRFDF=TPROFD/(1.+RDG)**NDEV                                       JIM11680
C  DISC VAL TO GOVT OF TAX ON DIVIDEND                                   JIM11690
      TPRDFT=TPRFDF*RYTAX                                                JIM11700
C  VALUE TO INVESTOR (BEFORE TAX) OF DIVIDEND OVER PROJECT LIFE          JIM11710
      VPROFD=PRFIT*(1.-(1.+RRATE)**(-(NY-NDEV)))/RRATE                   JIM11720
      VPRFDF=VPROFD/(1.+RRATE)**NDEV                                     JIM11730
C  DISCOUNTED VALUE AFTER TAX                                            JIM11740
      DPVPRF=VPRFDF*(1.-RYTAX)                                           JIM11750
                                                                         JIM11760
C  CHANGE IN CAP CONTRIB IN EXCH FOR DIVIDEND                            JIM11770
      DCAPRF=DPVPRF*ACAPN/BPV                                            JIM11780
C  CHANGE IN GOVT COST TO EXCH DIV FOR CAP CONTRIB DIRECTLY              JIM11790
      DCPGPF=DCAPRF*ACAPGS/ACAPN                                         JIM11800
C  COST OF PAYMENT FROM MORTG WITH ANNUAL SUBSIDY FOR MTG INCREASE       JIM11810
      AMFEE=ACAPGS*(1.+RDG)**NDEV                                        JIM11820
      CNFEE=AMFEE*RIMTG/(1.-1./(1.+RIMTG/NMTGP)**((NY-NDEV)*NMTGP))      JIM11830
      CNFED=CNFEE*(1.-1./(1.+RDG/NMTGP)**((NY-NDEV)*NMTGP))/RDG          JIM11840
      CNFEDF=CNFED/(1.+RDG)**NDEV                                        JIM11850
      CNFDFR=CNFEDF/MRT                                                  JIM11860
C  CHANGE IN  G2VT COST TO EXCH DIV FOR CAP CONT VIA MORTG+SUBS          JIM11870
      DCPMPF=DCPGPF*CNFEDF/ACAPGS                                        JIM11880
C  NET SAVING FOR FEE PAYMENT THROUGH MORTGAGE                           JIM11890
      CMFSAV=CSTG-CNFEDF                                                 JIM11900
      IF(CSTG.EQ.0.)CSTG=.00001                                          JIM11910
      CMFR=CMFSAV/CSTG                                                   JIM11920
C  COST TO GOVT W/ FULL REPL, GOVT GETS DIVIDEND                         JIM11930
C  DIRECT PAYMENT                                                        JIM11940
      CSTGDP=ACAPGS-TPRFDF                                               JIM11950
C  THRU MORTG                                                            JIM11960
      CSTGMG=CNFEDF-TPRFDF                                               JIM11970
C  SAVING FOR FULL REPL, INCL RECOV OF DIVIDEND                          JIM11980
      CDPPSV=CSTG-CSTGDP                                                 JIM11990
      CDPPR=CDPPSV/CSTG                                                  JIM12000
      CMGPSV=CSTG-CSTGMG                                                 JIM12010
      CMGPR=CMGPSV/CSTG                                                  JIM12020
C  GOVT REPL ALL BUT DIVIDEND AFTER TAX                                  JIM12030
      CSTPXD=ACAPGS-(1.-RYTAX)*TPRFDF-DCPGPF                             JIM12040
      CSTPXM=CNFEDF-(1.-RYTAX)*TPRFDF-DCPMPF                             JIM12050
C  SAVING FOR REPL EXCEPT DIVIDEND AFTER TAX                             JIM12060
      CPXDSV=CSTG-CSTPXD                                                 JIM12070
      CPXDR=CPXDSV/CSTG                                                  JIM12080
      CPXMSV=CSTG-CSTPXM                                                 JIM12090
      CPXMR=CPXMSV/CSTG                                                  JIM12100
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C  GOVT REPL ALL BUT TAX FREE DIVIDEND                                    JIM12110
      RYTAXR=RYTAX                                                        JIM12120
      IF(RYTAXR.EQ.0.)RYTAXR=.00001                                       JIM12130
      CSTGPD=ACAPGS-DCPGPF/RYTAXR                                         JIM12140
      CSTGPM=CNFEDF-DCPMPF/RYTAXR                                         JIM12150
C  SAVING FOR REPL ALL BUT TAX FREE DIVIDEND                             JIM12160
      CPDSV=CSTG-CSTGPD                                                   JIM12170
      CPDR=CPDSV/CSTG                                                     JIM12180
      CPMSV=CSTG-CSTGPM                                                   JIM12190
      CPMR=CPMSV/CSTG                                                     JIM12200
C  COST OF PAYM FROM MORTG OF INCREM TO MATCH WITH ANN SUBS TO COVER MTGJIM12210
C  INCREASE; REPAID OVER HOLDING PERIOD, NOT MORTGAGE TERM              JIM12220
      DMFEE=DCAPGS*(1.+RDG)**NDEV                                         JIM12230
      DCNFEE=DMFEE*RIMTG/(1.-1./(1.+RIMTG/NMTGP)**((NY-NDEV)*NMTGP))      JIM12240
      DCNFED=DCNFEE*(1.-1./(1.+RDG/NMTGP)**((NY-NDEV)*NMTGP))/RDG         JIM12250
      DCNFDF=DCNFED/(1.+RDG)**NDEV                                        JIM12260
      DCNFR=DCNFDF/MRT                                                    JIM12270
C  NET SAVING ON DIRECT FEE THRU MRTG FOR INCREMENT TO MATCH             JIM12280
      DMFSAV=CSTGM-CSTG-DCNFDF                                            JIM12290
      DMFM=DMFSAV/MRT                                                     JIM12300
      DMFR=DMFSAV/CSTGM                                                   JIM12310
80    WRITE(IOUT,100)RDG                                                  JIM12320
100   FORMAT('1','COSTS TO GOVERNMENT--REVENUE LOSSES AND GAINS.  DISCOUJIM12330
     1NT RATE='F6.4,/2X,'YR      TAX LOSS    DISC VALUE')                JIM12340
      WRITE(IOUT,110)(N,ACTL(N),ACTLD(N),N=1,NDEV)                        JIM12350
110   FORMAT(2X,I2,2F14.2)                                                JIM12360
      WRITE(IOUT,120)TCTLD                                                JIM12370
120   FORMAT(2X'TOTAL DISCOUNTED VALUE='F12.2)                            JIM12380
      WRITE(IOUT,130)                                                     JIM12390
130   FORMAT(2X'DEPRECIATION LOSSES'/2X,'YR  ACT TAX LOSS   DISC VALUE  JIM12400
     1  SL TAX LOSS    DISC VALUE   EXCESS LOSS    DISC VALUE  DISC ACT JIM12410
     2TAX')                                                               JIM12420
      WRITE(IOUT,140)(N,ADTL(N),ADTLD(N),ASLTL(N),ASLTLD(N),AEDL(N),      JIM12430
     1AEDLD(N),ATAXD(N),N=NDV,NY)                                         JIM12440
140   FORMAT(2X,I2,7F14.2)                                                JIM12450
      WRITE(IOUT,145)TDTLD,TSLTLD,TEDID,TDTLDF,TSLTLF,TEDLDF              JIM12460
145   FORMAT(2X'TOTAL DISCOUNTED VALUE OF LOSSES AT START OF OPERATION:'JIM12470
     1/2X'ACTUAL LOSS='F14.2'STR LINE LOSS='F14.2'EXCESS LOSS='F14.2,     JIM12480
     2/2X'LOSSES DISCOUNTED TO START OF DEVELOPMENT:'/,                   JIM12490
     32X'ACTUAL LOSS='F14.2'STR LINE LOSS='F14.2'EXCESS LOSS='F14.2)      JIM12500
      WRITE(IOUT,150)GANTX,CPTX,PRFTX,TOS,TOSSL,GANTXD,CPTXD,PRFTXD,TOSDJIM12510
     1,TOSSLD,GNTXDF,CPTXDF,PFTXDF,TOSDF,TSSLDF                           JIM12520
150   FORMAT(2X'TAXES RECOVERED AT SALE:'/,                               JIM12530
     12X,'TAX:'16X'CAPITAL GAINS  RECAPTURE TAX PREFERENCE TAX    TOTAL JIM12540
     2 TAX  SL CAP GAIN TAX'/2X'AMOUNT'13X,5F14.2,/2X'DISC VAL'11X,      JIM12550
     35F14.2,/2X'DISC VAL AT START  '5F14.2)                             JIM12560
      WRITE(IOUT,160)CSTG,CSTGR                                           JIM12570
160   FORMAT(//2X,'NET REVENUE COST TO FEDERAL GOVERNMENT'                JIM12580
     1/2X'TAX LOSS LESS TAXES AT SALE, DISCOUNTED TO START OF DEVELOPMENJIM12590
     2T'/2X'ACTUAL TOTAL ='18X,F12.2,6X,'RATIO TO MTG='F6.4)             JIM12600
      WRITE(IOUT,170)ACAPGS,ACPGSM,CDPSAV,CDPR                            JIM12610
170   FORMAT(2X'PRESENT COST FOR DIRECT PAYMENT='F12.2,6X'RATIO TO MTG='JIM12620
     1F6.4,/2X'NET SAVING FROM DIRECT PAYMENT= 'F12.2,6X,'RATIO TO ORIG JIM12630
     2 CST='F6.4)                                                        JIM12640
      WRITE(IOUT,175)AMFEE,CNFEE,CNFED,CNFEDF,CNFDFR,CMFSAV,CMFR          JIM12650
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175   FORMAT(/2X,'MORTGAGE INCREASE TO PAY DEVFEE='F12.2,1X                JIM12660
     1'ANN SUBS TO COVER='F12.2,6X,'DISC COST='F12.2/                      JIM12670
     22X,'PRESENT COST FOR MTG FEE SUBS=  'F12.2,6X,'RATIO TO MTG='       JIM12680
     3F12.4/2X'NET SAVING FROM PAYM VIA MORTG ='F12.2,6X,'RATIO TO ORIG   JIM12690
     4 COST='F12.4)                                                       JIM12700
      WRITE(IOUT,185)PRFIT,TPROFD,TPRFDF,TPRDFT,VPROFD,VPRFDF,DPVPRF,DCAJIM12710
     1PRF,DCPGPF,DCPMPF                                                   JIM12720
185   FORMAT(/2X'SUBSIDY AVAIL FROM PROF='F12.2/                           JIM12730
     12X'DISCOUNTED TOTAL SUBSID='F12.2/2X'DISCOUNTED VAL AT START='F12.JIM12740
     X2,8X,'DISC VAL OF TAX='F12.2                                        JIM12750
     2/2X'VALUE OF PROF TO INVSTR='F12.2/2X'DISCOUNTED VAL AT START='     JIM12760
     3F12.2/2X'DISCTD VALUE AFTER TAX ='F12.2/                            JIM12770
     42X'CAPITAL CONTR FOR PROF ='F12.2,/2X'CHANGE IN GOVT COST TO EXCH   JIM12780
     5 PROF FOR CAP CONTRIB DIRECTLY='F12.2/51X'THRU MTG='F12.2//)        JIM12790
      WRITE(IOUT,186)CSTGDP,CDPPSV,CDPPR,CSTGMG,CMGPSV,CMGPR,CSTPXD,CPXDJIM12800
     1SV,CPXDR,CSTPXM,CPXMSV,CPXMR,CSTGPD,CPDSV,CPDR,CSTGPM,CPMSV,CPMR    JIM12810
186   FORMAT(/'1'1X'COSTS TO GOVT CONSIDERING DIVIDEND:'                   JIM12820
     1/2X'GOVT KEEPS DIV, FULL REPL, DIR PAYM'F12.2/19X'RED FROM ORIG COJIM12830
     2ST'F12.2/19X'RATIO TO ORIG COST'F14.4/27X'THRU MORTG'F12.2          JIM12840
     3/19X'RED FROM ORIG COST'F12.2/19X'RATIO TO ORIG COST'F14.4          JIM12850
     4//2X'DIV AFT TAX TO OWNER, BAL DIR PAYM'F13.2/19X'RED FROM ORIG COJIM12860
     5ST'F12.2/19X'RATIO TO ORIG COST'F14.4/27X'THRU MORTG'F12.2          JIM12870
     6/19X'RED FROM ORIG COST'F12.2/19X'RATIO TO ORIG COST'F14.4          JIM12880
     7//2X'TAX-FREE DIV TO OWNR, BAL DIR PAYM'F13.2/19X'RED FROM ORIG COJIM12890
     8ST'F12.2/19X'RATIO TO ORIG COST'F14.4/27X'THRU MORTG'F12.2/19X'REDJIM12900
     9 FROM ORIG COST'F12.2/19X'RATIO TO ORIG COST'F14.4)                 JIM12910
      WRITE(IOUT,176)CSTGM,DCSTG,DCSTGR,ACAPM,DCAPN,DCAPGS,DCPGSM,DDPSAVJIM12920
     1,DDPR                                                               JIM12930
176   FORMAT(/2X'GOVT COST IN COMPARISON CASE='F12.2,5X'COST DIFF='        JIM12940
     XF12.2,5X'RATIO TO COMP COSTS='F6.4/                                 JIM12950
     12X'GOVT PAYM TO MAKE UP DIFF BETWEEN COMPARISON CASE AND PRESENT:'JIM12960
     2/2X'ANN PAYM MATCHED='F14.2,'ANN INCREM PAID='F14.2/                JIM12970
     32X,'PRESENT COST FOR DIRECT PAYMENT='F12.2,6X,'RATIO TO MTG='F6.4 JIM12980
     4/2X'NET SAVING FROM DIRECT PAYMENT ='F12.2,6X,'RATIO TO COMP COST=JIM12990
     5'F6.4)                                                              JIM13000
      WRITE(IOUT,177)DMFEE,DCNFEE,DCNFED,DCNFDF,DCNFR,DMFSAV,DMFR         JIM13010
177   FORMAT(2X,'MORTGAGE INCREASE TO PAY FEEINC='F12.2,1X,                JIM13020
     1'ANN SUBS TO COVER='F12.2,6X,'DISC COST='F12.2/                      JIM13030
     22X,'PRESENT COST FOR MTG FEE INCR=  'F12.2,6X,'RATIO TO MTG='F6.4,JIM13040
     3/2X,'NET SAVING FOR INCR VIA MTG='3X,F12.2,6X,'RATIO TO COMP COST=JIM13050
     4'F6.4)                                                              JIM13060
      WRITE(IOUT,180)AIS,TISD,TISDF                                       JIM13070
180   FORMAT(//2X'FEDERAL INTEREST SUBSIDY'/2X'ANNUAL INTEREST SUBSIDY='JIM13080
     1F12.2,/2X'DISCOUNTED TOTAL SUBSID='F12.2,/2X,'DISCOUNTED VAL AT STJIM13090
     2ART='F12.2)                                                         JIM13100
      WRITE(IOUT,190)NSUB                                                 JIM13110
190   FORMAT(2X'INTEREST SUBSIDY PHASED OUT OVER'I3,1X'YEARS:'/            JIM13120
     12X'ANNUAL INTEREST SUBSIDY'/2X'YR ANNUAL SUBSID    DISC VALUE')     JIM13130
      WRITE(IOUT,200)(N,ASUB(N),ASUBD(N),N=NDV,NSB)                       JIM13140
200   FORMAT(2X,I2,2F14.2)                                                JIM13150
      WRITE(IOUT,210)TPISD,TPISDF                                         JIM13160
210   FORMAT(2X'TOTAL DISC VALUE= 'F12.2,/2X'DISC VAL AT START='           JIM13170
     1F12.2/)                                                             JIM13180
      WRITE(IOUT,220)RRETF,RRET,ARTA,ARTAD,ARTADF                         JIM13190
220   FORMAT(2X'REAL ESTATE TAX ABATEMENT'/2X'FULL RATE='F6.4',ACTUAL RAJIM13200
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     1TE='F6.4,/2X'ANNUAL ABATEMENT= 'F12.2,/2X'DISCOUNTED VALUE= 'F12.2JIM13210
     2,2X'DISC VAL AT START='F12.2)                                  JIM13220
      RETURN                                                         JIM13230
      END                                                            JIM13240
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